

# Ankit Sood, Ph.D.

## Post-doctoral fellow

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### **Research Interest**

Understanding behavior as a function of communication between multiple neural circuits and brain regions.

### **Education**

#### **2009–2018: Integrated Masters of Science and PhD**

Tata Institute of Fundamental Research, Mumbai, India

#### **2006–2009: Bachelor of Science (Honors) (Microbiology)**

University of Delhi, New Delhi, India

### **Relevant Research Experience**

#### **Current position: Post-doctoral fellow**

Understanding neural mechanisms underlying cue-driven motivational behaviors in models of alcohol and drug abuse.

Mentor: Dr. Jocelyn Richard

University of Minnesota, Minneapolis, USA

#### **2009-2018: PhD student and Research Associate**

Sexually Dimorphic Effects of Acute Stress on Neural Activation Patterns and Neuroimmune Signalling.

Mentor: Prof. Vidita Vaidya

Tata Institute of Fundamental Research, Mumbai, India

### **Publications**

1. Acute stress evokes sexually dimorphic, stressor-specific patterns of neural activation across multiple limbic brain regions in adult rats.

**Sood A**, Chaudhari K, Vaidya VA.

*Stress*, 2018 Jan; 10: 1-15.

2. Acute chemogenetic activation of medial prefrontal cortex excitatory neurons regulates anxiety-like behavior.

Pati S, **Sood A\***, Mukhopadhyay S\*, Vaidya VA. (\*equal contributing authors)

*Journal of Biosciences* 2018 Mar;43 (1):85-95.

3. Early emergence of altered 5-HT<sub>2A</sub> receptor-evoked behavior, neural activation and gene expression following maternal separation.  
**Sood A\***, Pati S\*, Bhattacharya A, Chaudhari K, Vaidya VA. (\*equal contributing authors)  
*International Journal of Developmental Neuroscience*, 2017 Oct 14; 65: 21-28.
4. Single episode of mild murine malaria induces neuroinflammation, alters microglial profile, impairs adult neurogenesis, and causes deficits in social and anxiety-like behavior.  
Guha SK, Tillu R, **Sood A**, Patgaonkar M, Nanavaty IN, Sengupta A, Sharma S, Vaidya VA, Pathak S.  
*Brain, Behavior, and Immunity*, 2014 Nov; 42: 123-37.

## **Technical skills**

### **1. Animal handling:**

- Rodent treatments – intraperitoneal and subcutaneous injections, oral administration of pharmacological agents to postnatal animals (P2-P21)
- Transcardial perfusion and fixation
- Dissection of the brain and collection of specific regions including hippocampus, mPFC, and hypothalamus
- Rodent organ collection – liver, adrenal glands, thigh muscle, white and brown adipose tissue, testes.

### **2. Behavior:**

- Anxiety-related behaviors: open field, elevated plus maze, elevated zero maze, light-dark box, novelty suppressed feeding
- Depression-related behaviors: forced swim test, tail suspension test, sucrose preference test

### **3. Memory and cognition:**

- novel object recognition, T-maze, Morris water maze

### **4. Surgical procedures:**

- Stereotaxic surgery in mice and rats in adults and pups (from P1)
- Tracing of neuronal circuits using retrograde tracers like Fluorospheres, Fluorogold or Adeno Associated Viruses (AAVs)
- Cannula and miniosmotic pump implantation
- Ovariectomy

### **5. Histochemistry and microscopy:**

- Brain tissue sectioning using vibratome, microtome, cryostat
- Immunohistochemistry/immunofluorescence
- Bright-field and confocal microscopy

**6. Cell/tissue culture:**

- Cell (HEK 293) and primary tissue culture (cortical culture)

**7. Molecular biology and biochemistry:**

- RNA isolation and cDNA synthesis and quantitative PCR
- Radioactive in-situ hybridization
- Western blotting

**8. Software packages and statistical analysis:**

- Behavior software: Ethovision and Smart maze
- Statistical software: InStat, Prism
- Basic image analysis using ImageJ
- Adobe Photoshop and Illustrator
- BLAST and Primer 3

**Honors and Awards**

**1. Invited Speaker - International Conference of Human Genetics & 39th Annual Meeting**

Indian Society of Human Genetics, Ahmedabad, India, (2014) Title:  
The Yin and Yang of Childhood Blues - Early Stress Adaptive or Maladaptive?

**2. Travel award to present at Society for Neuroscience meeting, Chicago, USA** Department of Science and Technology (DST), Govt. of India (2015)

**3. Travel award to present at Society for Neuroscience meeting, Chicago, USA** Department of Biotechnology (DBT), Govt. of India (2015)

**4. Travel award to present at Society for Neuroscience meeting, Chicago, USA** Centre for International Cooperation in Science (CICS) (2015)

**5. Travel award to present at International Society for Developmental Psychobiology meeting, Washington D.C., USA** International Society for Developmental Psychobiology (2014)

**6. Travel award to present at Society for Neuroscience meeting, Washington D.C., USA** Department of Biological Sciences, Tata Institute of Fundamental Research (TIFR) (2014)

**Posters presented and Meetings attended**

1. *Annual meeting of the Society for Neuroscience* (Poster presentation) Chicago, USA (2015)

2. *Adult neurogenesis -From stem cells to therapies* (Organizing volunteer) TIFR, Mumbai, India (2014)

3. *International Society for Developmental Neuroscience (ISDN)*

(Organizing volunteer) TIFR, Mumbai, India (2012)

4. *Maggot meeting: Neural Circuits to Behavior*  
NCBS-TIFR, Bengaluru, India (2010)

### **Teaching/Mentoring**

#### **Teaching Assistant**

*Molecular and Cellular Neuroscience*

Graduate level advance course

Instructor: Prof. Vidita Vaidya, TIFR, Mumbai, India (2013)

#### **Mentor**

Trained and mentored students in rodent neuroanatomy and immunohistochemistry during the course of my PhD

- 1 summer intern - Ms. Therese Twolfenstetter
- 3 Masters' students - Ms. Tasneem Arsiwala, Ms. Neha Kachewar and Ms. Karina Chaudhari

#### **Organizing volunteer**

- *Adult Neurogenesis – From stem cells to therapies*

Mumbai, India (2014)

- *19th Biennial Meeting of the International Society for Developmental Neuroscience*

Mumbai, India (2011)

#### **Outreach and organizational experience**

- Volunteer for TIFR Frontiers of Science – a one-day event with scientific demonstrations and lab visits for students of the 9<sup>th</sup> and 10<sup>th</sup> grades. (2009-2015)
- Volunteer in the 'Brain Camp' where I was involved in teaching students of 12<sup>th</sup> grade about basic brain anatomy and designing and executing small group projects.
- Volunteer in the organizing committee for the "Adult Neurogenesis – From stem cells to therapies" meeting in TIFR. (2014)
- Volunteer in the organizing committee for "19th Biennial Meeting for the International Society for Developmental Neuroscience (ISDN)", in TIFR. (2012)

### **References**

1. Prof Vidta. A. Vaidya,  
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3. Prof. Maithreyi Narasimha,  
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