

Minor Hall of the House of Scientists, 23 Morskoy prospect (ave.),  
Akademgorodok, Novosibirsk, Russia

## **TIMETABLE**

### ***Monday, 7 August 2017***

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8:30–10:00	Registration
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Morning session

10:00	Opening of Conference
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Afternoon session 14:00	Session “Domestication and Animal Genetics”
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<b>17:30</b>	<b>Unveiling of the statue of Dmitry Belyaev</b>
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19:00	Welcome Reception
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### ***Tuesday, 8 August 2017***

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Morning session 9:00	Session “Physiological Genetics and Epigenetics”
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14:00	Poster Session One
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Afternoon  
session

14:40	Session “Molecular genetics and Cell biology”
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19:00	Evening Public Lecture
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### ***Wednesday, 9 August 2017***

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Morning session 9:00	Session “Medical genetics. Human genetics. Biomedicine”
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14:00	Poster Session Two
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Afternoon  
session

14:40	Session “Bioinformatics”
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19:00	Evening Public Lecture
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## ***Tuesday, 10 August 2017***

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Morning session  
9:00

Session "Plant Genetics"

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10:40

Closing plenary lecture

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11:30

**Round Table around Dmitry Belyaev**

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13:00–13:30

Close of Conference

## **Satellite symposia**

### ***Tuesday, 8 August 2017***

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Biomedicine in neuroscience: symptoms, diagnosis,  
and treatment

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9:30–16:30

pHBMRI, 4 Timakova ulitsa (str.), Novosibirsk, Russia

### ***Wednesday, 9 August 2017***

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Biomedicine in neuroscience:  
symptoms, diagnosis, and  
treatment

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9:30–16:10

pHBMRI, 4 Timakova ulitsa  
(str.), Novosibirsk, Russia

Molecular Genetic Mechanisms  
of the Pathogenesis of Glaucoma

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10:00–16:00

IC&G SB RAS, 10 Laverntyeva  
prospekt (ave.), Akademgorodok,  
Novosibirsk, Russia

Monday, 7 August

Morning session

8:30–10:00 Registration

**OPENING OF CONFERENCE**

**Session “Domestication and Animal Genetics”**

co-chairs – academician N.A. Kolchanov, professor S.J. O’Brien

- 10:00 *N.A. Kolchanov*. Welcome address
- 10:10 *V.K. Shumny*. To the centenary of the birth of Dmitri Belyaev, an outstanding evolutionist and the architect of the Institute
- 10:20 *I.A. Tikhonovich*. Welcome address on behalf of the Vavilov Society of Geneticists and Breeders
- 10:30 *L. N. Trut*. D.K. Belyaev and tame foxes
- 10:50 **Plenary lecture:** *S.J. O’Brien*. The taming of the cat
- 11:20 *Coffee break*
- 11:40 **Plenary lecture:** *A.S. Wilkins*. Examining two developmental hypotheses on the “domestication syndrome” from genomic data
- 12:10 **Plenary lecture:** *I.A. Zakharov-Gezekhus, Yu.A. Stolpovsky*. Genetic principles of gene pool conservation of domesticated animal species
- 12:40 *A.L. Markel*. On the human nature (following in the steps of D. K. Belyaev)
- 13:00 *Lunch break*

## Session “Domestication and Animal Genetics”

co-chairs – professor A.L. Markel, professor N.K. Popova

- 14:00 **Plenary lecture:** *P. Mormede, E.E. Terenina*. Molecular genetics of the adrenocortical axis and breeding for robustness
- 14:30 *V.N. Stegnyy*. Evolutionary significance of hard inbreeding in the light of D.K. Belyaev’s theory of destabilizing selection
- 14:50 *A.V. Kukekova, J.L. Johnson, X. Xiang, S. Feng, S. Liu, H.M. Rando, A.V. Kharlamova, Yu.E. Herbeck, N.A. Serdyukova, Z. Xiong, V. Beklemischeva, K. Koepfli, R.G. Gulevich, A.V. Vladimirova, D.V. Shepeleva, J.P. Hekman, P.L. Perelman, A.S. Graphodatsky, S.J. O’Brien, X. Wang, A.G. Clark, G.M. Acland, G. Zhang, L.N. Trut*. Red fox genome assembly identifies genomic regions associated with tame and aggressive behaviors
- 15:10 *A.S. Graphodatsky*. Chromosomes and genomes of domestic, fur and hunting mammals
- 15:30 *Coffee break*
- 15:45 *O.V. Trapezov, L.I. Trapezova*. Twenty generations selection of mink (*Neovison vison*) for behavior. What are the consequences?
- 16:05 *Yu.E. Herbeck, M.A. Genaev, G.V. Vasiliev, R.G. Gulevich, S.G. Shikhevich, D.V. Shepeleva, D.A. Afonnikov, L.N. Trut*. Expression of genes related with stress, behavior and photoperiodism in the brain of the domesticated foxes
- 16:25 *S.D. Maddux, E.K. Wood, T.E. Southard, A. Kharlamova, L. Trut, R.G. Franciscus*. Mosaic patterns of craniofacial, dental, and postcranial morphometric change in russian silver foxes
- 16:45 *P.D. Polly*. Morphometrics and evolution: the challenge of crossing rugged phenotypic landscapes with straight paths
- 17:30 Unveiling of the statue of Dmitry Belyaev**
- 19:00 Welcome Reception

## Session “Physiological Genetics and Epigenetics”

co-chairs – academician L.N. Ivanova, professor I.I. Poletaeva

- 9:00     **Plenary lecture:** *M. Szyf*. DNA methylation mediating the impact of experience on the phenotype
- 9:30     *N.K. Popova*. The domestication and the brain: forty years after
- 9:50     *L.V. Osadchuk, L.N. Trut*. Reproductive endocrinology of silver foxes: effects of long lasting selection on domestic behaviour
- 10:10    *S.S. Gogoleva, I.A. Volodin, E.V. Volodina, A.V. Kharlamova, L.N. Trut*. Effects of experimental domestication of silver foxes (*Vulpes vulpes*) on vocal behaviour
- 10:30    *O.V. Perepelkina, V.A. Golibrodo, N.V. Markina, N.V. Tarasova, I.I. Poletaeva*. Is it possible to study the genetics of animal cognition?
- 10:40    *Coffee break*
- 11:10    **Plenary lecture:** *I.A. Tikhonovich*. Localizing microorganismal communities: plants advice
- 11:40    *N.V. Shiryayeva, M.B. Pavlova, A.I. Vaido*. The characteristics of innate behavior of rat lines, selected on excitability of nervous system to electric current action
- 12:00    *O.V. Burenkova, E.A. Aleksandrova, I.Yu. Zarayskaya*. Immediate and enduring effects of brief repeated maternal separation and histone deacetylase inhibition in mice
- 12:20    *Lunch break*
- 14:00    **Poster Session One**

## Session “Molecular genetics and Cell biology”

co-chairs – professor T.I. Merkulova, professor N.B. Rubtsov

- 14:40 **Plenary lecture:** G. Dianov. Cellular response to genetic instability caused by DNA repair deficiency
- 15:10 S.G. Inge-Vechtomov, E.I. Stepchenkova. Alpha-test in yeast *Saccharomyces cerevisiae* as a system for the study of genetic material variability
- 15:30 K.S. Zadesenets, N.B. Rubtsov. Whole genome duplication in animal evolution
- 15:50 A.A. Nizhnikov, K.S. Antonets. Conditional prions in yeast *Saccharomyces cerevisiae*
- 16:10 *Coffee break*
- 16:30 O.M. Mazina, H. Keskin, K. Hanamshet, F. Storici, A.V. Mazin. RNA-templated DNA double-strand break repair: Role of RAD52
- 16:50 E.A. Ponomarenko, E.V. Ilgisonis, E.V. Poverennaya, A.T. Kopylov, V.G. Zgoda, S.P. Radko, Ya.Yu. Kiseleva, A.V. Lisitsa, A.I. Archakov. Targeted and panoramic views on the human chromosome 18 transcriptome and proteome
- 17:10 L.A. Lutova, I.E. Dodueva, M. Azarakhsh, M.S. Gancheva. The role of meristem regulators in the formation of economically valuable traits in plants
- 17:30 A.G. Menzorov, K.E. Orishchenko, A.A. Shevtsova, E.A. Kizilova, A.N. Golubitsa, A.I. Zhelezova, N.M. Matveeva, N.R. Battulin, N.B. Rubtsov, O.L. Serov. Derivation of mouse embryonic stem cell line with class III beta-tubulin expression marked by GFP
- 17:50–  
18:10 E.V. Kiseleva. Functional role of the endoplasmic reticulum in the nuclear envelope growth
- 19:00–  
19:45 **Evening Public Lecture**  
chair – professor P.M. Borodin  
A.O. Ruvinsky. Genes and light: many years later

### Session “Medical genetics. Human genetics. Biomedicine”

co-chairs – academician V.P. Puzyrev, professor N.G. Kolosova

- 9:00      **Plenary lecture:** V.S. Baranov. Evolution of predictive medicine
- 9:30      I.N. Lebedev. The evolution of ideas about the chromosomal diseases in genomic and post genomics era
- 9:50      M.P. Moshkin, L.A. Gerlinskaya, N.A. Feofanova, Yu.M. Moshkin. Immunogenic interactions of two and more genotypes during mammal pregnancy
- 10:10     E.K. Khusnutdinova, A.V. Kazantseva, R.F. Kanzafarova. Molecular genetic investigations of personality traits and psychopathologies
- 10:30     A.V. Igoshin, K.V. Gunbin, T.A. Potapova, A.G. Romaschenko, N.S. Yudin, M.I. Voevoda. Selection signatures at the human cold receptor TRPM8 gene
- 10:50     *Coffee break*
- 11:10     R.I. Bersimbaev, O.V. Bulgakova, A.A. Kussainova. Circulating Plasma MiR155-5p as lung cancer biomarker
- 11:30     N.D. Belyaev. Epigenetic mechanisms of gene expression regulation in Alzheimer's disease
- 11:50     V.A. Stepanov. Genome and disease. Modern medical genetics
- 12:10     E.A. Rudnitskaya, N.A. Stefanova, N.G. Kolosova. Alterations of brain neurotrophic supply during development of sings of Alzheimer's disease: experimental study
- 12:30     **PRESENTATION OF THE COMPANY “BIO-RAD LABORATORIES”, INC**  
A. Shnyreva. Single cell expression profile – a new approach from Bio-Rad and Illumina
- 12:40     *Lunch break*
- 14:00     **Poster Session Two**

## Session "Bioinformatics"

co-chairs – Dr. D.A. Afonnikov, professor H.V. Westerhoff

- 14:40      **Plenary lecture:** *Hans V. Westerhoff*. Principles of systems biology and Dmitri Belyaev's co-selection of traits
- 15:10      *N.A. Kolchanov, S.A. Lashin*. Regulatory circuits in gene networks: organization and evolution
- 15:30      *N. Sahin, H.V. Westerhoff, A. Kolodkin*. Designing the emergence of progressive (PROP) and regressive (REP) preconditioning responses: from intelligent intracellular networks to the domestication of animals
- 15:50      *J.G. Koster*. Systems forensics: systems biology and the inference of crime
- 16:10      *M.V. Sharakhova, A.A. Yurchenko, A.N. Naumenko, G.N. Artemov, V.N. Stegnyy, I.V. Sharakhov*. Evolutionary history of the malaria mosquitoes from maculipennis group in Eurasia
- 16:30      *Coffee break*
- 16:50      *S.A. Bondarev, O.I. Poleshuk, G.A. Zhouravleva, A.V. Kajava*. The approach for reconstruction of amyloid structure *in vivo*
- 17:10      *A.A. Igolkina, S.V. Nuzhdin, M.G. Samsonova*. Analysis of gene expression variation in schizophrenia: a structural equation approach
- 17:30      *E.A. Trifonova, V.A. Likhoshvai*. Complex dynamics of local translation in synapse: mathematical model
- 17:50–  
18:10      *V.M. Subbotin*. Arguments on the origin of the vertebrate liver and the amphioxus hepatic diverticulum: a hypothesis on evolutionary novelties
- 19:00–  
19:45      **Evening Public Lecture**  
co-chairs – professor N.G. Kolosova, professor N.K. Popova  
*M.V. Ugrumov*. Role of the brain in neurohumoral regulation of the development of the whole organism



### Session "Plant Genetics"

co-chairs – professor L.A. Pershina, professor E.K. Khlestkina

- 9:00 L.A. Pershina, L.A. Belova, L.A. Kravtsova, T.S. Osadchaya, N.V. Trubacheeva, V.K. Shumny, Belan I.A., L. P. Rosseeva, V.V. Nemchenko. Biotechnological approaches to developing new genotypes and accelerating the breeding stage of common wheat
- 9:20 Yu.M. Konstantinov, M.V. Koulintchenko, E.S. Klimenko, T.A. Bolotova, V.I. Tarasenko, V.N. Shmakov, V.I. Bel'kov, V.V. Chernikova, F. Weber-Lotfi, A. Dietrich. DNA import and instability of mitochondrial genome in higher plants: evolutionary, genetical and applied aspects
- 9:40 E.A. Salina, E.M. Sergeeva, M.A. Nesterov, A. Korol, A.F. Muterko, IWGSC. New insight on 5B wheat chromosome evolution based on interspecies physical and genetic mapping
- 10:00 E.K. Khlestkina, A.M. Korotkova, S.V. Gerasimova, K.A. Ivanova, A.V. Kochetov, V.K. Shumny. CRISPR/Cas for plant domestication and breeding
- 10:20 O.B. Dobrovolskaya, P. Martinek, M.P. Ponomarenko, A.F. Muterko, Y. Amagai, A.A. Krasnikov, E.D. Badaeva, K.I. Popova, Yu.L. Orlov, J. Salse, N. Watanabe. Genes for wheat inflorescence architecture: structure, function and evolution
- 10:40 **Closing plenary lecture:**  
A.A. Yurchenko, N.S. Yudin, R.B. Aitnazarov, A.B. Plysnina, D.M. Larkin. Population structure, history of formation and signatures of selection in genomes of the native cattle breeds from Russia
- 11:10 *Coffee break*
- 11:30 **Round Table around Dmitry Belyaev**  
co-chairs – academician V.K. Shumny, professor P.M. Borodin

**13:00–13:30 CLOSE OF CONFERENCE**

# Tuesday, 8 August

## Satellite symposium “Biomedicine in neuroscience: symptoms, diagnosis, and treatment”

Venue of the conference – State Scientific-Research Institute of Physiology & Basic Medicine

Chair – Professor, Academician of RAS Lubomir I. Aftanas, M.D., Ph.D., Dr. Sci.

### 9:30–16:30 OPENING CEREMONY

- 10:00–** Co-chairs – Professor, Academician of RAS Lubomir  
**13:00** I. Aftanas, M.D., Ph.D., Dr. Sci.; Professor Te-Jen Lai, M.D.
- 10:00 Plenary lecture: Nikolai D. Belyaev. D.K. Belyaev’s heritage
- 10:30 Pan-Fu Kao, J.H. Weng, Y.J. Ho. The clinical use of 99mTc-TRODAT-1 imaging in Parkinson disease: a molecular imaging agent development experience in Taiwan
- 11:00 Te-Jen Lai, C.L. Lin, H.H. Li, P.Y. Chiu, Y.J. Ho. Dysregulation of insulin signaling plays an important role in dementia with Lewy bodies (DLB)
- 11:30 Coffee break
- 11:50 Wei-Han Wang, M.S. Hua. Social functioning in patients with temporal lobe epilepsy
- 12:20 Pai-Yi Chiu. History-based computerized diagnostic system for the clinical assessment of dementia
- 12:50 Discussion
- 13:00 Lunch break
- 14:00–** Co-chairs – Dr. Konstantin V. Danilenko, M.D.; Professor  
**16:30** Qiang Zhou, Ph.D.
- 14:00 Gennadiy G. Knyazev. Depression and resting state networks
- 14:30 Konstantin V. Danilenko, M.Y. Lebedinskaia, E.V. Gadetskaia, A.A. Beklemisheva, E.D. Nikolenko, L.I. Aftanas. 6-day combined partial wake and light therapy for depression
- 15:00 Coffee break
- 15:20 Tatiana V. Lipina, T. Berger, T.W. Mak, J.C. Roder, L.I. Aftanas. Age-dependent effects of lipocalin-2 (LCN2) on cognitive performance in mice
- 15:50 Lulu Yao, J. Ju, Q. Zhou. Effects of glycine and D-cycloserine on *in vivo* neuronal activity in a mouse model of schizophrenia
- 16:20–16:30 Discussion

# Wednesday, 9 August

- 9:30–12:30**    **Co-chairs – Dr. Tamara G. Amstislavskaya, Ph.D., D.Sci.; Professor Ying-Jui Ho, Ph.D.**
- 9:30    *A.C. Chen, C.T. Tai, J.C. Weng, P.F. Kao, C.Y. Shen, W.H. Wang, C.C. Kuo, M.A. Tikhonova, T.G. Amstislavskaya, Ying-Jui Ho.*  
Treatment for Parkinson's disease with an old medicine: data of animal and human
- 10:00    *Y.J. Ho, M.S. Lin, Jun-Cheng Weng.* Detecting neuronal activity in rat model of dementia with Lewy bodies by using MEMRI
- 10:30    *Tamara G. Amstislavskaya, V.M. Belichenko, A.S. Ryzhkova, Y.J. Ho, M.A. Tikhonova.* Effects of ceftriaxone on cognitive and neuro-molecular disturbances in a mouse genetic model of Parkinson's disease
- 11:00    *Coffee break*
- 11:20    *T.Y. Renn, L.Y. Chen, Y.C. Liu, F.D. Mai, Y.J. Ho, Hung-Ming Chang.* An Innovative strategy to rescue the hippocampal bioenergetics in a rat model of Parkinson's disease: utilizing plasmon-activated water as a natural approach
- 11:50    *Tatiana A. Korolenko, A.B. Pupyshev, M.A. Tikhonova.* Possibilities and limitations of autophagy modulation in correction of neurodegeneration
- 12:20    *Discussion*
- 12:30    *Lunch break*
- 13:30–15:50**    **Co-chairs – Dr. Maria A. Tikhonova, Ph.D.; Professor Yi-Ling Yang, Ph.D.**
- 13:30    *K.T. Lu, P.Y.Y. Wo, H.Y. Liu, Yi-Ling Yang.* Hesperidin protects rats from A $\beta$ -induced neurotoxicity by the reduction of lipid peroxidation, and expression of heme oxygenase and iNOS.
- 14:00    *Maria A. Tikhonova, V.M. Belichenko, N.D. Belyaev, T.G. Amstislavskaya.* Modulation of the gene expression levels of enzymes involved into the metabolism of A $\beta$  in the brain for neuroprotection
- 14:30    *Coffee break*
- 14:50    *Hsin-Hua Li, F.J. Lu, P.Y. Chiu, Y.J. Ho, T.J. Lai, C.L. Lin.* Overexpression of nanog attenuates A $\beta$ -induced neurotoxicity through Insulin Signaling
- 15:20    *Chih-Li Lin, H.H. Li, H.G. Kim, C.C. Chang, P.Y. Chiu, Y.J. Ho, T.J. Lai.* Coexpression of Oct4, Sox2, Klf4 and Nanog (KOSN) transcription factors protects against amyloid  $\beta$ -induced neurotoxicity by improving insulin signaling sensitivity
- 15:50–16:10    **CLOSING CEREMONY**

# Wednesday, 9 August

## Satellite symposium “Molecular Genetic Mechanisms of the Pathogenesis of Glaucoma”

Venue of the conference – Federal Research Center Institute of Cytology and Genetics of the Siberian Branch of the Russian Academy of Sciences (ICG SB RAS)

Co-chairs – d.m.sc., professor N.A. Konovalova, d.b.sc., professor I.N. Lavrik, c.b.sc., associate professor V.A. Ivanisenko

- 10.00 **Greeting:** N.A. Konovalova, I.N. Lavrik, V.A. Ivanisenko
- 10.15 N.A. Konovalova. Comorbidity in primary open-angle glaucoma from the view of an ophthalmologist
- 10.45 A.A. Ryabtseva. Features of the morphometric characteristics of the optic nerve in primary glaucoma in combination with myopia
- 11.15 O.S. Konovalova. Clinical and statistical characteristics of primary open-angle glaucoma in the Tyumen region
- 11.45 *Coffee break*
- 12.00 I.N. Lavrik. Construction of drugs targeting apoptosis network in glaucoma and other diseases
- 12.30 V.A. Ivanisenko. ANDSystem: an internet-accessible tool for automated literature mining in the area of biology and biomedicine
- 13:00 *Break*
- 14.00 E.O. Datskih. Surgical aspects of pseudoexfoliation glaucoma against the background of concomitant somatic pathology
- 14.20 D.E. Ivanoshchuk. Polymorphism of LOXL1 gene in West Siberia patients with open-angle glaucoma
- 14.40 O.V. Saik. Molecular associome of Primary Open-Angle Glaucoma reconstructed by ANDSystem
- 15.00 E.S. Tiys. Search for genes responsible for the comorbidity of primary open-angle glaucoma and diabetic retinopathy, using structural analysis of gene networks
- 15.20 N.V. Ivanisenko. Virtual scrining of small molecules inhibitors of programmed cell death activation
- 15.40–  
16:00 N.A. Alemasov. Mechanisms of the effect of mutations in the SOD1 protein on the stability of its structure, represented as a graph of intramolecular hydrogen bonds