

Deutsches Wissenschafts- und  
Innovationshaus – Moskau



Deutschland  
Land der Ideen

**Skoltech**  
Skolkovo Institute of Science and Technology

# The Seventh German-Russian Week of the Young Researcher

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## “Computational Biology and Biomedicine”

**Skolkovo Institute of Science and Technology**

**September 11–14, 2017**

**DAAD**

Deutscher Akademischer Austausch Dienst  
German Academic Exchange Service

**DFG**

Deutsche  
Forschungsgemeinschaft

**Conference Hotel**

Radisson Slavyanskaya Hotel & Business Center

Europe Square 2,  
121059, Moscow, Russia

**Conference Location**

Skolkovo Institute of Science and Technology (Skoltech)

Nobel str 3, Innovation Center Skolkovo,  
143026, Moscow, Russia

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Federal Foreign Office



# Welcome to the “7th German-Russian Week of the Young Researcher”!

Dear participants and colleagues from Russia and Germany,

We are very delighted to welcome you all to the Seventh Week of the Young Researcher! When we convened the “German-Russian Year of Science“, six years ago, the idea was born to invite young researchers from both countries to come together to discuss current topics of mutual interest. The success of the first week in Kazan encouraged us to turn it into an annual event. The following years we met in Ekaterinburg (2012), Novosibirsk (2013), St. Petersburg (2014) and Moscow (2015, 2016). The main goal of these meetings is to foster collaboration among young scientists and researchers who will be setting the agenda of scientific cooperation between Russia and Germany in the near future.

Research organizations and institutions of higher education of both our countries will be presenting their funding programmes and describing the platforms that they can offer to both Russian and German PhD students as well as PostDoctoral researchers. The overarching principle behind these presentations is to facilitate collaboration and to broaden research networks. The week will illustrate how young and experienced scientists can work across borders with local authorities, associations and industry in order to develop new approaches to global challenges.

Together we will take an interdisciplinary approach and discuss various facets of the still growing field of computational biology and biomedicine. By now, almost every field in biology and medicine flourishes with the help of computational data analysis since the first attempt to apply algorithms for the interpretation of biological sequences such as proteins and genomes. Information and communication technologies enable the exploration of huge data spaces generated by various experimental –omics technologies. Computational biology has evolved as a discipline reaching beyond the investigation of individual parts of the cell using concepts borrowed from computer science such as networks and systems biology models.

This years' host location is the Skolkovo Institute of Science and Technology (Skoltech). Founded in 2011, Skoltech is an international graduate research university near Moscow that aims at educating students, advancing knowledge, and fostering innovation in order to address critical scientific, technological, and global challenges. We thank all of you, the participants, for your involvement and cooperation in this conference.

Dr. Peter Hiller



German Academic Exchange Service  
Head of DAAD Office Moscow  
Managing Director of DWIH Moscow

Prof Rupert Gerzer



Skolkovo Institute  
of Science and Technology  
Provost

Dr Wilma Rethage



Deutsche  
Forschungsgemeinschaft  
Head of DFG Office Russia/CIS

## September 11, Monday

*Arrival of Participants, Transfer to the Hotel, Check-in*

19:00	<b>Welcome Party</b> <b>Words of Welcome</b> to the participants of the week by <ul style="list-style-type: none"><li>• Dr Peter Hiller, DWIH/DAAD Moscow</li><li>• Dr Wilma Rethage, DFG Russia/CIS</li><li>• Professor Dr Rupert Gerzer, Skoltech</li></ul> & Introduction of the participants	by invitation Radisson Slavyanskaya Hotel, Tolstoy Hall
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## September 12, Tuesday

09:00	<i>Transfer from the Hotel to Skoltech</i>	by bus
10:00	Registration of Participants	Skoltech – Cohort
10:30	<b>OFFICIAL OPENING OF THE WEEK</b> <b>Welcome addresses by</b> <ul style="list-style-type: none"><li>• Professor Dr Aleksandr Kuleshov, President of Skoltech</li><li>• <b>Thomas Graf</b>, Head of the Department for Economy and Science, Embassy of the Federal Republic of Germany in Moscow</li><li>• <b>Professor Dr Frank Allgöwer</b>, Vice President of the DFG</li><li>• <b>Ulrich Grothus</b>, Deputy Secretary General of the DAAD</li></ul>	Skoltech – Cohort

11:30	<b>OPENING LECTURE</b> "Ruling over Cell Populations – a Systems Perspective on Single Cell Analysis and Control" Professor Dr Frank Allgöwer, Vice President of the DFG, University of Stuttgart, Institute for Systems Theory and Automatic Control – Discussion –	Skoltech – Cohort
12:30	<i>Conference Group Photo</i>	Skoltech – Cohort
12:40	<i>Lunch Break</i>	Daily Food, TPOC-2
13:30	<b>Presentation of Skoltech</b> Professor Dr Rupert Gerzer, Provost, Skoltech	Skoltech – Cohort
14:00	<b>LECTURE</b> "Computational Methods for Discovery and Design of Bioactive Molecules" Professor Dr Maxim Fedorov, Skoltech, Moscow – Discussion –	Skoltech – Cohort
15:00	<i>Coffee Break</i>	
15:30–17:30	<b>SHORT LECTURES OF YOUNG RESEARCHERS</b> Chair: Professor Dr Werner Mewes, Technical University of Munich; Biomax Informatics AG	Skoltech – Cohort
15:30	"Changes in Mutational Processes during Cancer Development" Dr Maria Andrianova, Skoltech, Moscow	
15:50	"The Genoms of Western Civilization" Dr Manuel Spannagl, Helmholtz Zentrum München, German Research Center for Environmental Health	
16:10	"Adaptation of Gene Regulatory Network to Extreme Desiccation in Polypedilum vanderplanki" Dr Pavel Mazin, Skoltech, Moscow	

16:30	<p>“Assessment of Tumor-specific T Cell Antigens and Epitope Cross-reactivity for Cancer Immunotherapy”</p> <p>Anja Moesch, Technical University of Munich</p>	Skoltech – Cohort
16:50	<p>“Deciphering the Regulation of Alternative Pre-mRNA Splicing by Coupling RBP Binding Profiles with Long-range RNA Structure”</p> <p>Dr Dmitry Svetlichny, Skoltech, Moscow</p>	
17:10	<p>“How to Detect the Genetic Causes of Inherited Rare Diseases in Clinics?”</p> <p>Tim Jeske, Helmholtz Zentrum München</p>	
17:30	<i>Transfer to the Hotel</i>	by bus
19:30	<p><b>Evening Reception by the DWIH Moscow (German House for Research and Innovation)</b></p>	<p>by invitation</p> <p>Radisson Slavyanskaya Hotel, Chaikovsky Hall</p>

## September 13, Wednesday

08:00	<i>Transfer from the Hotel to Skoltech</i>	by bus
08:45	<i>Poster Installation</i>	
09:00	<p><b>LECTURE</b></p> <p>“Engineering Meets Biomedicine”</p> <p>Professor Dr Knut Reinert, Freie Universität Berlin</p> <p>– Discussion –</p>	<p>Skoltech, Room 407–408</p>
10:00	<p><b>Presentations of the Member Organisations of the DWIH (Deutsches Wissenschafts- und Innovationhaus / German House for Research and Innovation)</b></p> <p>Dr Peter Hiller, Managing Director of the DWIH Moscow</p>	<p>Skoltech, Room 407–408</p>

10:30	<i>Science Café with the Members of the DWH Moscow</i>	Skoltech – Cohort
11:30	<b>LECTURE</b> “Three-dimensional Structure and Functional States of Chromatin” Professor Dr Mikhail Gelfand, Skoltech, Moscow – Discussion –	Skoltech, Room 407–408
12:30–14:30	<b>Poster Session I and Lunch Break</b> Professor Dr Ralf Zimmer, Ludwig-Maximilian University of Munich	Skoltech – Cohort
14:30	<b>LECTURE</b> “Reading the Future from a Tree: Evolutionary Genomics of Pathogens” Dr Georgy Bazykin, Skoltech, Moscow – Discussion –	Skoltech, Room 407–408
15:30	<b>LECTURE</b> “Next-generation Sequencing: Technology and Bioinformatics” Professor Dr Dmitry Frishman, Technical University of Munich – Discussion –	Skoltech, Room 407–408
16:30	<i>Coffee Break</i>	Skoltech – Cohort
17:30	<b>LECTURE</b> “Science Theory and Medical Reality” Professor Dr Werner Mewes, Technical University of Munich; Biomax Informatics AG – Discussion –	Skoltech, Room 407–408
18:00	<i>Transfer to Moscow</i>	by bus
20:00	<i>Boat Trip and Dinner</i>	by invitation
22:00	<i>Transfer to the Hotel</i>	by bus

## September 14, Thursday

08:15	<i>Transfer from the Hotel to Skoltech</i>	
09:00	<b>Science – Business – Innovation</b> “Start up and later: 20 Years’ Experience” Professor Dr Werner Mewes, Technical University of Munich; Biomax Informatics AG “Grants4Apps – Digital Health Startup Accelerator” Grigory Kolesnikov, Grants4Apps, Bayer “CoLaborator Moscow – R&D Partnering in Pharma” Igor Orshansky, Bayer Pharmaceuticals, Bayer “My-genome-enhancer: Pipeline to Find Drug Targets from Non-coding DNA” Daria Stelmashenko, Biosoft	Skoltech, Room 407–408
10:30–12:00	<b>Poster Session II and Lunch Break</b> Professor Dr Dmitri Pervouchine, Skoltech, Moscow	Skoltech – Cohort
12:00	<b>LECTURE</b> “Genomic Research in the Pushchino Scientific Center” Dr Nafisa Nazipova, Institute of Mathematical Problems of Biology RAS – the Branch of Keldysh Institute of Applied Mathematics RAS – Discussion –	Skoltech, Room 407–408
13:00	<i>Lunch Break</i>	Daily Food, TPOC-2
14:00	<b>LECTURE</b> “Opportunities for and Limitations of Modelling in the Life Sciences” Professor Dr Olaf Wolkenhauer, University of Rostock – Discussion –	Skoltech, Room 407–408



15:00	<b>LECTURE</b> "Bioinformatics of a Complex Human Disease Atherosclerosis – Mechanisms and Networks of Novel Therapeutic Targets" Professor Dr Ralf Zimmer, Ludwig Maximilian University of Munich – Discussion –	Skoltech, Room 407–408
16:00	<i>Coffee Break</i>	Skoltech – Cohort
16:30	<b>LECTURE</b> "Novel Insights into RNA Biology from High Throughput Sequencing Data" Professor Dr Dmitri Pervouchine, Skoltech, Moscow – Discussion –	Skoltech, Room 407–408
17:30	<b>Closing Remarks</b>	Skoltech, Room 407–408
18:00	<i>Transfer to the Hotel</i>	by bus

## September 15, Friday

*Departure*