

## Soumen Jana

Okinawa Institute of Science and Technology Graduate University (OIST)

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## Research Experience

Supervisor: Assoc. Prof. Bernd Kuhn Jan 2018-until the present, OIST, Japan

Project: *Modulatory effect of stellate interneurons on voltage changes in Purkinje neuron (PN) distal dendrites in awake mice.*

**Project outline:** The aim of the project is to investigate PN dendritic integration in relation to inhibitory inputs. Simultaneously, I image pre-synaptic calcium activity (with GCaMP) from stellate interneurons, and voltage imaging (with ANNINE-6plus) from post synaptic PN distal dendrite's subthreshold and suprathreshold voltage maps in response to sensory stimuli.

Supervisor: Assoc. Prof. Yoko Sugiyama Sept 2017-Dec 2017, OIST, Japan

Project: *Developmental changes of norepinephrine and dopaminergic projections at caudo-medial part of the neostriatum (NCM) in Zebra Finch.*

**Project outline:** In Zebra finch, number of norepinephrine (NE) and dopaminergic projections at NCM, from robust nucleus of the archistriatum (RA) and caudomedial hyperstriatum ventrale (CMHV) changes at different developmental stages. This study focuses on if there is any correlation between NE/dopaminergic projections change at RA& CMHV and song learning during different developmental stages.

Supervisor: Assoc. Prof. Bernd Kuhn May2017-Aug 2017, OIST, Japan

Project: *Sparse labeling of layer VI neurons at posterior parietal cortex.*

**Project outline:** This aims to study genetically-directed neuronal labelling for functional & morphogenic analysis. To do so AAV1.Cre was diluted serially while keeping the AAV1.Flex.eGFP & AAV1.Flex.tdTomato concentration constant to achieve dual-color high contrast labeling of layer VI neurons of the posterior parietal cortex.

Supervisor: Prof. Jayasri Das Sarma May 2014-May 2016, IISER Kolkata , India

Project: *Role of Cellular Prion Protein in Mouse Hepatitis Virus induced Neuroinflammation.*

**Project outline:** Mouse HepatitisVirus induced inflammation in murine central nervous system acts as a model system to study neuroinflammation and demyelination. In this model, our study mainly focuses on the regulation of cellular prion protein expression (PrPC) in neuroinflammatory condition.

## Education

**Ongoing Degree: PhD** (4<sup>th</sup> Year), Expected date of completion Aug 2021

Thesis title: Modulatory effect of stellate interneurons on voltage changes in Purkinje neuron distal dendrites in awake mice.

Supervisor: Assoc. Prof. Bernd Kuhn, Optical Neuroimaging Unit, OIST

**MS in Biological Sciences**, June 2013-June 2016

Thesis title: Regulation and Expression of Prion Protein in Brain due to Mouse Hepatitis

Virus induced neuroinflammation.

Supervisor: Prof. Jayasri Das Sarma, IISER Kolkata, West Bengal, India

**BS in Microbiology**, June 2010-June 2013

Thesis title: The antibacterial properties of nanoparticles, synthesized from capsular polysaccharide of *Klebsiella Pneumoniae*.

Supervisor: Dr. Soumitra Mondal, Vidyasagar University, West Bengal, India

## Conference/Symposium

- Gordon Research Conference (GRC) Cerebellum, Les Diablerets, Switzerland 2019
- The 16th International Membrane Research, OIST, Japan 2019
- Voltage-Imaging Mini-Symposium, OIST, Japan, 2018
- Poster presentation, 33rd Annual Conference of Indian Academy of Neurosciences, India, 2015 Title of Presentation: Regulation of Prion Protein expression in central nervous system due to Mouse Hepatitis Virus infection.
- Poster Presentation, 39th All India Cell Biology Conference, India, 2015 Title of Presentation: Regulation of Prion Protein expression in CNS due to neuroinflammation caused by Mouse Hepatitis Virus.

## Workshops

- GBI-ABiS international training course for bioimage analysis, OIST, Japan, 2018
- Nature Research Academies Workshop, OIST, Japan 2017

## Awards & Scholarships

- National Eligibility Test (PhD fellowship for Indian student): All India rank 63, June 2016
- Saradmoni Memorial Gold Medal: BS in microbiology, highest marks holder in class of Biological Science, Vidyasagar University (2013)
- University Gold Medal: BS in microbiology, highest marks holder in class of Microbiology, Vidyasagar University (2013)
- Highest marks holder in stream of Science, Gopalnagar Beharilar Vidyapith High School (2010)

## Professional skills

- Languages: English (fluent), Hindi (fluent), Bengali (mother tongue)
- MATLAB: Basics of 2Photon (2P) image analysis, Image J: Basics of Image analysis
- 2P imaging, voltage imaging (ANNINE-6plus), calcium imaging (genetically encoded indicators), confocal microscopy, electron microscopy, immunohistochemistry, Western Blot, RT-PCR, primary and immortalized cell culture