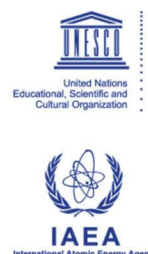




The Abdus Salam
**International Centre
for Theoretical Physics**
50th Anniversary 1964–2014



Winter School on Quantitative Systems Biology

1 - 12 December 2014
Miramare, Trieste, Italy

The Abdus Salam International Centre for Theoretical Physics, is organizing a *Winter School on Quantitative Systems Biology* from 1 to 12 December 2014. It will be directed by **V. Balasubramanian** (Univ. of Pennsylvania, USA and CUNY Graduate Center, USA) and **A. Treves** (SISSA, Italy). The School is part of the *Programme in Biology* between ICTP and the **International Centre for Theoretical Sciences (ICTS)** in Bangalore, India.

New experimental techniques are opening windows on biological mechanisms inside the cell and in the brain, making these systems accessible to quantitative investigation. These advances have shown the importance of the concerted interaction of many agents in producing overall behaviors, and call for an understanding of biological functions at the systemic level. The series of Winter Schools in Quantitative Systems Biology, initiated in 2012, responds to the need to provide physicists with a broad exposure to quantitative problems in the study of living systems. The school is particularly targeted to young researchers, especially at the Ph.D and postdoc level who either work in this area or hope to do so.

The 2014 School will focus on **Systems Neuroscience** and cover different aspects of this rapidly developing field, such as:

- Neural coding and dynamics
- Connectomics
- Statistical inference in large neural datasets
- Optogenetics and gene expression in the brain
- Sensory systems: vision, olfaction, audition
- Computational neuroscience
- Synaptic plasticity, learning and memory
- Neuroscience of reward and decision making
- Spatial cognition
- Higher order cognitive processes

Series of lectures in these topics will be given by an array of distinguished speakers. Research seminars associated with the school will also provide a venue for scientific exchange at the cutting edge.

PARTICIPATION:

Scientists and students from all countries which are members of the United Nations, UNESCO or IAEA may attend the School. As it will be conducted in English, participants should have an adequate working knowledge of that language. Although the main purpose of the Centre is to help researchers from developing countries, through a programme of training activities within a framework of international cooperation, a limited number of students and post-doctoral scientists from developed countries are also welcome to attend.

As a rule, travel and subsistence expenses of the participants should be borne by the home institution. Every effort should be made by candidates to secure support for their fare (or at least half-fare). However, limited funds are available for some participants who are nationals of, and working in, a developing country, and who are not more than 45 years old. Such support is available only for those who attend the entire activity. **There is no registration fee.**

HOW TO APPLY FOR PARTICIPATION

The application form can be accessed at the activity website
<http://agenda.ictp.it/smr.php?2618>

Once in the website, comprehensive instructions will guide you step-by-step, on how to fill out and submit the application form.

Deadline for requesting participation: **1 June 2014**

ACTIVITY SECRETARIAT:

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E-mail: smr2618@ictp.it ICTP Home Page: <http://www.ictp.it/>

Directors

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A. Celani (ICTP, Italy)

N. Chandra (IISc, India)

S. Jain (Univ. of Delhi, India)

M. Marsili* (ICTP, Italy)

A. Sengupta (Rutgers State Univ., USA)

M. Thattai (NCBS, India)

M. Vendruscolo (Univ. Cambridge, UK)

* local organizer

Invited Lecturers:

Winfried Denk (Max Planck Inst., Germany)

Stefano Fusi (Columbia, USA)

Kate Jeffery (UCL, UK)

Etienne Koechlin (ENS Paris, France)

Venkatesh Murthy (Harvard, USA)

Israel Nelken (Hebrew Univ., Israel)

Botond Roska (FMI, Switzerland)

Wolfram Schultz (Univ. Cambridge, UK)

Tatyana Sharpee (Salk Institute, USA)

Misha Tsodyks (Weizmann Institute, Israel)

Fred Wolf (Univ. Göttingen, Germany)

Invited Speakers include:

Mohammad Herzallah (Al Quds, Palestine)

Emilio Kropf (Leloir Institute, Argentina)

Gabriel Mindlin (Univ. Buenos Aires, Argentina)

Remi Monasson (ENS Paris, France)

Yasser Roudi (NTNU, Norway)

Gasper Tkacik (IST, Austria)

DEADLINE
for requesting participation

1 JUNE 2014