



II International reproductive genetics winter school

(www.humangenetics.ru)

Preliminary programme

Main building, big hall of the Federal state budget institution “National medical research center for obstetrics, gynecology and perinatology named after academician V.I.Kulakov” of the Ministry of healthcare of Russian Federation
4, Akademika Oparina Street, Moscow

12th of December 2018, Wednesday

9.30 – 10.00 registration

Opening ceremony

10.00 – 11.00

10.00 – 10.20 Welcoming speech

Gennadiy Sukhikh,
Professor, Academician of the Russian Academy of Sciences
Director of the National medical research center for
obstetrics, gynecology and perinatology named after
academician V.I.Kulakov

10.20 – 10.40	Welcoming speech	N.N., Department of Science, German Embassy in Moscow
10.40 – 11.00	Welcoming speech	Dr. Andreas Hoeschen, Director of German Centre for Research and Innovation (DWIH) in Moscow

Podium discussion

“The past, the present and the future of genomic research in medicine”

Finishing the euchromatic sequencing of the human genome is now 15 years old and now it is recognized that the Human Genome Project (HGP) ushered a new – postgenomic – era in biomedical research. The HGP initiated a new approach for scientific activity: fostered collaborations between diverse international and/or interdisciplinary research groups and changed the norms around data sharing. The postgenomic approach accelerated transition to new scientific paradigm – from hypothesis-driven research to generation and analysis of vast data sets and changed our understanding of human disease.

However new way of pursuing science projects is throwing up new challenges. They are:

- Optimization of resources assigned for genetic research and infrastructure;
- Access to genetic knowledge and information;
- Implementation of genetics-based diagnostic methods in clinical practice;
- Education in genetics of healthcare providers;
- The protection of privacy of clinical research participants.
- Political, economic, societal or psychological barriers for international genetic research collaboration;

- Potentialities of Russian-German research collaboration to overcome the barriers.

Participants

Denis Rebrikov, doctor of biological science, vice-rector of the Pirogov Russian National Research Medical University (RNRMU), head of the laboratory for the genome editing of the Kulakov National medical research center for obstetrics, gynecology and perinatology;

Vsevolod Kiselev, doctor of biological science, corresponding member of the Russian Academy of Sciences (RAS), professor, deputy Director of the Research Institute for the oncogynecology and mammology of the Kulakov National medical research center for obstetrics, gynecology and perinatology;

Prof. Dr. Bjoern Schumacher, Institute for Genome Stability in Ageing and Disease, Medical Faculty, University of Cologne, Germany;

Dr. Gabi Kastenmüller, Director of Institute of Bioinformatics and Systems Biology, Helmholtz Zentrum München

Prof. Gudrun Rappold, Chair of Department of Human Molecular Genetics, University of Heidelberg

Dr. Alexander Kel, geneXplain GmbH;

Session “Genomic instability in somatic and generative cells”

Plenary lecture	Dr. Alexander Kel, geneXplain GmbH	Regulation of transcription factors of reproduction
Plenary lecture	Prof. Dr. Bjoern Schumacher, Institute for Genome Stability in Ageing and Disease, Cologne Excellence Cluster for	Genome Instability in somatic and reproductive aging: Insights from model system genetics and omics approaches

Cellular Stress Responses in Ageing-
Associated Diseases (CECAD) and Systems
Biology of Ageing Cologne, University of
Cologne

Plenary lecture	Gudrun Rappold, Professor and Chair of Department of Human Molecular Genetics, University of Heidelberg	Regulation by transcription factors, genetic pathways for height and short stature
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Session “Methods of data analysis in human genetics”

Plenary lecture Dr. Gabi Kastenmüller, Director (acting)
Institute of Bioinformatics and Systems
Biology, Helmholtz Zentrum Muenchen

Plenary lecture	Vladimir Naumov, researcher of the laboratory for bioinformatics of the Kulakov National medical research center for obstetrics, gynecology and perinatology	Promising methods for data analysis in human genetics: theory and practice
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Plenary lecture	Darja Stelmashenko, Company “Biosoft”	Genome Enhancer: The first steps of artificial intelligence in finding targets for drugs
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Session “Reproductive epigenetics”

Plenary
lecture

Vsevolod Kiselev, doctor of biological science, corresponding member of the Russian Academy of Sciences (RAS), professor, deputy Director of the Research Institute for the oncogynecology and mammology of the Kulakov National medical research center for obstetrics, gynecology and perinatology

Epigenetic aspects of infertility caused by the chronic endometritis

Welcome reception

13th of December, 2018, Thursday

Session “Preimplantation genetic diagnosis”

Plenary
lecture

Natalya Makarova, candidate of biological science, senior researcher of the department for the assisted reproduction technologies of the

Embryologic phase of preimplantation genetic diagnosis: human embryo biopsy. Video translation from embryological laboratory.

	Kulakov National medical research center for obstetrics, gynecology and perinatology	
Plenary lecture	Alexey Ekimov, researcher of the department of human genetics of the Kulakov National medical research center for obstetrics, gynecology and perinatology	Preimplantation genetic screening using array-based CGH and NGS methods

Session “Medical genetic counseling and prenatal diagnosis”

Plenary lecture	Vjacheslab Chernich, doctor of medical science, head of laboratory for reproductive genetics of the Research center of medical genetics	Reproductive genetic disorders and their diagnosis
Oral presentation	Nadezhda Zaretskaya, candidate of medical science, senior researcher of the department of human genetics of the Kulakov National medical research center for obstetrics, gynecology and perinatology	Medical genetic counseling and prenatal diagnosis in twin pregnancy
Oral presentation	Liliana Chugunova, candidate of medical science, researcher of the department of ultrasound diagnosis of the Kulakov National medical research center for obstetrics, gynecology and perinatology	Syndromic approach for the ultrasound diagnosis of congenital fetal abnormalities

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| Oral presentation | Nataliya Andronova, candidate of medical science, researcher of the department of human genetics of the Kulakov National medical research center for obstetrics, gynecology and perinatology | Chromosomal placental mosaicism as a risk factor for preeclampsia and fetal growth retardation |
| Oral presentation | Olga Buyanovskaya, candidate of medical science, geneticist of the department of human genetics of the Kulakov National medical research center for obstetrics, gynecology and perinatology | Medical genetic counseling in BRCA1,2 carriers |
| Oral presentation | Olga Stupko, geneticist of the department of human genetics of the Kulakov National medical research center for obstetrics, gynecology and perinatology | Cytogenetic diagnosis of balanced structural chromosomal rearrangements |

Session «Hereditary diseases in children: the role of genomic analysis methods in diagnosis verification»

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| Plenary lecture | Victoria Voinova, doctor of medical science, leading researcher of the department of human genetics of the Veltischev Research and Clinical Institute for Pediatrics of the Pirogov Russian National Research Medical University | Monogenic diseases in children: from genomic analysis to individual prognosis and targeted therapy |
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Plenary lecture Anna Degtyareva, doctor of medical science, head of clinical work of the department of the neonatology and pediatrics of the Kulakov National medical research center for obstetrics, gynecology and perinatology New approaches to the diagnosis of the Niemann-Pick disease type C.

III day

14th of December, 2018, Friday

Session “Genetics of mesenchymal stromal stem cells (MSSCs) and stem cells’ therapy’s safety”

Plenary lecture Denis Rebrikov, doctor of biological science, head of the laboratory for the genome editing of the Kulakov National medical research center for obstetrics, gynecology and perinatology Human genome editing: prospects of implementation in clinical practice

Plenary lecture Timur Fathudinov, doctor of medical science, head of the laboratory for the regenerative medicine of the Kulakov National medical research center for obstetrics, gynecology and perinatology Genetics of mesenchymal stromal stem cells and stem cells’ therapy’s safety

Oral presentation	Irina Arutyunyan, candidate of biological science, researcher of the laboratory for the regenerative medicine of the Kulakov National medical research center for obstetrics, gynecology and perinatology	Impact of cryopreservation protocol of human umbilical cord and expansion of umbilical cord-derived MSSCs on genetic stability of cell culture.
Oral presentation	Denis Silachev, candidate of biological science, head of the laboratory for the stem cells' technologies of the Kulakov National medical research center for obstetrics, gynecology and perinatology	Stem cells' technologies in human reproduction: from laboratory in clinical practice

Session “Genetics of male infertility”

Plenary lecture	Safar Gamidov, doctor of medical science, professor, head of department for andrology of the Kulakov National medical research center for obstetrics, gynecology and perinatology	Genetic aspects of male infertility
Oral presentation	Ruslan Ovchinnikov, candidate of medical science, head of clinical work of the department for andrology of the Kulakov National medical research center for obstetrics, gynecology and perinatology	Variants of normal karyotype and reproductive disorders in males

Oral presentation Ekaterina Simonenko, candidate of biological science, Lomonosov Moscow state university Impact of temperature regimen on integrity of DNA of human spermatozoa

Closing ceremony

Summing up the results of the School. Presentation of certificates of participation