3rd Annual BSSE Research Symposium

With a focus on

“Computational Bioengineering”

Date: January 27-28, 2017

Venue: CES Seminar Hall

BSSE annual research symposium: Schedule

Day 1: January 26, 2017

2-4 pm: Registration and organization

Day 2: January 27, 2017

Session chair: Prof. G. K. Ananthasuresh

9-10 am: Sanjay Biswas memorial lecture: Prof. Vijay Chandru (Strand Life Sciences): DNA as information

Coffee: 10-10.20 am

Session I: Neuroengineering I (Systems level)

Session chair: Prof. Aditya Murthy

10.20-10.50 am: Dr. S.P. Arun (IISc): Cracking the code for visual objects

10.50-11.10 am: Puneet Singh (BSSE, IISc): Computations underlying motor learning

11.10-11.30 am: Aakash Agarwal (BSSE, IISc): How reading changes letter representations: a double dissociation using orthographically distinct scripts in India

11.30 am-12.00 pm: Dr. Ramesh Kumar Mishra (UoH): Brain plasticity in hearing impaired population: Effects on conscious and unconscious visual processing

12-12.20 pm: Varsha V. (BSSE, IISc): Deciphering the control architecture of voluntary movements
12.20- 12.40 pm: **Aditi Kathpalia** (NIAS): *On the Limitations of Causality Measures in Neuroscience*

12.40-1.00 pm: **Sahil Moza** (NCBS): *Divisive gain control in the hippocampal CA3-CA1 network mediated by tight excitation inhibition balance*

**Lunch: 1-2 pm**

**Session II: Network Biology**

Session chair: **Dr. Rahul Roy**

2-2.30 pm: **Prof. Grant Lythe** (University of Leeds): *Why is immunology like astronomy?*

2.30-2.50 pm: **Pradeep S.** (BSSE, IISc): *Conformational selection by an α-Pore forming toxin upon cholesterol binding drives membrane rupture*

2.50-3.10 pm: **Vasundhara G.** (IMI, IISc): *How similar are your networks?*


**Coffee: 3.30-3.50 pm**

Session chair: **Prof. Saumitra Das**

3.50-4.20 pm: **Prof. Narendra Dixit** (IISc): *Evolutionary advantages of cross-talk between two component signalling systems of Mycobacterium tuberculosis*

4.20-4.40 pm: **Gaurav Sankhe** (BSSE, IISc): *Kinetic analysis of two component signalling systems (TCSs) in Mycobacterium tuberculosis*

4.40-5.00 pm: **Raghu Bhagavat** (IMI, IISc): *Identification of Nucleoside triphosphate binding space (NTPome) in Mycobacterium tuberculosis by a systemic sub-structural analysis*

**Day 3: January 28, 2017**

**Session III: Neuroengineering II (Neuron level)**

Session chair: **Prof. Sandhya S. Visweswariah**

9-9.30 am: **Dr. Nitin Gupta** (IITK): *Oscillatory synchrony and sensory representations: insights from insect olfactory system*

9.50-10.10 am: **Rahul Badhwar** (IITJ): *Distance constrained synaptic plasticity model and control of C. elegans neuronal networks*

10.10-10.30 am: **Nilapratim Sengupta** (IITB): *To hold on to or to let go: Decoding the Bladder using Biophysical Computation*

**Coffee: 10.30-10.50 am**

10.50-11.20 am: **Dr. Rishikes Narayanan** (IISc): *Stores, Waves and Glue*

11.20-11.40 am: **Harilal Parasuram** (Amritha University): *Computational Neuroscience of Local Field Potentials*

11.40 am-12.30 pm: Poster session

**Session IV: Industry lectures**

Session chair: **Dr. Siddharth Jhunjhunwala**

12.30-1 pm: **Dr. Santanu Datta** (Bugworks): *Computational Model of a Pathogenic Bacteria: Many Questions, Some Answers*

**Lunch: 1-2 pm**

2-2.30 pm: **Dr. Sharmila Mande** (TCS Research): *Gut microbiome and human health*

**Session V: Biomechanics**

Session chair: **Prof. G. K. Ananthasuresh**

2.30-3.00 pm: **Dr. Sovan Lal Das** (IITKGP): *Mechanics of Non-woven Fibrous Matrices and Their Interactions With Cells*

3.00-3.20 pm: **Sreenath B.** (BSSE, IISc): *Investigating the changes in biomechanics of liver cells upon Hepatitis C Virus infection*

3.20-3.40 pm: **Ankit Agrawal** (IMSC): *A Computational Model of Large-scale Nuclear Architecture*

**Coffee: 3.40-4.00 pm**

4.00-4.30 pm: Closing and feedback session.