



International conference  
**CHROMOSOME 2012**

Novosibirsk  
September 2 - 7, 2012

## Program

**September 2, Sunday**

**The House of Scientists, Akademgorodok**

16:00 – 18:00	<b>Conference participants registration,</b> Small Hall
18:00 – 22:00	<b>Welcome party,</b> Restaurant of the House of Scientists <b>Reception of conference participants</b>

**September 3, Monday**

**The House of Scientists, Akademgorodok**

9:00 – 09:40	<b>Conference participants registration</b>
9:40 – 09:50	<b>Conference opening, Small Hall</b> <i>Full members of RAS Igor F. Zhimulev,</i> <i>Prof. Alexander S. Grafodatsky</i>

## Section I

Evolution and comparative analysis of genomes and chromosomes.

Small Hall, The House of Scientists

*Co-chairmen:*

*Dr. Georgy V. Shpakovski and Dr. Vladimir A. Trifonov*

09:50 – 10:00	<b>Prof. Alexander S. Grafodatsky</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> From chromosomes to genomes and back again
10:00 – 10:40	<b>Prof. Stephen J.O'Brien</b> <i>Theodosius Dobzhansky Center for Genome Informatics, St. Petersburg State University, Saint-Petersburg, Russia</i> <i>National Cancer Institute, Frederick, USA</i> A moving landscape of comparative genomics in mammals
10:40 – 11:00	<b>Dr. Georgy V. Shpakovski</b> <i>Shemyakin and Ovchinnikov Institute of Bioorganic Chemistry of RAS, Moscow, Russia</i> New complexes of gene expression and their role in the appearance and evolution of the genus Homo
11:00 – 11:20	<b>Prof. Roscoe Stanyon</b> <i>University of Florence, Florence, Italy</i> A comprehensive FISH analysis of chromosome rearrangements in 4 genera of gibbons
11:20 – 11:40	<b>Coffee break</b> , Foyer of Small Hall
11:40 – 12:00	<b>Dr. Nadezda V. Kosyakova</b> <i>Institute of Human Genetics, Jena, Germany</i> Multicolor banding of mouse chromosomes
12:00 – 12:20	<b>Dr. Vladimir A. Trifonov</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Chromosome evolution of reptiles

12:20 – 12:40	<b>Dr. Irina Y. Bakloushinskaya</b> <i>Koltsov Institute of Developmental Biology of RAS, Moscow, Russia</i> Amazing sex determination in mole-voles Ellobius and possibilities of life without Y-chromosome
12:40 – 13:00	<b>Prof. Vladimir N. Stegny</b> <i>Tomsk State University, Tomsk, Russia</i> Macroevolutionary reorganization of the genetic system of eukaryotes. Parameters of evolutionary labile and evolutionary conservative species genome
13:00 – 13:10	<b>Dr. Nadezda Koroban</b> <i>Application specialist, Roche Diagnostics Rus LLC</i> Modern approach to evolutionary and genomic research: 454 next generation sequencing
13:10 – 14:00	<b>Lunch</b> , Restaurant of the House of Scientists

### Section I

Evolution and comparative analysis of genomes and  
chromosomes.

Small Hall, The House of Scientists

*Co-chairmen:*

*Prof. Vladimir N. Stegny and Dr. Svetlana A. Romanenko*

14:00 – 14:20	<b>Dr. Svetlana A. Romanenko</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Chromosomal evolution in Rodentia
14:20 – 14:35	<b>Dr. Anastasia I. Kulemzina</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Ruminantia ancestral karyotype
14:35 – 14:50	<b>Dr. Larisa S. Biltueva</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Chromosome evolution in Eulipotyphla

14:50 – 15:05	<b>Dr. Violetta R. Beklemisheva</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Molecular cytogenetics of family Viverridae
15:05 – 15:20	<b>Coffee break</b> , Foyer of Small Hall
15:20 – 15:40	<b>Dr. Igor V. Sharakhov</b> <i>Virginia Tech, Blacksburg, USA</i> A new chromosomal phylogeny supports the repeated origin of vectorial capacity in malaria mosquitoes of the <i>Anopheles gambiae</i> complex
15:40 – 16:00	<b>Dr. Svetlana V. Pavlova</b> <i>A.N. Severtsov Institute of Ecology and Evolution of RAS, Moscow, Russia</i> Can chromosomal hybrid zones promote speciation in the common shrew <i>Sorex araneus</i> : what does the study of meiosis?
16:00 – 16:15	<b>Dr. Nina Sh. Bulatova</b> <i>A.N. Severtsov Institute of Ecology and Evolution of RAS, Moscow, Russia</i> Karyology of the Linnean species
16:15 – 16:30	<b>Dr. Irina V. Kartavtseva</b> <i>Institute of Biology and Soil Science of FEB RAS, Vladivostok, Russia</i> Chromosomal variability of mammals from the Russian Far East Chromosomes and speciation of gerbils (Rodentia, Cricetidae, Gerbillinae) from the Palaearctic
16:30 – 16:45	<b>Dr. Elena A. Salina</b> <i>Institute of cytology and genetics of SB RAS, Novosibirsk, Russia</i> Structural organization of B genome chromosomes and allopolyploid wheat evolution

16:45 – 17:00	<b>Dr. Elena K. Khlestkina</b> <i>Institute of cytology and genetics of SB RAS,  Novosibirsk, Russia</i> Evolution of duplicated genes: case study in Triticeae
17:00 – 17:15	<b>Dr. Galina V. Roslik</b> <i>Institute of Biology and Soil Science of FEB RAS,  Vladivostok, Russia</i> B chromosomes of the Korean field mouse Apodemus peninsulae (Rodentia) from The Far East: variability, mosaicism and morphotypes
17:15 – 17:55	<b>Dr. Victor N. Orlov</b> <i>A.N. Severtsov Institute of Ecology and Evolution of  RAS, Moscow, Russia</i> The deviation from the Hardy-Weinberg ratio in hybrid zones of the common shrew Sorex araneus (Mammalia)
17:55 – 18:15	<b>Dr. Alexander Thomas Joshua Cagan</b> <i>Max Planck Institute for Evolutionary  Anthropology, Leipzig, Germany</i> Towards the genetic basis of behaviour in selected rat lines: Signatures of positive selection as a proxy for functionally relevant loci

**September 4, Tuesday**  
**The House of Scientists, Akademgorodok**

9:00 – 9:30	<b>Poster session</b> , The foyer of Small Hall
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**Section II**

Chromosomes and human genome. Chromosome pathologies.

Small Hall, The House of Scientists

*Co-chairmen:*

*Prof. Yuri F. Bogdanov and Dr. Nikolai N. Kolesnikov*

9:30 – 10:10	<b>Prof. Evgeniy D. Sverdlov</b> <i>Institute of molecular genetics of RAS, Moscow, Russia</i> Approaches to cancer gene surgery
10:10 – 10:40	<b>Prof. Thomas Liehr</b> <i>Institute of Human Genetics, Jena, Germany</i> Small supernumerary marker chromosomes
10:40 – 11:00	<b>Dr. Nikolai N. Kolesnikov</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Cancer, micro RNA and evolution
11:00-11:15	<b>Coffee break</b> , Foyer of Small Hall
11:15 – 11:45	<b>Dr. Alla Lapidus</b> <i>Fox Chase Cancer Center, Philadelphia, USA</i> Genomics and cancer a moving landscape
11:45 – 12:00	<b>Dr. Nikolay A. Skryabin</b> <i>Research Institute of Medical Genetics of SB RAMS, Tomsk, Russia</i> Multiple chromosomal aberrations in blood vessels with atherosclerotic changes

12:00 – 12:15	<b>Dr. Alexey V. Pindyurin</b> <i>Netherlands Cancer Institute, Amsterdam, Netherlands</i> A barcode based multiplex transgene system to study the chromatin microenvironment
12:15 – 12:30	<b>Dr. Anna A. Kashevarova</b> <i>Research Institute of Medical Genetics of SB RAMS, Tomsk, Russia</i> Copy number variation (CNV) in the genome of patients with idiopathic mental retardation
12:30 – 12:45	<b>Dr. Evgeniya M. Sukhodolskaya</b> <i>Institute of gene biology of RAS, Moscow, Russia</i> The study of correlation between allelic variants of the serotonergic system genes and various forms of aggressive behavior in Hadza and Datoga men
12:45 – 13:00	<b>Dr. Tatyana A. Gayner</b> <i>Center of New Medical Technologies in Akademgorodok, Novosibirsk, Russia</i> Cytogenetic laboratory of the Center of New Medical Technologies: results of the work and prospects of development
13:00 – 14:00	<b>Lunch</b> , Restaurant of the House of Scientists

## Section I

Evolution and comparative analysis of genomes and chromosomes.

Small Hall, The House of Scientists

*Co-chairmen:*

*Prof. Alexander V. Rodionov and Dr. Irina Y. Bakloushinskaya*

14:00 – 14:20	<b>Dr. Vladimir A. Lukhtanov</b> <i>Zoological Institute of RAS, Saint-Petersburg, Russia</i> Chromosomes and hybrid speciation in insects
14:20 – 14:40	<b>Prof. Alexander V. Rodionov</b> <i>Komarov Botanical Institute of RAS, Saint-Petersburg, Russia</i> On the grass karyotypes evolution
14:40 – 14:55	<b>Dr. Veronica V. Golygina</b> <b>Dr. Larisa I. Gunderina</b> <i>Institute of cytology and genetics of SB RAS, Novosibirsk, Russia</i> Evolution of the chromosomal organization of ribosomal RNA gene family (rRNA) in the tribe Chironomini
14:55 – 15:10	<b>Dr. Tatiana E. Samatadze</b> <i>Engelhardt Institute of Molecular Biology of RAS, Moscow, Russia</i> Molecular cytogenetic study of medicinal plants
15:10 – 15:25	<b>Coffee break</b> , Foyer of Small Hall
15:25 – 15:40	<b>Dr. Vladimir E. Gokhman</b> <i>Botanical Garden of Moscow State University, Moscow, Russia</i> Role of the traditional and new techniques in the chromosomal study of parasitic Hymenoptera



15:40 – 15:50	<b>Dr. Maria S. Rautian</b> <i>Biological Institute of Saint-Petersburg State University, Saint-Petersburg, Russia</i> Speciation in Climates as a consequence of genome rearrangement mechanism
15:50 – 16:10	<b>Dr. Sergei V. Kirilchik</b> <i>Limnological Institute of SB RAS, Irkutsk, Russia</i> Mysteries of the mitochondrial cytochrome b gene evolution of Baikal oilfishes
16:10 – 16:30	<b>Dr. Aleksandr G. Bugrov</b> <i>Institute of Systematics and Ecology of Animals of SB RAS</i> Pamphagidae grasshoppers is a model of the Y-chromosome evolution in the formation de novo XX/XY sex determination from the initial XX/XO
16:30 – 16:50	<b>Prof. Ludmila V. Vysotskaya</b> <i>Novosibirsk State University, Novosibirsk, Russia</i> The size of chromosomes and their recombination property
16:50- 17:05	<b>Dr. Elena I. Mikhailova</b> <i>St. Petersburg Branch of N.Vavilov Institute of General Genetics of RAS, Saint-Petersburg, Russia</i> Molecular-cytogenetic analysis of prerequisites for regular chromosome segregation in meiosis of rye <i>Secale cereale</i> L.
17:05- 17:25	<b>Dr. Maria V. Sharakhova</b> <i>Virginia Tech, Blacksburg, USA</i> New approaches for chromosome mapping of mosquito genomes
17:25- 17:35	<b>Dr. Leonid S. Adonin</b> <i>Institute of cytology of RAS, Saint-Petersburg, Russia</i> Karyological analysis of <i>Aurelia aurita</i> from the White Sea and its cryptic species ( <i>Aurelia</i> sp1) from the Japan Sea

17:35 - 17:45	<b>Dr. Alisa O. Vershinina</b> <i>Zoological Institute of RAS, Saint-Petersburg, Russia</i> Dynamics of karyotype evolution in the <i>Agrodiaetus phyllis</i> species complex (Lepidoptera: Lycaenidae)
17:45 - 17:55	<b>Dr. Alina A. Kokhanenko</b> <i>Tomsk State University, Tomsk, Russia</i> The changes in chromosome 6 spatial organization in the <i>Calliphora erythrocephala</i> Mg. (Diptera: Calliphoridae) nurse cells and salivary glands cells

**September 5, Wednesday**

**The House of Scientists, Akademgorodok**

9:00 – 9:30	<b>Poster session</b> , The foyer of Small Hall
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### **Section III**

Interphase chromosomes and drosophila chromatin.

Small Hall, The House of Scientists

*Co-chairmen:*

*Dr. Sergei A. Demakov and Dr. Aleksandr Yu. Konev*

9:30 – 10:10	<b>Prof. Terry L. Orr-Weaver</b> <i>Whitehead Institute, MIT, Cambridge, USA</i> Regulation of replication origin firing and fork progression
10:10 – 10:40	<b>Prof. Igor F. Zhimulev</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Chromosomal organization of <i>Drosophila</i> genome
10:40 – 11:05	<b>Dr. Tatiana D. Kolesnikova</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Late replicating regions in polytene chromosomes

11:05 – 11:25	<b>Coffee break</b> , Foyer of Small Hall
11:25 – 11:45	<b>Dr. Evgenia N. Andreeva</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Proteins of the “black chromatin” in ovaries and early embryogenesis of <i>Drosophila</i>
11:45 – 12:05	<b>Dr. Stepan N. Belyakin</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Regulation of repressed regions of <i>Drosophila</i> genome in development
12:05 – 12:25	<b>Dr. Dmitry E. Koryakov</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Induced transcription of intercalary heterohromatin region in <i>Drosophila</i> polytene chromosomes
12:25 – 12:40	<b>Dr. Sergei A. Demakov</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Modeling of polytene chromosome bands and interbands in <i>Drosophila</i>
12:40 – 13:00	<b>Dr. Igor S. Shapovalov</b> <i>Institute of gene biology of RAS, Moscow, Russia</i> Effects of Chromator's different domains deletion on viability of <i>Drosophila melanogaster</i>
13:00 – 13:10	<b>Dr. Irina Nabatchikova</b> <i>Bio-Rad, Moscow, Russia</i> Multiple applications of Bio-Rad for Genomics
13:10 – 14:00	<b>Lunch</b> , Restaurant of the House of Scientists

### Section III

Interphase chromosomes and drosophila chromatin.

Small Hall, The House of Scientists

Co-chairmen:

*Dr. Dmitry E. Koryakov and Dr. Tatiana D. Kolesnikova*

14:00 – 14:20	<b>Dr. Alexei N. Krasnov</b> <i>Institute of gene biology of RAS, Moscow, Russia</i> Role of insulator protein Su(Hw) in the positioning of replication origins
14:20 – 14:40	<b>Dr. Daria V. Kopytova</b> <i>Institute of gene biology of RAS, Moscow, Russia</i> Studying the role of the component of SAGA Sgf11 in transcription and mRNA transport
14:40 – 15:00	<b>Dr. Nadezhda E. Vorobyeva</b> <i>Institute of gene biology of RAS, Moscow, Russia</i> SAYP and Brahma complex are important for "repressive" and "transient" Pol II pausing
15:00 – 15:20	<b>Dr. Vladimir N. Babenko</b> <i>Institute of cytology and genetics of SB RAS, Novosibirsk, Russia</i> Where ends meet: neighbor gene orientation and intergenic chromatin
15:20 – 15:35	<b>Coffee break</b> , Foyer of Small Hall
15:35 – 15:50	<b>Dr. Lyudmila P. Zakharenko</b> <i>Institute of cytology and genetics of SB RAS, Novosibirsk, Russia</i> Intraspecific Drosophila melanogaster hybrid dysgenesis and its connection with mobility of transposable elements
15:50 – 16:10	<b>Dr. Aleksandr Yu. Konev</b> <i>B.P. Konstantinov Petersburg Nuclear Physics Institute of RAS, Saint-Petersburg, Russia</i> The study of ATP-dependent chromatin assembly and remodeling factors in Drosophila

16:10 – 16:30	<b>Dr. Omar L. Kantidze</b> <i>Institute of gene biology of RAS, Moscow, Russia</i> The role of histone gammaH2AX in cell stress response
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**September 6, Thursday**

**The House of Scientists, Akademgorodok**

9:00 – 9:30	<b>Poster session</b> , The foyer of Small Hall
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### **Section IV**

Heterochromatin. Specialized structures of chromosomes. Sex and the meiotic chromosomes. Cellular division.

Small Hall, The House of Scientists

*Co-chairmen:*

*Dr. Aleksandr V. Vershinin and Dr. Natalia S. Zhdanova*

9:30 – 10:00	<b>Prof. Maurizio Gatti</b> <i>Dept. of Biology and Biotechnology. Sapienza, University of Rome, Italy</i> Organization and evolution of Drosophila telomeres
10:00 – 10:20	<b>Dr. Natalya S. Zhdanova</b> <i>Institute of cytology and genetics of SB RAS, Novosibirsk, Russia</i> Can telomerase and ALT coexist in normal mammalian cells?
10:20 – 10:35	<b>Dr. Elena V. Evtushenko</b> <i>Institute of molecular and cellular biology of SB RAS, Novosibirsk, Russia</i> Genomics and nucleosome arrangement of the rye syb telomeres
10:35 – 10:45	<b>Dr. Anastasia G. Koroleva</b> <i>Limnological Institute of SB RAS, Irkutsk, Russia</i> The dynamics of the length of telomeric DNA from Baikal flat worms and mollusks

10:45 – 11:00	<b>Dr. Victor G. Levitsky</b> <b>Dr. Aleksandr V. Vershinin</b> <i>Institute of cytology and genetics of SB RAS,  Novosibirsk, Russia</i> <i>Institute of molecular and cellular biology of SB  RAS, Novosibirsk, Russia</i> The role of the length of monomer and nucleotide context for the formation of landing sites in nucleosome tandem repeats of plants
11:00 – 11:15	<b>Dr. Julia M. Minina</b> <i>Institute of cytology and genetics of SB RAS,  Novosibirsk, Russia</i> The structure of discontinuous telomeres in Iberian shrew fibroblasts
11:15 – 11:30	<b>Coffee break</b> , Foyer of Small Hall
11:30 – 11:55	<b>Dr. Giovanni Cenci</b> <i>Department of Basic and Applied Biology,  University of L'Aquila, Italy</i> New roles of HP1 in Drosophila chromosome segregation
11:55 – 12:25	<b>Prof. Margarete Heck</b> <i>University of Edinburgh, Great Britain</i> Using Drosophila genetics to understand Invadolysin's role in chromosome structure
12:25 – 12:35	<b>Dr. Leonid V. Omelyanchuk</b> <i>Institute of molecular and cellular biology of SB  RAS, Novosibirsk, Russia</i> Cell cycle in tumor suppressors
12:35 – 12:50	<b>Prof. Yuri F. Bogdanov</b> <i>Vavilov Institute of General Genetics of RAS,  Moscow, Russia</i> Architecture of meiotic chromosome and its relation to the chromosome function

12:50 – 13:00	<b>Dr. Victor E. Spangenberg</b> <i>Vavilov Institute of General Genetics of RAS, Moscow, Russia</i> Morphological manifestation of a unique DNA segments in human meiotic prophase I
13:00 – 13:10	<b>Dr. Valery L. Chubykin</b> <i>Vavilov Institute of General Genetics of RAS, Moscow, Russia</i> Paranemic helix chromatids in meiosis: helix without swirling
13:10 – 13:20	<b>Dr. Elena V. Kiseleva</b> <i>Institute of cytology and genetics of SB RAS, Novosibirsk, Russia</i> Inverted heterochromatin location - a new light on the nuclear organization
13:20 – 14:00	<b>Lunch</b> , Restaurant of the House of Scientists

#### Section IV

Heterochromatin. Specialized structures of chromosomes. Sex  
and the meiotic chromosomes. Cellular division.

Small Hall, The House of Scientists

*Co-chairmen:*

*Dr. Leonid V. Omelyanchuk and Dr. Vladimir A. Kokoza*

14:00 – 14:15	<b>Dr. Alla V. Krasikova</b> <i>St. Petersburg State University, Saint-Petersburg, Russia</i> Three-dimensional genome organization in nuclei of avian and amphibian growing oocytes and somatic cells
14:15 – 14:30	<b>Prof. Mikhail V. Glazkov</b> <i>Koltzov Institute of Developmental Biology of RAS, Moscow, Russia</i> Structural and functional domains of interphase chromosomes

14:30 – 14:45	<b>Dr. Gleb N. Artemov</b> <i>Tomsk State University, Tomsk, Russia</i> Nuclear envelope attachment regions in malaria mosquitoes <i>Anopheles</i>
14:45 – 15:00	<b>Dr. Yuri Y. Shevelyov</b> <i>Institute of molecular genetics of RAS, Moscow, Russia</i> Effect of activator binding and enhanced histone acetylation on the locus position relative to nuclear periphery
15:00 – 15:15	<b>Dr. Vladimir A. Kokoza</b> <i>University of California, Riverside, USA</i> Molecular biology of mosquito vitellogenesis: from basic studies to genetic engineering of antipathogen immunity
15:15 – 15:30	<b>Coffee break</b> , Foyer of Small Hall
15:30 – 15:45	<b>Dr. Irina S. Zakharova</b> <i>Institute of cytology and genetics of SB RAS, Novosibirsk, Russia</i> Epigenetic status of X-chromosome in human pluripotent cell lines
15:45 – 16:00	<b>Dr. Eugenia A. Vaskova</b> <i>Institute of cytology and genetics of SB RAS, Novosibirsk, Russia</i> Modifications of inactiv chromatin by different forms of X-chromosome silencing in rodents
16:00 – 16:15	<b>Dr. Alexey A. Gavrillov</b> <i>Institute of gene biology of RAS, Moscow, Russia</i> 3c Method revisited: ligation in nucleus and not in solution



16:15 – 16:30	<b>Dr. Ruslan S. Ivanov</b> <i>Institute of biology of Ufa research centre RAS,  Ufa, Russia</i> Spatial-temporal localization of ARG-X protease sensitivities sites in suprastructures of cell nucleus of induced to growth germs of wheat
16:30 – 16:45	<b>Dr. Mikhail A. Sorokin</b> <i>Institute of cytology and genetics of SB RAS,  Novosibirsk, Russia</i> Nanog transcriptional regulation in vole and mouse
16:45 – 17:00	<b>Dr. Yuri M. Konstantinov</b> <i>Siberian Institute of Plant Physiology and  Biochemistry of SB RAS, Irkutsk, Russia</i> Horizontal gene transfer in plant mitochondria in organello and in vivo
17:00 – 17:15	<b>Conference concluding remarks</b> <i>Prof. Igor F. Zhimulev,  Prof. Alexander S. Grafodatsky</i>
18:00	<b>Farewell party,</b> Restaurant of the House of Scientists