# IX Summer School AACIMP – 2014

August 1—15, 2014, Kyiv (Ukraine)

# Neuroscience Stream

The Neuroscience (NS) stream will provide essential review of the contemporary computational neuroscience and introduce to analytical and simulation packages. We will present broad range of topics, i.e. dynamical principles of visual and auditory systems, rhythm generation, neuromechanics of movement control, neuron-computer interface in dynamic -clamp experiments, brain computer interfaces. We will use practical examples of applications of modelling and biosignal analysis for functional assessment of movement control mechanisms and dynamics of sensory systems.

## Topics

- Neurons as dynamical systems and regimes of neuronal activity
- Multistability in neuronal dynamics
- Multicompartmental and stochastic models
- Computational psychiatry and computational neurology: new disciplines
- Cybernetics, AI, Cognitive Science and Computational Neuroscience: Historical Aspects
- Computational Social Science
- Circadian Clock in Mammals
- Auditory System
- Detailed model of visual cortex
- Phase resetting theory for deterministic and stochastic neural systems
- Molecular Mechanisms of Pain
- Neuromechanics of Movement Control

## Tutors

**Dr. Pavel Belan**, Head of Research Group at the Department of General Physiology of the Nervous System, Bogomolets Institute of Physiology of the NASU, Kyiv, Ukraine**.**

**Dr. Gennady S. Cymbalyuk**, Associate Professor, Dynamical Neuroscience Laboratory, Neuroscience Institute, Georgia State University, Atlanta, USA.

**Prof. Péter Érdi**, Henry R. Luce Professor, Kalamazoo College, Kalamazoo, USA

**Dr. Nikolai Kononenko**, Leading Researcher, Department of General Physiology of Nervous System, Bogomolets Institute of Physiology of the NASU, Kyiv, Ukraine

**Mr. Ilya Kuzovkin**, MSc., researcher at the Department of Computer Science, University of Tartu, Estonia.

**Dr. Ruben Tikidji-Hamburyan**, Senior Researcher, A.B.Kogan Research Institute for Neurocybernetics, Southern Federal University, Rostov-on-Don, Russia; Visiting Researcher, Louisiana State University, Health Sciences Center, New Orleans, USA.

**Dr. Nana Voitenko**, Head of the Laboratory of Sensory signalling, Department of General Physiology of Nervous System, Bogomolets Institute of Physiology of the NASU, Kyiv, Ukraine.

**Dr. Sergiy Yakovenko**, Assistant Professor, Neural Engineering Laboratory, West Virginia University School of Medicine, WV, USA.

**June, 15, 2014**
late registration

Use the online application form to apply for participation in the stream.

Program committee decides on approval of one's participation within a month from the date of submitting of an application form.

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http://summerschool.ssa.org.ua