

**International Conference on “Networks in Biology, Social Sciences
and Engineering”
(July 12 – 14, 2012)
PROGRAMME**

12 July 2012 (THURSDAY)

Venue: MRC Auditorium, IISc Bangalore

Session Chair: Kim Sneppen

08:30AM - 09:00AM: **REGISTRATION**

09:00AM - 09:30AM: “*Metabolic efficiency and the shapes of life*”
Jayant Banavar, University of Maryland, College Park

09:30AM - 10:00AM: “*Graphs and hypergraphs as tools to understand metabolism*”
Eric Smith, Santa Fe Institute, Santa Fe

10:00AM - 10:30AM: “*Network Properties of Protein Structures Relevant to Function*”
Saraswathi Vishveshwara, IISc, Bangalore

10:30AM – 11:00AM: Coffee/Tea Break

Session Chair: Saraswathi Vishveshwara

11:00AM - 11:30PM: “*Using topology to tame the complex biochemistry of genetic networks*”
Mukund Thattai, National Centre for Biological Sciences, Bangalore

11:30AM - 12:00PM: “*External Control and Chaotic Dynamics in Oscillating Genetic Networks*”
Mogens H. Jensen, University of Copenhagen, Copenhagen

12:00PM - 12:30PM: “*Network biology as a new approach to drug discovery*”
Nagasuma Chandra, IISc, Bangalore

12:30PM - 01:00PM: “*The mammalian olfactory system and optimal processing of odorant mixtures by artificial sensor arrays*”
Alex Morozov, Rutgers University, USA

01:00PM - 02:00PM: LUNCH BREAK

Session Chair: Matteo Marsili

02:00PM - 02:30PM: "*Law of the few: Experimental Evidence*"
Sanjeev Goyal, University of Cambridge

02:30PM - 03:00PM: "*Structure of collaboration in Indian Social Sciences: exploring the dynamics*"
Bino Paul, Tata Institute of Social Sciences, Mumbai

03:00PM – 03:30PM: Coffee/Tea Break

Session Chair: Mogens H. Jensen

03:30PM – 04:00PM: "*Amplitude death of neuron network and Alzheimer disease*"
Ravindra E. Amritkar, PRL Ahmedabad

04:00PM – 04:30PM: "*Scalable ultra-sensitive detection of heterogeneity via coupled bistable dynamics*"
Sudeshna Sinha, IISER Mohali

04:30PM – 05:00PM: "*Catalysis in Reaction Networks*"
Manoj Gopalkrishnan, TIFR-Mumbai

05:00PM – 05:30PM: "*Nested autocatalytic networks: A mechanism for the primordial origin of large molecules*"
Sanjay Jain, University of Delhi, Delhi

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13 July 2012 (FRIDAY)

Venue: MRC Auditorium, IISc Bangalore

Session Chair: Y. Narahari

09:00AM - 09:30AM: *“To be announced”*

Eitan Altman, INRIA Paris

09:30AM - 10:00AM: *“From hot gossip to a cool image”*

Vivek Borkar, IIT Bombay, Mumbai

10:00AM - 10:30AM: *“Co-evolution of Influence and Content Spread in Mobile Opportunistic
Networks”*

Anurag Kumar, IISc, Bangalore

10:30AM – 11:00AM: Coffee/Tea Break

Session Chair: E. Altman

11:00AM - 11:30PM: *“Mechanism Design for Task Accomplishment in Crowd sourcing Networks”*

Y. Narahari, IISc, Bangalore

11:30PM - 12:00PM: *“Community structure and scale-free collections of Erdos--Renyi graphs”*

C. Seshadhri, Sandia National Laboratories, Livermore

12:00PM - 12:30PM: *“Towards Scalable Network Clustering and Module Identification”*

Parthasarathy Srinivasan, The Ohio State University, USA

12:30PM - 01:00PM: *“To be announced”*

Chris Barrett, Virginia Bioinformatics Institute, Blacksburg

01:00PM - 02:00PM: LUNCH BREAK

Session Chair: Eric Smith

02:00PM - 02:30PM: *“Modelling multi-cell systems”*
Somdatta Sinha, IISER Mohali

02:30PM - 03:00PM: *“Bacteriophage networks that can count genomes”*
Sandeep Krishna, NCBS, Bangalore

03:00PM – 03:30PM: Coffee/Tea Break

03:30PM – 05:30PM: Poster presentation

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14 July 2012 (SATURDAY)

Venue: MRC Auditorium, IISc Bangalore

Session Chair: Sanjay Jain

09:00AM - 09:30AM: “*Epigenetics in Cis and Multistability*”
Kim Sneppen, Niels Bohr Institute

09:30AM - 10:00AM: “*Role of Synthetic Genetic Interactions in Understanding Functional Interactions among Pathways*”
Ananth Grama, Purdue University, Indiana

10:00AM - 10:30AM: “*Universal distribution of the frequency of usage of components in biological and technological systems*”
Sergei Maslov, Brookhaven National Laboratory, New York

10:30AM – 11:00AM: Coffee/Tea Break

Session Chair: Vivek Borkar

11:00AM - 11:30PM: “*Optimization and control of contagion processes in co-evolving networks*”
Madhav Marathe, Virginia Bioinformatics Institute, Blacksburg

11:30AM - 12:00PM: “*Network effects of risk behavior change following prophylactic Interventions*”
Ravi Sundaram, Northeastern University, Boston

12:00PM - 12:30PM: “*Nature of Transition in Explosive Percolation*”
Subhrangshu S. Manna, S.N. Bose National Centre for Basic Sciences, Kolkata

12:30PM - 01:00PM: “*Statistics of transmission of packets and explosive percolation in branching hierarchical networks*”
Neelima Gupte, IIT-Madras

01:00PM - 02:00PM: LUNCH BREAK

Session Chair: Sergei Maslov

02:00PM - 02:30PM: *“Collaboration in social networks”*

Matteo Marsili, The Abdus Salam International Centre for Theoretical Physics,
Italy

02:30PM - 03:00PM: *“Cis-regulatory adaptation of a protein complex in a pathogenic yeast”*

Himanshu Sinha, TIFR, Mumbai

03:00PM - 03:30PM: Coffee/Tea Break