



# **Neurogenetics: unraveling behavior and disease mechanisms using modern technology**

**3rd BioN School 2012, the end of August**

**Dr. Victoria Moiseeva  
Lomonosov Moscow State university**

**19/12/2011**



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## Organizing Committee

Anokhin K. (*Institute of Normal Physiology RAS, Moscow*)

Balaban P. (*Institute of Higher Nervous Activity and Neurophysiology RAS*)

Martynova O. (*Institute of Higher Nervous Activity and Neurophysiology RAS*)

Moiseeva V. (*Lomonosov' Moscow State University*)

Pavlov I. (*UCL, London*)

Poletaeva I. (*Lomonosov' Moscow State University*)

Terenina E. (*INRA, Toulouse, France*)

Mormede P. (*INRA, Toulouse, France*)

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## **Topics of the school:**

Genetic tools to study cellular neurophysiology  
Functional genomics  
Model organisms  
Behavior and cognition  
Disease mechanisms

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## Preliminary program:

### Day 1:

Program: **Overview of methods and approaches** (Chaired by Pavlov Ivan ?, *UCL, London*)

Genetic tools to study cellular neurophysiology

Molecular genetics/Network genetics/ - Elisa Chesler or Robert Williams (Memphis, USA)

Viral transfections. Eugeny Budygin (Winston-Salem University, USA)

Optogenetics. Eugeny Budygin (Winston-Salem University, USA)

Functional genomics

Candidate genes approach – Aleksander Kulikov (Novosibirsk)

Population genetics Zhyvotovskiy Lev (Moscow)

*Seminar* Experimenting *in silico* - Boris Gutkin (ENS)

Poster section



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## Preliminary program:

### Day 2:

Program: **Model organisms** (Chaired by Terenina Elena?, *INRA, Toulouse, France*)  
Genetics models for behavioural genetics studies (inbred lines, congenics, recombinant inbred lines, divergent selection) (Terenina Elena)  
Mouse genetics and animal behaviour tests Hans-Peter Lipp (Zurich-Irchel University).  
**Other candidates are: Vootele Võikar (University of Helsinki) or [Valter Tucci \(IIT\)](#) or David Wolfer**

### Model organisms:

Drosophila as a model organism Charalambos P. Kyriacou (University of Leicester, United Kingdom) ?

Zebrafish as a model organism – Pertti Panula (University of Helsinki)

Nematode as a model organism Catharine H. Rankin (Canada) ?

### Debates

Animal cognition. Evolution and human cognition prehistory ( Zoya Zorina, MSU)



## Preliminary program:

### Day 3:

Program: **Behaviour and cognition** (Chaired by Balaban Pavel? *Institute of Higher Nervous Activity and Neurophysiology RAS*)

Stress – Pierre Mormede (INRA, Toulouse, France);

Genetics and emotional behaviour (emotional reactivity, temperament) – Elena Terenina (INRA, Toulouse, France);

Genetics of stress biology – Pierre Mormede (INRA, Toulouse, France);

Neurogenetic markers of behavioral plasticity - Konstantin Anokhin (MSU) + (Lazutkin, Tiunova, Zarayskaya – choice of K.V.?)

Neurogenetics of synaptic plasticity regulation– Pavel Balaban (Moscow)



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## Preliminary program:

### Day 4:

Program: **Behaviour and cognition (continuation)** (Chaired by Anokhin Konstantin?  
(*Institute of Normal Physiology RAS, Moscow*))

Neurogenetics and aggressive behaviour – Nina Popova (Novosibirsk) ?

Molecular mechanisms of memory maintenance - Nikitin E.S. ?

Neurogenetics of regulation of behavior by peptides - Zakharov I.S. (Inst. Developmental Biology RAS) ?

Program: **Disease mechanisms** (Chaired by Poletaeva Inga? (*MSU, Moscow*))

Neurogenetics of neurological disorders. Inga Poletaeva (MSU)

Genetic approach meets neuropharmacology. Identification of new therapeutic targets.

Raul Gainetdinov (IIT)

Pharmacogenetics – Byron C. Jones (USA)

Channelopathy: a broken channel. Gene mutations and disease. – Stephanie Schorge (UCL)



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## Preliminary program:

### Day 5:

Seminar Dynamic clamp: a powerful tool to explore your electrophysiological phenotype

– Ivan Pavlov (UCL)

Dinner

Career workshop ?

**Day 6:** Arrival.