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SECOND GERMAN-RUSSIAN WEEK OF THE YOUNG RESEARCHER

"HEALTH AND SOCIETY"

Yekaterinburg, September 16-21, 2012

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Welcome to the Second "Week of the Young Researcher"!

Dr. Gregor Berghorn

Dr. Jörn Achterberg

Last year the idea to invite young researchers from Germany and Russia to come together and to discuss current topics of mutual interest was born. After the great success of the first week in Kazan it was decided to turn it into an annual event. Our main goal for this weekis to foster co-operation among the young scientists and researchers from both of our countries who not so long from now will be setting the course of scientific co-operation between Russia and Germany, or indeed, if we may say so, between Russia and Europe!

Research organizations and institutions of higher education from both of our countries will introduce their programmes and showcase the platforms that they can offer, to Russian and German PhD students as well as Post-Docs who wish to initiate collaborative projects or broaden research networks, this week.

We have chosen the Ural Federal University as the venue for this week, with good reason, for Yekaterinburg is one of most important scientific centres in Russia. The University itself is the core of a regional research and innovation cluster and is closely linked to the numerous institutes of the Ural Branch of the Russian Academy of Sciences. Not only does the university bear the name of Boris Yeltsin, the first elected President of the Russian Federation, but it also represents the new type of Federal universities manifesting recently with higher education reforms.

We would like to express our gratitude to the Ural Federal University for its academic hospitality, to the Presidium of the Ural Branch of the Russian Academy of Sciences for its support, as well as to the Council of the Russian Union of Young Scientists (ROSMU) and its Chairman Dr. Aleksandr Shcheglov and finally, of course we thank all of you, the participants, for your involvement in this conference.

СПАСИБО ВАМ!

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German Academic Exchange Service
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Managing Director of DWIH Moscow

DAAD

Dr. Jörn Achterberg

German Research Foundation
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Rector
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ВИКТОР КОКШАРОВ
Ректор
Уральский федеральный университет (УрФУ)

Дорогие коллеги, друзья, уважаемые гости и участники мероприятия!

От имени Уральского федерального университета позвольте мне приветствовать вас в Екатеринбурге. Для нас большая честь и особое удовольствие провести здесь такое важное международное мероприятие. Мы в университете считаем, что установление международного сотрудничества между молодыми учеными является ключевым аспектом активной академической жизни. По этой причине искренне заинтересованы в поддержке именно этого мероприятия и готовы проводить подобные конференции в будущем.

Позвольте мне объяснить вам несколько важных моментов. Высшее образование в России стоит в настоящее время перед решением исключительно важных задач, связанных с процессами глобализации образования и с участием России в конкурентной борьбе на мировом рынке образования на равных с другими странами. С одной стороны, традиционно высокое качество образования и научных исследований в России, особенно в сфере инженерных и естественных наук, обеспечивает России хорошую позицию на старте. С другой стороны, к сожалению, российские университеты в настоящий момент заметно отстают не только от университетов мирового уровня Западной Европы или Северной Америки, но и от университетов стран БРИКС в общем, в частности, Китая.

Понимание этой критической ситуации заставило российское правительство принять срочные меры по реформированию системы высшего образования в стране. Были определены центры повышения качества образовательных услуг, созданы новые рейтинги университетов (национальные, федеральные и национальные исследовательские) и предусмотрены значительные финансовые вложения. Основной стратегической целью в ходе создания новых университетов является укрепление значения российского образования и науки в мировом масштабе, развитие инноваций и новых технологий, интернационализация образования и науки нашей страны, а также усовершенствование практического применения результатов научных исследований в разных формах.

МЕЖДУНАРОДНЫЕ ШКОЛЫ ДОЛЖНЫ В КОНЕЧНОМ ИТОГЕ СПОСОБСТВОВАТЬ СОЗДАНИЮ МЕЖДУНАРОДНОЙ СЕТИ МОЛОДЫХ УЧЕНЫХ, СПОСОБНЫХ РАБОТАТЬ НАД КОМПЛЕКСНЫМИ НАУЧНЫМИ ПРОЕКТАМИ, ОРГАНИЗОВЫВАТЬ КОНФЕРЕНЦИИ И СЕМИНАРЫ, ПУБЛИКОВАТЬ СОВМЕСТНЫЕ ОТЧЕТЫ

Мы считаем, что интернационализация – ключевое слово в данном контексте. Я полагаю, что необходимы не только международные стажировки студентов и профессоров, но и нечто намного более важное. Я имею в виду создание международной атмосферы внутри самого университета, развитие комплексной сети отношений, т.е. того, что на самом деле делает университет вузом международного класса с международной репутацией.

В становлении этого процесса очень важны международные школы и семинары, подобные вашему. Они помогают не только провести международную экспертизу в университете, но и сделать общедоступными наши успехи в научной работе. Именно поэтому в нынешнем году мы организовали целый ряд подобных мероприятий в рамках следующих тем: изучение России, экономика, интернет-технологии... В таком контексте стоит также упомянуть, что УрФУ является ресурсным центром для программ поддержки развития высшего образования в социальных и политических науках. Ежегодно мы организуем 4 конференции по политической философии и религиоведению для молодых преподавателей вузов и учащихся из Центральной и Восточной Европы, из России, Средней Азии и Монголии. Таким образом, это мероприятие не является для нас случайным или маргинальным, а полностью соответствует нашим важнейшим стратегическим целям.

Международные школы тем не менее не являются самоцелью. Они должны, в конечном итоге способствовать созданию международной сети молодых ученых, способных работать над комплексными научными проектами, организовывать конференции и семинары, публиковать совместные отчеты и пр. Мы заинтересованы не только в обмене данных о новейших научных разработках, но и в создании подобных сетей. В этом году мы объявили об открытии новой стипендиальной программы для научных сотрудников с докторской степенью – пока только в социальных и политических науках, но если эксперимент окажется удачным, мы включим в программу и другие научные области...

В заключение позвольте мне выразить надежду на то, что эта конференция предоставит вам возможность завязать отношения с зарубежными коллегами, а также мне хотелось бы, чтобы кто-нибудь из вас после защиты диссертации вернулся в наш университет для научной работы.

И наконец, я хочу пожелать вам больших успехов на конференции. Удачи!

Liebe Kollegen und Freunde, sehr geehrte Gäste und Teilnehmer der Konferenz!

Ich darf Sie heute im Namen der Uraler Föderalen Universität in Jekaterinburg begrüßen. Es ist uns eine große Ehre und besondere Freude, hier eine so wichtige internationale Veranstaltung durchzuführen. Für unsere Universität ist internationale Zusammenarbeit der Nachwuchswissenschaftler der entscheidende Aspekt der aktiven Forschungsarbeit. Aus diesem Grund, und wir sagen es offen, ist uns die Unterstützung dieser Konferenz ein ganz besonderes Anliegen, und wir sind gerne bereit, auch in der Zukunft solche Konferenzen zu organisieren.

Lassen Sie mich bitte an dieser Stelle einige wichtige Punkte erläutern. Das russische Hochschulbildungssystem hat heute außerordentlich wichtige Aufgaben zu lösen, die mit den Globalisierungsprozessen in der Bildung und der Teilnahme Russlands am Wettbewerb auf dem internationalen Bildungsmarkt zusammenhängen. Einerseits hat das Land eine gute Startposition, denn die hohe Qualität der Bildung und Forschung, besonders im Bereich Ingenieur- und Naturwissenschaften, hat hier eine lange Tradition. Andererseits bleiben russische Universitäten heute leider auffallend zurück hinter den größten Weltuniversitäten in Westeuropa und Nordamerika, und wir können auch mit den anderen BRICS-Staaten, vor allem mit China, nicht Schritt halten.

Die russische Regierung ist sich der kritischen Situation bewusst und ist gezwungen, zu Sondermaßnahmen zu greifen, um das Hochschulbildungssystem im Land zu verbessern. Es sind bereits neue Zentren der Qualitätsverbesserung bestimmt worden, es sind neue Formen der Universitäten (nationale Universitäten, föderale Universitäten und nationale Forschungsuniversitäten) festgelegt worden, es sind Haushaltsausgaben für den Bereich Hochschulbildung erhöht worden. Das größte strategische Ziel in der Phase der Gründung neuer Universitäten ist die Festigung der Position des Landes im Bereich Bildung und Forschung in der Welt, Entwicklung innovativer Verfahren, Internationalisierung russischer Bildung und Forschung und praktische Anwendung der Forschungsergebnisse.

Wir glauben, dass das Wort „Internationalisierung“ das Schlüsselwort in diesem Kontext ist. Ich bin der Meinung, es sind nicht nur Forschungsaufenthalte für Studierende und Professoren im Ausland erforderlich, es muss hier etwas Wichtigeres entstehen. Nämlich es soll an jeder Universität die internationale Atmosphäre geschaffen werden, ein komplexes Netzwerk der Kontakte, - das ist es, was eine Universität zu einer anerkannten Bildungseinrichtung in der Welt macht.

Dafür sind internationale Schulen, Seminare und solche Konferenzen, wie die heutige, sehr wichtig. Sie sind nicht nur als eine Art internationale Begutachtung unserer Tätigkeit zu verstehen, sondern machen unseren Fortschritt in der Forschungsarbeit sichtbar und allgemein zugänglich. Deswegen haben wir in diesem Jahr eine ganze Reihe solcher Veranstaltungen organisiert mit verschiedenen thematischen Schwerpunkten: Russlandforschung, Wirtschaftswissenschaften, IT usw. In diesem Zusammenhang möchten wir auch betonen, dass die Uraler Föderale Universität ein Ressourcenzentrum für Programme der Unterstützung der Hochschulbildung im Bereich Sozial- und Politikwissenschaften ist. Jedes Jahr führen wir 4 Konferenzen zur Politikphilosophie und Religionswissenschaft für junge Hochschullehrer und Studierende aus Mittel- und Osteuropa, Russland, Zentralasien und der Mongolei durch. Die heutige Veranstaltung ist also keine zufällige, sondern sie entspricht vollkommen unserem strategischen Ziel.

Internationale Schulen sind für uns aber kein Selbstzweck. Sie sollen im Endeffekt zum Aufbau eines internationalen Netzwerkes der Nachwuchswissenschaftler beitragen, deren Mitglieder komplexe Forschungsprojekte leiten, Konferenzen und Seminare organisieren, Berichte über gemeinsame Arbeit veröffentlichen können. Wir sind nicht nur am Informationsaustusch über die neueste Entwicklung der Wissenschaft, sondern auch an Bildung solcher Netzwerke interessiert. In diesem Jahr schreiben wir ein neues Stipendium für habilitierte Mitarbeiter aus, vorerst im Bereich Sozial- und Politikwissenschaften, wenn aber das Stipendium sich bewährt, werden wir auch andere Wissenschaftsbereiche miteinbeziehen…

Abschließend möchte ich die Hoffnung ausdrücken, dass diese Konferenz Ihnen eine Möglichkeit geben wird, Kontakte mit ausländlichen Kollegen anzubahnen. Außerdem wäre ich sehr froh, wenn jemand von Ihnen nach der Promotion an unsere Universität zurückkehrt, um hier weiter zu forschen.

Ich wünsche Ihnen viel Erfolg auf der Konferenz!

Viel Glück!

Уважаемые дамы и господа!

ALEKSANDR KHARLOV

Minister für internationale und außenwirtschaftliche Angelegenheiten der Oblast Sverdlovsk

АЛЕКСАНДР ХАРЛОВ

Министр международных и внешнеэкономических связей Свердловской области

Рад приветствовать dac на открытии Недели молодого ученого, которая проходит в городе Екатеринбурге в рамках официально объявленного перекрестного Года Германии в России!

Мы с вами живем в очень интересное время, в котором забота о здоровье гражданского общества приобретает все бóльшую значимость. Не случайно проекты и научные исследования, связанные с темой «Общество и здоровье», для нас очень актуальны.

Сегодня мы говорим, что здоровье – это ценность, алмаз, который нужно охранять. Но, безусловно, понимаем, что за этим стоит большая работа. Это и постоянная пропаганда здорового образа жизни, улучшение качества медицинского обслуживания, создание благоприятных условий для занятий спортом и многое, многое другое.

С Федеративной Республикой Германия у Свердловской области теплые доверительные отношения, крепкие дружественные связи. Нашему сотрудничеству уже более 20 лет, и в течение этого времени ФРГ является ведущим торгово-экономическим партнером Свердловской области. Отрадно видеть, что наше партнерство многогранно, оно укрепляется также в области культуры и образования, обмена научными знаниями.

Наши немецкие коллеги имеют большой опыт в отношении вопросов здоровья человека и общества, который основан на социально-ориентированной экономике ФРГ. И я очень рад тому, что в рамках мероприятий Недели молодого ученого нам удастся обменяться своими знаниями и опытом в этой области.

Россия и Свердловская область идут сегодня по инновационному пути развития. Этот путь предполагает конкурентоспособность, которая не означает только ресурсные, материальные, финансовые, технические и другие преимущества. Конкурентоспособность – это в первую очередь соревнование в сфере возможностей человеческого ума и достижения благосостояния общества. Именно эта цель диктует модернизацию образования, ориентированного на воспитание в человеке социальных ценностей и здорового образа жизни.

Не случайно сегодняшнее мероприятие проходит в стенах крупнейшего вуза Свердловской области – Уральского федерального университета. Результаты научных исследований свидетельствуют, что от 50 до 80% здоровье человека зависит от уровня его образованности. А подлинная образованность проявляется в ответственности человека за свое здоровье и здоровье окружающих, в способности жить в гармонии с собой и миром.

Желаю всем участникам Недели молодого ученого здоровья, успехов и новых интересных проектов! Уверен, что в будущем мы сможем воплотить ваши инновационные идеи в жизнь! Спасибо за внимание!

Sehr geehrte Damen und Herren!

Es ist mir eine Freude, Sie anlässlich der Eröffnung der „Woche des jungen Wissenschaftlers“ in Jekaterinburg im Rahmen des Russland- und Deutschlandjahres begrüßen zu dürfen!

Wir leben in interessanten Zeiten, in denen die Sorge um die Gesundheit der Gesellschaft eine immer größere Wichtigkeit erlangt. So ist es kein Zufall, dass Projekte und wissenschaftliche Forschungen zum Thema „Gesellschaft und Gesundheit“ für uns von hoher Aktualität sind.

Heute heißt es, Gesundheit ist ein Wert, ein Diamant, den es zu beschützen gilt. Aber natürlich wissen wir auch, dass dies mit viel Arbeit verbunden ist. Erforderlich ist eine ständige Werbung für einen gesunden Lebensstil, eine Verbesserung der medizinischen Versorgung, die Schaffung günstiger Bedingungen für sportliche Betätigung und vieles andere mehr.

Das Gebiet Swerdlowsk unterhält mit der Bundesrepublik Deutschland ein gutes und vertrauensvolles Verhältnis und freundschaftliche Bande. Unsere Zusammenarbeit zählt bereits mehr als 20 Jahre und in dieser Zeit ist die Bundesrepublik Deutschland zum wichtigsten Partner der Oblast Swerdlowsk in Handel und Wirtschaft geworden. Es freut mich, dass unsere Partnerschaft so vielschichtig ist und durch den Austausch von wissenschaftlichen Erkenntnissen auch im Bereich Kultur und Bildung weiter gefestigt wird.

Unsere deutschen Kollegen haben viel Erfahrung in Hinblick auf Fragen der menschlichen Gesundheit und der Gesellschaft, dies geht auf die sozial orientierte Wirtschaft der Bundesrepublik Deutschland als solche zurück. Ich freue mich daher, dass es in Gestalt der „Woche des jungen Wissenschaftlers“ gelingt, unser Wissen und Ideen zu diesem Thema auszutauschen.

Russland und die Oblast Swerdlowsk bewegen sich heute auf einem innovativen Entwicklungspfad. Dieser Pfad setzt Konkurrenzfähigkeit voraus, die jedoch nicht nur Ressourcen, materielle Grundlagen, Finanzmittel, Technik und andere Vorteile beinhaltet. Konkurrenzfähigkeit bedeutet in erster Linie Wettbewerb im Bereich der Möglichkeiten der menschlichen Intelligenz und des Erfolgs im Bereich des gesellschaftlichen Wohlstands. Eben dieses Ziel verlangt eine Modernisierung von Bildung und Ausbildung, die den Menschen hin zu sozialen Werten und einer gesunden Lebensführung erzieht.
So ist es kein Zufall, dass die heutige Veranstaltung in den Räumlichkeiten der größten Universität des Gebietes Swerdlowsk stattfindet, der Uraler Föderalen Universität. Die Ergebnisse wissenschaftlicher Untersuchungen bestätigen, dass die Gesundheit des Menschen von rund 50-80% vom Grad seines Bildungsstands abhängt. Wahre Bildung äußert sich im Verantwortungsbewusstsein des Menschen für seine eigene Gesundheit und die seines Umfelds, in der Fähigkeit, mit sich und der Welt in Einklang zu leben.

Ich wünsche allen Teilnehmern der Woche des jungen Wissenschaftlers Gesundheit, Erfolg und neue, interessante Projekte! Ich bin überzeugt, dass es uns gelingt, Ihre innovativen Ideen in die Tat umzusetzen!

Ich danke Ihnen für Ihre Aufmerksamkeit!

Доброе утро, дамы и господа!

VALERY CHARUSHIN

Vorsitzender der Uraler Abteilung der Russischen Akademie der Wissenschaften (URAN)

ВАЛЕРИЙ ЧАРУШИН

Председатель Уральского отделения Российской академии наук, Екатеринбург

Как председатель УрО РАН я имею честь принять участие в церемонии официального открытия, и мне доставляет большое удовольствие приветствовать участников II Российско-германской недели молодого ученого, посвященной такой важной теме как «Общество и здоровье». Позвольте мне поприветствовать всех вас от имени моих коллег, работающих в академических институтах Уральского отделения Российской академии наук.

Одной из стратегических целей УрО РАН является развитие международных отношений. Как известно, Германия является нашим партнером номер один, и академические институты Уральского отделения установили прочные связи со многими научными центрами и университетами Германии, среди которых Радиоастрономический институт Макса Планка (Бонн) и Институт астрофизики (Гархинг), Исследовательская школа современных материалов Макса Планка (Штутгарт), университеты Кёльна, Гамбурга, Оснабрюка, Аугсбурга, Институт кристаллографии университета Эрлангена-Нюрнберга, Технический университет Фрайбурга, Институт археологии университета имени Й.В. Гёте (Франкфурта-на-Майне), компании «Biotronik» и «BioGenes».

В ПРОШЛОМ ГОДУ УЧЕНЫЕ УРАЛЬСКОГО ОТДЕЛЕНИЯ ПРИНИМАЛИ УЧАСТИЕ В 27 СОВМЕСТНЫХ НЕМЕЦКО-РОССИЙСКИХ ИССЛЕДОВАТЕЛЬСКИХ ПРОЕКТАХ

Проведение этой конференции в Екатеринбурге – блестящая идея и, я полагаю, что II Российско-германская неделя молодого ученого обязательно позволит расширить связи между нашими странами.

Как известно, этот год был объявлен перекрестным Годом Германии в России. 2012 год также является значимым для всех ученых Урала, потому что мы собираемся отпраздновать 25-ю годовщину образования Уральского отделения РАН и 80-летие академической науки Урала. Множество научных конференций будут посвящены этим датам на Урале, и основное событие, Уральский научный форум, начнется здесь, в Уральском федеральном университете, в ноябре.

Как я уже отметил, Германия является партнером номер один для УрО РАН. Действительно, в прошлом году ученые Уральского отделения принимали участие в 27 совместных немецко-российских исследовательских проектах. Кроме того, отделением было выделено 6 трэвел-грантов, чтобы помочь молодым ученым посетить немецкие научные учреждения. За прошедшие годы мы приобрели опыт поддержки российско-германских школ для молодых ученых и российско-германских передвижных семинаров. Так, в 1999 году Физико-технический институт имени А.Ф. Йоффе, возглавляемый лауреатом Нобелевской премии Жоресом Алферовым, пригласил группу из 20 немецких профессоров посетить Россию. Сначала они приехали в Санкт-Петербург, затем в Казань, и, наконец, в Екатеринбург, чтобы принять участие в конференции по материаловедению. Это послужило началом установ-

ления длительных связей между физиками Екатеринбурга и Германии. В 2006 году в Екатеринбурге состоялась первая российско-германская школа для молодых ученых. В 2008м и 2009 годах российско-германские передвижные семинары были проведены в Германии и России. В прошлом году российско-германский передвижной семинар по синхротронному излучению прошел в Москве в Курчатовском институте. Затем он был продолжен в Институте химии твердого тела УрО РАН, и, наконец, в Уральском федеральном университете.

Уверен, что мы должны следовать этим прекрасным примерам сотрудничества ученых-физиков для развития новых связей во всех областях науки.

В заключение позвольте мне выразить благодарность Посольству Федеративной Республики Германия в Москве, DAAD (Германской службе академических обменов) и DFG (Немецкому научно-исследовательскому сообществу), Генеральному консульству ФРГ в Екатеринбурге, Российскому союзу молодых ученых, всем тем, кто участвовал в организации этой конференции, важнейшего события для укрепления связей между немецкими и российскими учеными, занимающимися фундаментальными и прикладными науками о жизни, экологии, здравоохранении и обществе. Кроме того, я хотел бы поблагодарить ректора Уральского федерального университета Виктора Кокшарова за его усилия в организации конференции и гостеприимство.

В 2006 ГОДУ В ЕКАТЕРИНБУРГЕ СОСТОЯЛАСЬ ПЕРВАЯ РОССИЙСКО-ГЕРМАНСКАЯ ШКОЛА ДЛЯ МОЛОДЫХ УЧЕНЫХ. В 2008М И 2009 ГОДАХ РОССИЙСКО-ГЕРМАНСКИЕ ПЕРЕДВИЖНЫЕ СЕМИНАРЫ БЫЛИ ПРОВЕДЕНЫ В ГЕРМАНИИ И РОССИИ

Наконец, я хотел бы поблагодарить всех гостей, особенно тех, кто преодолел долгий путь, чтобы приехать в Екатеринбург и принять участие в этом значимом мероприятии. Желаю всем вам приятного пребывания в Екатеринбурге, новых научных идей и интересных дискуссий. Уверен, что эта неделя в Екатеринбурге станет для вас незабываемой.

Guten Morgen, meine Damen und Herren!

Als Vorsitzender der Uraler Abteilung der Russischen Akademie der Wissenschaften (URAN) habe ich die Ehre und das Vergnügen, an der feierlichen Eröffnungszeremonie teilzunehmen und die Teilnehmer und Gäste der Zweiten Woche des jungen Wissenschaftlers, die einem sehr wichtigen Thema gewidmet ist, nämlich „Gesellschaft und Gesundheit", begrüßen zu dürfen. Ich darf Sie heute im Namen meiner Kolleginnen und Kollegen begrüßen, die an akademischen Instituten der Uraler Abteilung der Russischen Akademie der Wissenschaften tätig sind.

Eines der strategischen Ziele der Uraler Abteilung der Russischen Akademie der Wissenschaften ist Entwicklung der internationalen Beziehungen. Es ist bekannt, dass Deutschland unser prioritärer Partner ist, akademische Institute der URAN haben bereits feste Kontakte mit vielen Forschungszentren und Universitäten Deutschlands: Max-Planck-Institut für Radioastronomie (Bonn), Max-Planck-Institut für Astrophysik (MPA, Garching), International Max Planck Research School for Advanced Materials (Stuttgart), Universität zu Köln, Universität Hamburg, Universität Osnabrück, Universität Augsburg, Lehrstuhl für Kristallographie und Strukturphysik der Universität Erlangen-Nürnberg, Technische Universität Freiburg, Institut für Archäologische Wissenschaften der Goethe Universität (Frankfurt am Main), BIOTRONIK SE & Co.KG, BioGenes GmbH Berlin.

Diese Konferenz in Jekaterinburg ist eine glänzende Idee, und ich glaube fest daran, dass die 2. Deutsch-Russische Woche des jungen Wissenschaftlers uns helfen wird, die Beziehungen zwischen unseren Ländern auszuweiten.

Es ist bekannt, dass dieses Jahr zum Deutschlandjahr in Russland erklärt worden ist. Das Jahr 2012 ist auch für alle Wissenschaftlerinnen und Wissenschaftler im Ural von besonderer Bedeutung: Die Uraler Abteilung der Russischen Akademie der Wissenschaften feiert ihr 25-jähriges Bestehen, bereits seit 80 Jahren wird im Ural die Grundlagenforschung betrieben. Aus diesem Anlass veranstaltet man im Ural zahlreiche wissenschaftliche Konferenzen, das wichtigste Ereignis, Uraler Wissenschaftsforum, findet im November an der Uraler Föderalen Universität statt.

Wie bereits gesagt, ist Deutschland Partner Nummer eins für die URAN. Im letzten Jahr haben Wissenschaftlerinnen und Wissenschaftler der Uraler Abteilung an 27 gemeinsamen deutsch-russischen Forschungsprojekten teilgenommen. Außerdem schrieb die URAN 6 Stipendien aus, die jungen Wissenschaftlern einen Forschungsaufenthalt an einer deutschen Forschungseinrichtung ermöglichten. In den letzten Jahren haben wir Erfahrungen gesammelt, wie man russisch-deutsche Forschungsschulen für junge Wissenschaftler und russisch-deutsche Blockseminare unterstützt. Im Jahre 1999 lud das Physikalisch-technische A.F. Ioffe-Institut, damals von dem Nobelpreisträger Schores Alfjorow geleitet, eine Gruppe von 20 Professoren aus Deutschland zu einer Reise nach Russland ein. Zuerst kam die Gruppe nach St. Petersburg, dann besuchte sie Kasan und schließlich Jekaterinburg, um an einer Konferenz zur Werkstoffkunde teilzunehmen. Dies war der Anfang der Zusammenarbeit für die Physiker aus Jekaterinburg und aus Deutschland. 2006 wurde in Jekaterinburg die erste russisch-deutsche Forschungsschule für junge Wissenschaftler veranstaltet. 2008 und 2009 fanden in beiden Ländern Blockseminare statt. Im letzten Jahr fand am Kurtschatow-Institut in Moskau ein russisch-deutsches Seminar zum Thema Synchrotronstrahlung statt. Es fand eine Fortsetzung am Institut für Chemie des festen Körpers der URAN und zum Schluss an der Uraler Föderalen Universität.
Ich bin sicher, dass wir uns an diese schönen Vorbilder der Zusammenarbeit aus dem Bereich Physik halten sollen, um neue Horizonte für unsere Zusammenarbeit in allen Bereichen der Wissenschaft zu erschließen.

Abschließend möchte ich mich bei dem deutschen Botschafter in Moskau, dem DAAD und der DFG, dem Generalkonsul der BRD in Jekaterinburg, dem Verband Junger Wissenschaftler in Russland (RoSMU) und all denjenigen bedanken, die diese Konferenz organisiert haben. Sie ist ein sehr wichtiges Ereignis für die Festigung der Beziehungen zwischen deutschen und russischen Wissenschaftlern, die angewandte und Grundlagenforschung auf solchen Gebieten wie Lebens- und Gesellschaftswissenschaften, Umwelt- und Gesundheitsschutz betreiben. Außerdem möchte ich dem Rektor der Uraler Föderalen Universität Wiktor Kokscharow meinen Dank aussprechen für seine tätige Hilfe bei der Organisation der Konferenz und für seine Gastfreundschaft.

Ich bedanke mich bei allen Gästen, besonders bei denen, die von weitem angereist sind, um an dieser für uns wichtigen Veranstaltung teilzunehmen. Ich wünsche Ihnen allen einen angenehmen Aufenthalt in Jekaterinburg, viele neue Ideen und anregende Diskussionen. Diese Woche in Jekaterinburg wird uns allen bestimmt noch lange in Erinnerung bleiben.

DR. RENATE SCHIMKOREIT

Generalkonsulin der Bundesrepublik Deutschland in Jekaterinburg

Д-Р РЕНАТЕ ШИМКОРАЙТ

Генеральный консул Федеративной Республики Германии в Екатеринбурге

Sehr verehrte Damen und Herrn, liebe Gäste aus Deutschland und Russland,

mit großer Freude begrüße ich Sie alle hier im Herzen des Urals zur 2. Deutsch-Russischen Woche des jungen Wissenschaftlers in der Russischen Föderation.

Meine Freude über diese Veranstaltung hat gleich mehrere Ursachen:
Zunächst ist die Veranstaltung, die Sie in den kommenden Tagen mit Leben füllen werden, ein willkommener und überzeugender Beweis dafür, dass die Strategie der Bundesregierung zur Internationalisierung von Wissenschaft und Forschung gut aufgenommen wird und einen hervorragenden Rahmen für Begegnungen und Austausch von Wissenschaftlern bildet.
Basierend auf dieser Strategie, die im Jahr 2009 ins Leben gerufen wurde, konnten als sichtbare Zeugen bereits in fünf Städten Deutsche Wissenschafts- und Innovationshäuser eingerichtet werden: in New York, Sao Paulo, New Delhi, Tokyo – und natürlich in Moskau, dessen DWIH-Team Regie geführt hat bei der Vorbereitung der Woche des Jungen Wissenschaftlers in Jekaterinburg.

Diese Wissenschafts- und Innovationshäuser verstehen sich als Institutionen, in denen deutsche Forschungseinrichtungen gepoolt und mit innovativen Unternehmen vernetzt werden, um dann in dieser Konstellation internationale partnerschaftliche Wissenschaftskooperationen auf die Beine zu stellen. Ich kann Ihnen allen empfehlen, für alle aufkommenden Fragen die Website des DWIH Moskau zu konsultieren, die gleichzeitig einen guten Eindruck zur Vielfalt der angebotenen Instrumente vermittelt.
Wenn wir ergänzend einen Blick auf die russischen Partner unserer wissenschaftlichen Woche in Jekaterinburg werfen, dann können wir umso überzeugter sein, dass die Initiative angekommen ist und gute Zukunftsperspektiven hat. Mit der Uraler Föderalen Boris-Jelzin-Universität, der Uraler Abteilung der Russischen Akademie der Wissenschaften sowie der Russischen Vereinigung junger Wissenschaftler sind die richtigen, kreativen Akteure mit im Boot.

Die Wissenschaftskooperation mit Russland hat für uns auch einen wichtigen außenpolitischen Aspekt. Das deutsche Auswärtige Amt fördert die Internationalisierung von Wissenschaft und Forschung im Rahmen seiner Außenwissenschaftsinitiative und unterstützt u. a. auch ganz konkret das DWIH in Moskau-, gemeinsam mit dem Bundesministerium für Bildung und Forschung.

Mit Parametern für eine „Außenwissenschaftspolitik", die schon länger existierende Aktivitäten – wie bspw. Stipendienprogramme und Kooperationsprojekte – mit neuen Themenbereichen verbinden sollen, wollen wir zu einer Gesamtkonzeption gelangen, die gutes Synergiepotenzial hat.
Kurz gesagt: Wissenschaftskooperation ist nicht – und soll nicht – l'art pour l'art sein, die auf kleine Gruppen von Wissenden begrenzt bliebe.

Vielmehr betrachten wir sie als elementare Voraussetzung zur Bewältigung globaler Herausforderungen, die eben nicht an den nationalen Grenzen Halt machen-, ob es sich nun um den Klimawandel, Lebensmittelsicherheit, Wasser- und Energieressourcen – oder auch, wie in unserem aktuellen Fall, um Chancen und Risiken der Volksgesundheit handelt.
Wissenschaftsbeziehungen bringen Länder und Menschen einander näher und sind insofern auch Unterstützung für diplomatische Bemühungen. In letzter Konsequenz führt Wissensaustausch immer auch zur besseren Kenntnis voneinander

und zum Abbau von Vorurteilen und Misstrauen.
Zu guter Letzt fügt sich unsere heutige Veranstaltung auch ein in das deutsch-russische Jahr 2012/2013.
Eingangs habe ich erwähnt, dass es mich ganz besonders freut, dass die 2. Woche des Jungen Wissenschaftlers hier in Jekaterinburg stattfindet.
Nach vier Jahren als deutsche Generalkonsulin im Ural weiß ich, dass diese Wahl nicht besser hätte sein können. Die Ural-Region ist eine der dynamischsten in der Russischen Föderation. Sie verfügt über eine heterogene Wirtschaft, die viele Anreize für ausländische Unternehmen und Akteure bietet.
Jekaterinburg, die „heimliche" Hauptstadt des Urals hat sich mittlerweile auch was den Wissenschaftsbetrieb angeht auf die Überholspur gesetzt.
Die Föderale Boris-Jelzin-Universität ist eine der größten in Russland und – was noch wichtiger ist – sowohl im Ausland bereits gut mit Universitätspartnerschaften vernetzt als auch vor Ort für immer wieder neue Projekte, gern auch in Kooperation mit der Wirtschaft, offen.
Das sind unabdingbare Voraussetzungen – dann aber auch Garanten für Erfolg!

Auch die Medizin-Thematik, die Sie für die Woche des jungen Wissenschaftlers ausgewählt haben, passt hervorragend nach Jekaterinburg. Denn es gibt hier seit einiger Zeit Projekte und Programme, der Region einen weiteren – auch wirtschaftlichen – Schwerpunkt „Medizin" zu geben. Auch mit Ziel, quasi als Relaisstation für das sibirische Russland eintreten zu können.

Schon jetzt sind Folgeveranstaltungen geplant, die das Momentum weiterführen werden, das mit der Woche des jungen Wissenschaftlers gegeben wurde. Und damit ist eines der wichtigsten Etappenziele bereits erreicht: Anstöße zu geben und eine Basis zu errichten, auf der weiter aufgebaut werden kann.

Уважаемые дамы и господа, дорогие гости из Германии и России!

Я рада приветствовать вас здесь, в сердце Урала, на открытии II германо-российской недели молодого ученого в Российской Федерации.

У меня есть несколько причин для этой радости:
Во-первых, это мероприятие, как вы в ближайшие дни сможете сами почувствовать, является ярким подтверждением того, что реализуемая правительством Федеративной Республики Германия стратегия интернационализации науки и научных исследований находит широкий отклик и формирует прекрасные условия для встреч и обмена мнениями среди представителей ученого сообщества.
Ярким свидетельством осуществления этой стратегии, которая была сформулирована в 2009 году, являются Германские дома науки и инноваций, которые были основаны в пяти городах: Нью-Йорк, Сан-Паулу, Нью-Дели, Токио, и, конечно, в Москве, чья сплоченная команда взяла на себя подготовку и организацию Недели молодого ученого в Екатеринбурге.

Германские дома науки и инноваций следует понимать как институты, в рамках которых различные направления научных исследований, проводимых немецкими учеными, образуют пулы, которые, в свою очередь, объединяются в одну сеть с инновационными предприятиями, чтобы затем дать возможность развития международной партнерской научной кооперации. Я могу вам порекомендовать по всем возникшим у вас в этой связи вопросам обратиться к интернет-сайту Германского дома науки и инноваций в Москве, где вы также сможете получить информацию о разнообразии предлагаемых инструментов.

Если мы в довершение всего обратим свой взгляд на российских партнеров нашей научной недели в Екатеринбурге, мы еще более сможем убедиться в том,

что эта инициатива нашла большой отклик и имеет хорошие перспективы в будущем. В лице Уральского федерального университета им. Бориса Ельцина, уральского отделения Российской академии наук, а также Российского союза молодых ученых вместе с нами на нашем корабле оказались самые лучшие, креативные участники.

Научная кооперация с Россией имеет для нас также очень важный внешнеполитический аспект. Министерство иностранных дел Германии способствует интернационализации науки и научных исследований в рамках своих международных инициатив в области науки, а также поддерживает среди прочего конкретно Германский дом науки и инноваций в Москве совместно с Федеральным министерством образования и научных исследований.
С помощью параметров «международной научной политики», которые должны связать такие уже давно существующие инструменты, как стипендиальные программы и кооперационные проекты с новыми тематическими областями, мы хотим выработать общую концепцию, которая обладала бы достаточным синергетическим потенциалом.

Говоря коротко, научная кооперация не является – и не должна быть – искусством ради искусства, и ограничиваться небольшими группами посвященных.
Мы более всего склонны рассматривать ее как наличие необходимых элементарных предпосылок для борьбы с глобальными угрозами, которые не останавливаются перед национальными границами – идет ли при этом речь об изменениях климата, обеспечении продуктами питания, запасах воды и энергетических ресурсах – или, как в нашем сегодняшнем случае, о шансах и рисках в сфере обеспечения здоровья населения.

В КОНЕЧНОМ СЧЕТЕ ОБМЕН ЗНАНИЯМИ ВЕДЕТ К ЛУЧШЕМУ ПОНИМАНИЮ ДРУГ ДРУГА И ИСКОРЕНЕНИЮ ПРЕДРАССУДКОВ И НЕДОПОНИМАНИЙ

Научные связи сближают народы и являются в этом смысле поддержкой дипломатических отношений. В конечном счете обмен знаниями ведет к лучшему пониманию друг друга и искоренению предрассудков и недопониманий.

В конце концов, наше сегодняшнее мероприятие связано с проводимым в 2012/2013 годах перекрестным Годом Германии в России.

В начале я упомянула, что меня особенно радует, что II Неделя молодого ученого проводится в Екатеринбурге.

После четырехлетнего опыта моей работы на Урале в качестве Генерального консула я знаю, что лучшего выбора не могло и быть. Уральский регион является одним из наиболее динамичных в Российской Федерации. Экономика этого региона разнородна и предлагает много стимулов для иностранных предпринимателей и других участников. Екатеринбург, неофициальная столица Урала, обогнал остальных и по части науки. Уральский федеральный университет – один из самых крупных в России, и, что еще важнее, он имеет не только хорошие партнерские связи с иностранными университетами, но и здесь, на месте всегда открыт для новых проектов, и кооперации с разными отраслями экономики.
Все это – неотъемлемые предпосылки, но при этом и гарантии успеха!

Медицинская тематика, которая была выбрана для Недели молодого ученого, также прекрасно подходит для Екатеринбурга, так как здесь уже некоторое время реализуются проекты и программы, которые позволят характеризовать регион как развитый в еще одном экономическом отношении – в сфере медицины. С целью создания своеобразного ретранслятора для продвижения в сибирскую часть России.

Уже сейчас запланированы следующие мероприятия, которые призваны развить импульс, заданный Неделей молодого ученого. И тем самым достигнута важная промежуточная цель: создать стимулы и базис, которые послужат дальнейшему развитию.

Sehr geehrter Herr Rektor Kokscharow,
Sehr geehrter Herr Vorsitzender Tscharuschin,
Sehr geehrter Herr Minister Kharlow,
Sehr geehrte Frau Generalkonsulin Schimkoreit,
lieber Herr Shcheglow,
lieber Herr Kollege Huber,
meine sehr geehrten Damen und Herren,

PROF. PETER FUNKE
Vize-Präsident der Deutschen Forschungsgemeinschaft

ПРОФ. ПЕТЕР ФУНКЕ
вице-президент Немецкого научно-исследовательского сообщества

ich freue mich sehr, dass Sie der gemeinsamen Initiative des Deutschen Akademischen Autauschdienstes und der Deutschen Forschungsgemeinschaft gefolgt sind und begrüße Sie ganz herzlich zur Zweiten Deutsch-Russischen Nachwuchswoche hier in Jekaterinburg!

Ich habe eben die Zahl „zwei" aus gutem Grunde besonders betont, denn genau vor einem Jahr eröffneten mein Kollege Huber und ich die erste Nachwuchswoche in Kasan. Anlässlich des Deutsch-Russischen Wissenschaftsjahres wurde eine neue Idee verfolgt: Jungen Wissenschaftlern beider Länder ein Forum des Austauschs zu bieten, auf dem sie selbst von ihren wissenschaftlichen Arbeiten berichten und Vorträgen erfahrener Wissenschaftler beiwohnen können. Wir hatten dabei die Hoffnung geäußert, dass sich die Idee verstetigen möge, einmal pro Jahr an wechselnden Standorten zu wechselnden Thematiken bilaterale Nachwuchswochen in Russland durchzuführen.

Insofern ist der heutige Tag aus unserer Sicht bereits ein großer Erfolg für alle Beteiligten. Lassen Sie mich daher den Organisatoren und Teilnehmern hier in Jekaterinburg herzliche Glückwünsche aussprechen und persönlichen Dank sagen! Meine Damen und Herren, Sie alle tragen dazu bei, eine Veranstaltungsreihe ins Leben zu rufen.
Ich freue mich auch ganz persönlich, hier zu sein, denn es ist das erste Mal, dass es sich in meiner Funktion als Vizepräsident der Deutschen Forschungsgemeinschaft hat einrichten lassen, nach Jekaterinburg zu reisen. Jekaterinburg ist ja eine Stadt, die weit über die Landesgrenzen Russlands hinaus bekannt ist und Interesse weckt. Natürlich denken wir dabei als Erstes an Boris Jelzin, den Namenspatron Ihrer Hochschule, lieber Herr Kokscharow, aber auch an Jakow Swerdlow, den zeitweiligen Namensgeber ihrer Stadt, der maßgeblich am tragischen Ende des Zaren Nikolaus II. und seiner Familie beteiligt war.

Insbesondere was den Namen und die Geburt Ihrer Stadt angeht, so standen ja auch wir Deutschen einige Male Pate. Der deutschstämmige Georg Wilhelm de Hennin, ein enger Vertrauter Peters des Großen, gilt als einer der Gründungsväter Jekaterinburgs im Jahre 1723. Und selbst wenn der Name Ihrer Stadt nicht auf Katharina II., sondern Katharina I. zurückgeht, so hat doch diese große russische Zarin mit deutschen Wurzeln, Jekaterinburg die ersten Stadtrechte verliehen und 1781 zum Zentrum des hiesigen Gouvernements ernannt.
Es gibt für uns Deutsche natürlich noch Vieles mehr, was wir mit der Geschichte Ihrer Stadt verbinden. Gestatten Sie mir als Historiker nur noch einen kleinen Verweis auf die große Russlandexpedition Alexander von Humboldts 1829. So hatte Humboldt dabei ja nicht nur das große Glück, die ersten Diamanten in der „Alten Welt" zu entdecken, sondern konnte auf der Durch-

reise hier bei Ihnen auch noch die Grenze zwischen Asien und Europa festlegen. Die Bedeutung Jekaterinburgs als Fenster nach Asien und damit auch als Verkehrsknotenpunkt bleibt bis heute bestehen. Und obgleich ich mit dem Flugzeug angereist bin, gibt es ja immer noch die Möglichkeit mit einem Kurswagen der Bahn von Berlin nach Jekaterinburg zu reisen.

Die besondere Mittlerfunktion Jekaterinburgs wollen wir auch in diesen Tagen nutzen, um den Austausch von Ideen zu einem aktuellen Thema zwischen unseren Ländern, das heißt eben auch zwischen Asien und Europa voranzutreiben. Im Mittelpunkt stehen globale Probleme zum großen Themenkomplex der „Gesundheitsforschung", denen sich die Wissenschaft nur im Verbund über Ländergrenzen hinweg widmen kann. Dass dem Nachwuchs dabei besondere Beachtung geschenkt werden muss, liegt in der Natur der Sache. In einigen Jahren werden viele von Ihnen selbständig die heute begonnenen Forschungen weiter treiben und dabei auch Entscheidungen in eigener Verantwortung tragen müssen. Ich glaube, dass diese Woche in Jekaterinburg eine ideale Plattform für einen intensiven Gedankenaustausch und eine Basis für zukünftige Kooperationen bietet.

„Deutschland und Russland: gemeinsam die Zukunft gestalten", so lautet auch das Motto des laufenden Deutschlandjahres in Russland 2012/13. Und wir hoffen mit unserer Veranstaltung zum Gelingen des Jahres beizutragen, vor allem weil dieses Motto die Grundidee unserer gesamten Woche widerspiegelt. Denn ohne unseren Nachwuchs können wir weder in der Wissenschaft noch in sonstigen Bereichen der Gesellschaft die Zukunft gestalten.
Grundsätzlich verfolgen wir mit den Nachwuchswochen zwei strategische Ziele: Zum einen werden mit der Präsentation von Spitzenforschung und der Vernetzung des Nachwuchses zentrale Punkte der bilateralen Zusammenarbeit aufgegriffen; und zum anderen wird am Standort Jekaterinburg der Austausch mit den wissenschaftlichen Zentren in den Regionen Russlands vorangetrieben - denn auch hier wird auf hohem Niveau von Interesse für Deutschland geforscht.

Lassen Sie mich daher hervorheben, dass es vor allem die Bedeutung Jekaterinburgs als Wissenschaftszentrum ist, die uns heute hier aus weiten Teilen Russlands und Deutschlands zusammenführt. Ich darf Ihnen, lieber Herr Tscharuschin, ganz herzlich gratulieren! Als Vorsitzender des Präsidiums der Uraler Abteilung der Russischen Akademie der Wissenschaften begehen Sie in diesem Jahr ihr 25-jähriges Jubiläum. Mittlerweile zählt die Akademie 45 Forschungsinstitute, wobei die ersten bereits vor 80 Jahren gegründet wurden. Im Übrigen pflegte die DFG, genauer gesagt ihre Vorgängerorganisation, zu dieser Zeit bereits enge Kontakte zur Russischen Akademie der Wissenschaften.

Gestatten Sie mir an dieser Stelle einige weitere Ausführungen zur DFG. Die Deutsche Forschungsgemeinschaft ist heute der größte Forschungsförderer in Europa. Mit einem Jahresbudget von über zweieinhalb Milliarden Euro unterstützen wir die Entwicklung der Grundlagenforschung an Hochschulen und Forschungsinstitutionen. Im internationalen Förderhandeln der DFG spielt Russland eine führende Rolle, denn seit 2003 ist die DFG mit einer eigenen Auslandsrepräsentanz in Moskau vertreten. Aber bereits seit 1970 besteht ein Abkommen mit der Akademie der Wissenschaften, um den Austausch zwischen unseren Forschernationen zu befördern.
Mittlerweile arbeiten deutsch-russische Forschungsgruppen von Kaliningrad bis Wladiwostok und vom Nordkaukasus bis zur Kola-Halbinsel an gemeinsamen DFG-Projekten. Allein in den letzten drei Jahren finanzierte die DFG über 300 Projektanträge mit Beteiligung russischer Forscher. Beispiele dafür finden sich auch in der Uraler Region, insbesondere auf den Gebieten der Physik, der Chemie und der Mathematik, aber auch in der Zoologie sowie in den Materialwissenschaften, den Wirtschaftswissenschaften, den Alten Kulturen und den Geschichtswissenschaften. Mit einem Finanzvolumen von knapp zwei Millionen Euro förderte die DFG allein in den letzten Jahren ein Dutzend Projekte mit Beteiligung Jekaterinburger Hochschulen und Forschungsinstitutionen, wie z.B. dem Institut für Geschichte und Archäologie, dem Institut für Metallphysik und dem Institut für Physik und Angewandte Mathematik der Föderalen Universität.

Neue Perspektiven der Zusammenarbeit ergeben sich im Zuge der aktuellen Reformen der russischen Hochschullandschaft. Ich bin sicher: Ihre neue Föderale Universität in Jekaterinburg wird ein starker Kooperationspartner für Deutschland sein. Sie wissen vermutlich, dass auch durch die sogenannte „Exzellenzinitiative" in Deutschland zahlreiche neue Cluster und Forschungszentren an Universitäten geboren werden, die starkes Interesse an einer Zusammenarbeit mit Russland bekunden. Und viele Vertreter deutscher Hochschulen und Wissenschaftsorganisationen sind extra für diese Woche angereist.

Meine Damen und Herren, lassen Sie uns daher diese Tage in Jekaterinburg nutzen, um unseren Kooperationen eine neue Qualität zu verleihen. Ich denke, wir dürfen gespannt sein, wie es gemeinsam weiter geht, eines ist jedoch sicher, dass der Standort Jekaterinburg auch über das Deutschlandjahr hinaus im Fokus der DFG bleiben wird, denn es ist uns ein besonderes Anliegen die institutionelle Kooperation mit den hiesigen Partnern auszubauen. Ich wünsche Ihnen und uns allen eine erfolgreiche 2. Deutsch-Russische Woche des Jungen Wissenschaftlers und hoffe sehr, dass wir im nächsten Jahr gemeinsam die dritte Woche begehen können.

Уважаемый господин Кокшаров,
уважаемый господин Чарушин,
уважаемый господин Харлов,
уважаемая госпожа Шимкорайт,
дорогой господин Щеглов,
мой дорогой коллега Макс Хубер,
уважаемые дамы и господа!

Я очень рад, что вы поддержали совместную инициативу Германской службы академических обменов и Немецкого научно-исследовательского сообщества и приняли участие во II Российско-германской неделе молодого ученого в Екатеринбурге!

Я сделал акцент на слове «второй», потому что ровно год назад я и мой коллега Макс Хубер вместе дали старт I Неделе молодого ученого в Казани. В связи с проведением Российско-германского Года образования, науки и инноваций у нас возникла новая идея – предоставить молодым ученым наших стран возможность обмена опытом в рамках форума, на котором они смогут рассказать о своих достижениях и услышать доклады более опытных коллег. В начале пути мы надеялись на то, что наша идея получит дальнейшее развитие, и что мы сможем проводить подобные конференции на самые разные темы ежегодно в разных городах страны.
Сегодняшний день говорит об успешности нашего предприятия. И я хочу от всей души поздравить всех организаторов и участников встречи в Екатеринбурге с этим успехом и сказать вам всем слова благодарности! Уважаемые дамы и господа, благодаря усилиям каждого из вас история нашей конференции продолжается.
Я лично очень рад быть здесь сегодня, потому что мне впервые удалось посетить Екатеринбург в качестве вице-президента Немецкого научно-исследовательского сообщества. Екатеринбург известен далеко за пределами России и вызывает большой интерес. Здесь уместно вспомнить Бориса Ельцина, имя которого носит ваш университет, дорогой господин Кокшаров, а также Якова Свердлова, чье имя некогда носил сам город, – человека, причастного к смерти царя Николая II и его семьи.

Однако в историю возникновения вашего города вписаны и мы, немцы, бывшие некогда его покровителями. Ближайший соратник Петра Великого Георг Вильгельм де Геннин, имевший немецкие корни, считается одним из основателей Екатеринбурга (1723 год). И хотя ваш город был назван не в честь Екатерины Великой, а в честь Екатерины I, она тоже была немецкого происхождения и впервые дала Екатеринбургу право называться городом, а в 1781 году сделала его центром губернии.

Есть еще множество вещей, которые мы, немцы, связываем с историей вашего города. Позвольте мне как историку напомнить вам о большой экспедиции Александра фон Гумбольдта в Россию в 1829 году. Гумбольдту не только невероятно повезло, потому что он впервые нашел в Старом Свете алмазы, ему также удалось определить границу между Азией и Европой. Екатеринбург и сегодня имеет огромное значение как окно в Азию и транспортный узел региона. Я прилетел к вам на самолете, но между Берлином и Екатеринбургом есть прямое железнодорожное сообщение.

Мы хотим использовать уникальное местоположение Екатеринбурга и его посредническую функцию для налаживания обмена идеями по актуальным для наших стран вопросам, для укрепления научных контактов между Европой и Азией. В эти дни мы будем обсуждать глобальные проблемы исследований в области здоровья, эффективно решать которые наши страны могут только сообща. То, что особое внимание необходимо обратить именно на молодежь, не подлежит сомнению. Через несколько лет молодые ученые самостоятельно продолжат начатые сегодня исследования, будут сами принимать решения и нести ответственность за них. Я считаю, что эта Неделя в Екатеринбурге является идеальной платформой для развития интенсивных научных контактов и появления будущих совместных проектов.

«Германия и Россия: вместе строим будущее» – так звучит девиз года Германии в России (2012–2013 г.). И мы надеемся, что наше мероприятие сделает этот год еще интереснее, ведь девиз Года Германии в России отражает основную идею Недели молодого ученого. Без молодежи нет будущего ни для науки, ни для остальных сфер жизни общества.
Проводя Неделю молодого ученого, мы преследуем две стратегические цели: во-

первых, в ходе презентации результатов современных исследований и налаживания научных контактов затрагиваются важные моменты двустороннего сотрудничества; во-вторых, Екатеринбург как место проведения встречи получает возможность упрочить отношения с региональными научными центрами России, это очень важно, потому что здесь на высоком уровне ведутся исследования, представляющие интерес для Германии. Хотелось бы подчеркнуть, что именно значение Екатеринбурга как научного центра стало решающим фактором при выборе места встречи ученых России и Германии. Я от всей души поздравляю вас с этим, господин Чарушин! В этом году вы в качестве председателя УрО РАН отмечаете 25-летний юбилей Уральского отделения. На сегодняшний день в состав отделения входят 45 научно-исследовательских институтов, самые первые из них были открыты еще 80 лет назад. На момент возникновения УрО РАН Немецкое научно-исследовательское сообщество, а точнее его организация-предшественник, уже имела крепкие связи с РАН.

Позвольте мне сказать несколько слов о Немецком научно-исследовательском сообществе (DFG). На сегодняшний день оно является самой значимой организацией в Европе, поддерживающей научные исследования. Наш годовой бюджет составляет 2,5 миллиарда евро. Такие средства мы вкладываем в развитие фундаментальной науки в вузах и научных институтах. В международной деятельности DFG Россия играет ведущую роль, поскольку с 2003 года у нас существует представительство в Москве. В 1970 году мы подписали соглашение с Российской академией наук, чтобы упрочить научные контакты между нашими странами.

Сегодня группы немецких и российских ученых вместе работают над совместными проектами нашей организации по всей стране: от Калининграда до Владивостока, от Северного Кавказа до Кольского полуострова. Только за последние три года DFG профинансировало более

«ГЕРМАНИЯ И РОССИЯ: ВМЕСТЕ СТРОИМ БУДУЩЕЕ» – ТАК ЗВУЧИТ ДЕВИЗ ГОДА ГЕРМАНИИ В РОССИИ (2012–2013 Г.)

300 проектов с участием российских ученых. Среди них: проекты на Урале по таким направлениям как физика, химия, математика, а также зоология, материаловедение, экономические науки, история и древние культуры. Объем средств, выделенных DFG только за последние годы на дюжину проектов с участием вузов и научных институтов Екатеринбурга, например, Института истории и археологии УрО РАН, Института физики металлов УрО РАН, а также НИИ физики и прикладной математики УрФУ, составил почти два миллиона евро.

Реформирование вузовского ландшафта России открывает новые перспективы для сотрудничества. И я уверен: Уральский федеральный университет в Екатеринбурге будет сильным партнером для Германии. Вы, вероятно, знаете, что, благодаря инициативе поддержки элитарной науки, сегодня на базе университетов Германии появляются новые научно-исследовательские кластеры и центры, которые очень заинтересованы в сотрудничестве с Россией. Для участия в Неделе молодого ученого в Россию специально приехали представители многих немецких вузов и научных организаций.

Дамы и господа, давайте проведем предстоящую Неделю с пользой и поднимем наше сотрудничество на качественно новый уровень. Всем нам интересно, как оно будет развиваться в дальнейшем, но в одном я уверен: Екатеринбург останется в фокусе внимания DFG и по окончании Года Германии в России мы и в дальнейшем будем стремиться к расширению институциональных связей с местными партнерами. Я желаю вам и всем нам плодотворной II российско-германской недели молодого ученого и очень надеюсь на то, что в следующем году мы снова встретимся на открытии уже третьей Недели.

Sehr geehrter Rektor Professor Kokscharow, verehrte Generalkonsulin Frau Dr. Schimkoreit, werte Kollegen und vor allem liebe junge Wissenschaftler und Gäste,

PROF. (EM.) MAX HUBER
Ex-Vizepräsident des Deutschen Akademischen Austauchdienstes

ПРОФ. Д-Р МАКС ХУБЕР
экс-вице-президент ДААД

einige von Ihnen kennen mich vielleicht bereits, anderen darf ich mich kurz vorstellen: Mein Name ist Max Huber und ich bin der ehemalige Vizepräsident des DAAD. Während meiner Amtszeiten und langjährigen Tätigkeit in dieser größten europäischen, eigentlich weltweit größten Organisation, auf die ich zurückblicken kann, habe ich viele Länder und Hochschulen besucht, und mit vielen Rektoren und sehr vielen Wissenschaftlern und Studenten einen regen Gedankenaustausch gepflegt, weltweit und natürlich auch in Russland.

Im vergangenen Jahr habe ich die Erste Deutsch-Russische Woche in Kasan eröffnen können, und daher freue ich mich heute sehr, auch die 2. Deutsch-Russische Woche des jungen Wissenschaftlers eröffnen zu können. Hier an der größten Universität des Uralgebietes, dem Scheidepunkt zwischen Europa und Asien, an einer Universität, deren Bedeutung auch bei uns in Deutschland immer mehr wahrgenommen und erkannt wird.

Persönlich freue ich mich darüber, zum ersten Male in dieser geschichtsträchtigen und gleichzeitig doch jungen Stadt sein zu können, die in Deutschland als die große Stadt der Industrie, des Handels und der Wissenschaft bekannt ist. Denn neben zahlreichen Hochschulen ist hier in Jekaterinburg auch der Sitz der Uraler Abteilung der Russischen Akademie der Wissenschaften. Wir kennen Jekaterinburg als die Stadt der Montanindustrie, als das industrielle Herz Russlands, und wir verstehen auch, sehr geehrter Herr Rektor Kokscharow, welche große und verantwortungsvolle Aufgabe Ihnen und Ihrer Föderalen Universität zugedacht worden ist, um vor allem die wirtschaftliche Entwicklung von Stadt und Region weiter voranzubringen, und Innovationen auf den Weg zu bringen. Sie leisten einen substantiellen Beitrag im Rahmen der industriellen und wirtschaftlichen Erneuerung Ihres Landes, und das wollen wir mit Respekt und Anerkennung würdigen.

Jekaterinburg ist eine junge Stadt, und daher haben wir uns dazu entschlossen, sie als Ort für unsere Konferenz auszuwählen. Junge russische und junge deutsche Wissenschaftler, kommen unter Mitwirkung erfahrener Wissenschaftler beider Länder zu einem Gedankenaustausch zu einem hochaktuellen Thema zusammen, denn „Gesundheit und Gesellschaft“ betrifft uns ja alle.
Die Gesundheit im ärztlichen Sinne betrifft uns persönlich immer und überall, die Gesundheit einer Gesellschaft entscheidet über ihre Zukunft, und die Zukunft gehört den jungen Leuten.
Es ist also nur folgerichtig, dass diese sich zu diesem Thema äußern sollen.

Die damals junge Sowjetunion hatte gerade in dieser Stadt in den 1920er Jahren Hochschulen gegründet, um damit ein Zeichen für den Aufbruch in eine neue

JUGEND, GESUNDHEIT, KREATIVITÄT SIND WICHTIGE KOMPONENTEN, DIE WIR FÜR UNSERE ARBEIT, UND DAMIT AUCH UNSERE ZUKUNFT BRAUCHEN. JUNGE WISSENSCHAFTLER DISKUTIEREN ÜBER PROBLEME VON MORGEN UND FINDEN LÖSUNGEN.

Zeit zu setzen. Die Zusammenlegung der beiden größten Universitäten hier in Jekaterinburg 2010 zu einer gemeinsamen Einrichtung ist ein weiteres Zeichen eines Aufbruchs in eine neue Zeit.

Jugend, Gesundheit, Kreativität sind wichtige Komponenten, die wir für unsere Arbeit, und damit auch unsere Zukunft brauchen. Junge Wissenschaftler diskutieren über Probleme von morgen und finden Lösungen.
Aus Freiburg und Münster, aus Berlin und Tübingen, aus München und Göttingen kommen die jungen deutschen Wissenschaftler - ihre russischen Kolleginnen und Kollegen kommen aus allen Teilen dieses großen Landes, aus Moskau und Petersburg, aus Archangelsk im Norden, und aus Naltschik im Kaukasus, aus dem Fernen Osten und aus Sibirien, von der Wolga und natürlich aus Jekaterinburg selbst.

Das partnerschaftliche Miteinander, das zwischen Deutschland und Russland im Großen in der Modernisierungspartnerschaft und der Strategischen Partnerschaft zu finden ist, spiegelt sich hier konkret in dieser Konferenz wider.
Das ist einer der zentralen Inhalte des Deutschen Hauses für Wissenschaft und Innovation in Moskau, eine Plattform für den deutsch-russischen Wissenschaftsdiskurs bereit zu stellen.

EIN GROSSER ANTEIL DER MEHR ALS 60.000 FÖRDERUNGEN DES DAAD PRO JAHR GEHT IN BILATERALE, PARTNERSCHAFTLICHE KONZEPTIONELLE PROJEKTE.

Der DAAD ist in seiner Arbeit, neben der Vergabe individueller Stipendien, ganz wesentlich auf partnerschaftliche Förderung orientiert und damit in Europa konzeptionell führend. Ein großer Anteil der mehr als 60.000 Förderungen des DAAD pro Jahr geht in bilaterale, partnerschaftliche konzeptionelle Projekte.

Die Pflege des wissenschaftlichen Nachwuchses, künftiger Forscher und Hochschullehrer, ist uns ein großes Anliegen. So haben wir mit Russland seit 2003 konsequent gemeinsam finanzierte Programme ausgebaut:

Das Lomonossow- und das Kant-Programm mit dem Russischen Bildungsministerium, drei Programme mit den Staatlichen Universitäten Moskau, der Gubkin-Universität Moskau und der Staatlichen Universität St. Petersburg und zwei mit der Republik Tatarstan. Diese Programme gelten als beispielgebend und sind leuchtende Orientierungspunkte gelungener akademischer Kooperation zwischen unseren Ländern.

2012/2013 ist das Jahr Deutschlands in Russland und gleichzeitig das Jahr Russlands in Deutschland. Zwar werden hierbei vor allem kulturelle Akzente gesetzt, aber Wissenschaft ist letztlich auch ein Teil menschlicher Kultur im weiteren Sinne.
Unter diesem Aspekt verstehen wir diese Veranstaltung somit auch als einen substantiellen Beitrag zum gemeinsamen Deutsch-Russischen Jahr.
Lassen Sie mich allen, die am Zustandekommen dieser Konferenz mitgewirkt haben und noch mitwirken werden, meinen Dank aussprechen, ganz besonders aber Ihnen, Herr Rektor Kokscharow, für Ihre akademische Unterstützung unserer Veranstaltung.

Ihnen allen wünsche ich gute Gespräche; aber auch eine ruhige Minute, die Sehenswürdigkeiten dieser Stadt zu betrachten. Jekaterinburg ist eine Reise wert.
Ich danke Ihnen!

Уважаемый господин ректор,
профессор Кокшаров,
уважаемая госпожа генеральный консул, доктор Шимкорайт,
дорогие коллеги и, самое главное,
дорогие молодые ученые и гости конференции!

Возможно, некоторые из вас уже знают меня, но я все же представлюсь: меня зовут Макс Хубер, я бывший вице-президент Германской службы академических обменов (DAAD). В качестве вице-президента DAAD, за долгие годы работы в этой крупнейшей европейской, да и, пожалуй, мировой организации в сфере образования и науки, я посетил с визитами многие страны и вузы, наладил диалог с их ректорами, с молодыми учеными и студентами. Я говорю сейчас, в том числе, и о России. В прошлом году я принимал участие в торжественном открытии I Российско-германской недели молодого ученого в Казани, и потому я особенно рад присутствовать сегодня на открытии II недели. Проходит она в месте, где встречаются Европа и Азия, в стенах крупнейшего университета Урала, значение которого для развития науки становится все более очевидным для Германии.

Я очень рад впервые оказаться в этом очень молодом, но уже сыгравшем важную роль в истории, городе, который в представлении немцев неразрывно связан с развитием промышленности, торговли и, конечно, науки. Ведь именно здесь, в Екатеринбурге, находится Уральское отделение РАН. Екатеринбург для нас – центр тяжелой промышленности, индустриальное сердце России, мы хорошо понимаем, уважаемый господин ректор, какая ответственная задача лежит на вас и Федеральном университете, и заключается она в поддержании уровня экономического развития города и региона, во внедрении в производство инноваций. Вы и ваш университет вносите существенный вклад в модернизацию промышленности и экономики страны, и мы уважаем ваш труд.

Екатеринбург – молодой город, именно потому мы решили выбрать его местом проведения нашей конференции.
В ходе конференции, тема которой – «Здоровье и общество» – очень актуальна сегодня и касается каждого из нас, молодые российские и немецкие ученые под руководством своих старших и более опытных коллег из России и Германии смогут обменяться знаниями и идеями.

МОЛОДОСТЬ, ЗДОРОВЬЕ, ТВОРЧЕСКИЙ ДУХ – ВАЖНЕЙШИЕ КОМПОНЕНТЫ, КОТОРЫЕ НУЖНЫ НАМ В РАБОТЕ, КАК СЕГОДНЯ, ТАК И В БУДУЩЕМ

С вопросами собственного здоровья мы сталкиваемся на каждом шагу, здоровье общества определяет его будущее, а будущее всегда за молодежью. И потому мне кажется закономерным, что именно молодежь сегодня и будет обсуждать проблемы здоровья.

В 20-е годы XX века, тогда еще молодое советское государство стало создавать в этом городе вузы, чтобы с их помощью осуществить прорыв в новое время. Состоявшееся в 2010 году объединение двух крупнейших университетов Екатеринбурга – следующий шаг на пути перемен.

Молодость, здоровье, творческий дух – важнейшие компоненты, которые нужны нам в работе, как сегодня, так и в будущем. Молодые ученые обсуждают проблемы завтрашнего дня и находят их решение.

Здесь собрались молодые немецкие ученые из Фрайбурга и Мюнстера, Берлина и Тюбингена, Мюнхена и Гёттингена; их российские коллеги приехали со всех концов большой страны, из Москвы и Петербурга, из северного города Архангельска и кавказского Нальчика, с Дальнего Востока и из Сибири, из Поволжья и, конечно же, самого Екатеринбурга.
Тот самых дух сотрудничества, объединивший Германию и Россию как стратегических партнеров, работающих на модернизацию двух стран, царит и на этой конференции.

Одна из основных задач Германского дома науки и инноваций в Москве – создать платформу для развития немецко-российского научного дискурса. Германская служба академических обменов, предоставляющая ученым индивидуальные стипендии, также много работает в направлении укрепления сотрудничества. Концепция ее работы в данной сфере является ведущей в Ев-

ропе. Значительная часть более 60 000 поддерживаемых DAAD проектов – это именно двустороннее сотрудничество. Забота о научных кадрах, воспитание молодых исследователей и педагогов вузов – наша важная задача. С 2003 года мы последовательно создали следующие финансируемые немецкой и российской сторонами совместные программы:

Программа «Михаил Ломоносов» и программа «Иммануил Кант» совместно с Министерством образования и науки РФ; три программы совместно с Московским государственным университетом, Российским государственным университетом нефти и газа им. Губкина (Москва) и Санкт-Петербургским государственным университетом, две программы в сотрудничестве с Республикой Татарстан. Все эти программы являются примерами успешного сотрудничества в академической сфере между нашими двумя странами.

ЗНАЧИТЕЛЬНАЯ ЧАСТЬ БОЛЕЕ ЧЕМ 60 000 ПОДДЕРЖИВАЕМЫХ DAAD ПРОЕКТОВ – ЭТО ИМЕННО ДВУСТОРОННЕЕ СОТРУДНИЧЕСТВО.

2012/2013 – Год Германии в России и одновременно Год России в Германии. Основной акцент делается на сферу культуры, но мы можем считать науку одной из областей человеческой культуры в широком смысле слова. А потому наша конференция – еще одно важное мероприятие в рамках совместного немецко-российского года.

Позвольте мне выразить благодарность всем тем, кто принимал и будет принимать участие в организации этой конференции, в первую очередь ректору, господину Кокшарову, за академическую поддержку нашего мероприятия.
Я желаю вам интересной работы, но и прошу вас не забывать об отдыхе, о том, что в Екатеринбурге есть много всего интересного.

Спасибо за внимание!

Уважаемые участники и гости мероприятия!

ALEKSANDR SHCHEGLOV

Vorsitzender des Rates des Verbandes Junger Wissenschaftler in Russland

АЛЕКСАНДР ЩЕГЛОВ

председатель совета Российского союза молодых ученых

Прежде всего хочу поприветствовать всех собравшихся от имени Российского союза молодых ученых (РоСМУ) – общероссийской общественной организации, объединяющей молодых исследователей, инженеров и преподавателей из различных регионов страны. Приятно отметить, что РоСМУ выступает одним из организаторов открывающегося сегодня мероприятия.

Российско-германская неделя молодого ученого проводится уже во второй раз. Это позволяет говорить о формировании новой традиции в отношениях России и Германии, способствующей развитию взаимодействия, обмену опытом, установлению профессиональных контактов и расширению сотрудничества между молодыми учеными наших стран.

Тема «Общество и здоровье», выбранная для мероприятия в 2012 году, является крайне актуальной, так как задачи укрепления здоровья населения и профилактики заболеваний являются крайне важными для успешного социально-экономического развития любой страны. Именно поэтому со стороны органов государственной власти должно уделяться особое внимание вопросам развития здравоохранения и совершенствованию деятельности учреждений данной сферы. Вместе с тем немаловажная роль в решении подобных задач отводится представителям научного сообщества, которые способны разработать новые методы лечения и профилактики заболеваний, улучшив тем самым состояние здоровья населения в стране.

В августе 2012 года агентство Блумберг (Bloomberg) опубликовало рейтинг стран по состоянию здоровья их жителей. При подготовке рейтинга, в котором участвовали государства с численностью населения свыше 1 миллиона человек, использовались данные Всемирной организации здравоохранения, Организации Объединенных Наций и Всемирного банка. По итогам ранжирования в списке стран Германия оказалась на 10-м месте, а Россия – на 97-м, расположившись по соседству с Восточным Тимором и Ираком. Сложности, существующие в российской сфере здравоохранения, заметны и внутри страны. В частности, по результатам исследования, представленного Всероссийским центром изучения общественного мнения (ВЦИОМ) в июле 2012 года, среди главных проблем государства была выделена и ситуация в сфере здравоохранения, которую отметили 37% опрошенных.

Причины, которые привели к подобной ситуации в российском здравоохранении, носят комплексный характер. Среди наиболее значимых из них эксперты выделяют хроническое недофинансирование и несовершенство реформ, проводимых в отрасли. В этой связи недавние преобразования в правительстве России и создание в его составе отдельного Министерства здравоохранения Российской Федерации позволяют надеяться, что необходимые меры на государственном уровне, направленные на решение существующих проблем, будут разработаны и реализованы в ближайшей перспективе.

Вероятно, что определенные сложности (хотя и не носящие столь значимый характер как в России) имеют место и в сфере здравоохранения Германии. В этой связи представители научного сообщества наших стран могут внести свой вклад в преодоление существующих негативных явлений, разработав и предложив как более эффективные методы лечения и профилактики заболеваний, так и способы совершенствования законодательства и оптимизации системы управления здравоохранением. Поэтому II Российско-германская неделя молодого ученого «Общество и здоровье», участники которой в рамках тематических научных секций и круглых столов смогут представить свои проекты и научные исследования, обсудить наиболее острые проблемы медицины и здравоохранения в междисциплинарном контексте, является значимым событием. Уверен, что данное мероприятие придаст дополнительный импульс развитию сотрудничества молодых ученых наших стран, которое будет носить взаимовыгодный характер.

В заключение хочу пожелать участникам и гостям II российско-германской недели молодого ученого «Общество и здоровье» успешной работы, плодотворных дискуссий, новых научных свершений и, конечно, крепкого здоровья.

Meine sehr geehrten Damen und Herren, Teilnehmer und Gäste der Konferenz!

Als Erstes möchte ich Sie alle im Namen des Verbandes Junger Wissenschaftler in Russland (RoSMU) begrüßen, einer gesellschaftlichen Organisation, die junge Forscher, Ingenieure und Hochschullehrer aus verschiedenen Teilen unseres Landes vereinigt. Wir freuen uns ganz besonders, einer der Veranstalter dieser Konferenz zu sein.

Die Deutsch-Russische Woche des Jungen Wissenschaftlers findet bereits zum zweiten Mal statt. In diesem Zusammenhang kann man von einer neuen Tradition in den deutsch-russischen Beziehungen sprechen, die unsere Zusammenarbeit voranbringt, uns einen Erfahrungsaustausch ermöglicht und junge Wissenschaftler unserer Länder auf diesem Forum zusammenführt.

Das Thema „Gesundheit und Gesellschaft", dem die Veranstaltung 2012 gewidmet ist, ist hochaktuell, denn Gesundheitsförderung und Krankheitsvorbeugung sind besonders wichtige Faktoren für die soziale und wirtschaftliche Entwicklung jedes Landes. Darum sollte jeder Staat solchen Fragen wie Entwicklung des Gesundheitswesens und Verbesserung der medizinischen Versorgung der Bevölkerung besondere Aufmerksamkeit schenken. Die Wissenschaftsgemeinde hat dabei eine wichtige Aufgabe zu erfüllen: Neue Behandlungs- und Vorbeugungsmethoden zu entwickeln und den Gesundheitszustand der Bevölkerung zu verbessern.

Im August 2012 hat die Agentur Bloomberg ein Ranking der Länder nach dem Gesundheitszustand ihrer Bevölkerung veröffentlicht. Daran nahmen Länder mit Bevölkerungszahl über eine Million Menschen teil, man benutzte die Angaben der WHO, UNO und der Weltbank. Laut Ergebnissen dieses Rankings belegt Deutschland Platz 10, Russland ist auf Platz 97 neben Osttimor und dem Irak. Schwierigkeiten im Bereich Gesundheitswesen sind innerhalb des Landes spürbar. Die Ergebnisse einer Untersuchung des Russischen Zentrums zur Erforschung der öffentlichen Meinung (WZIOM) im Juli 2012 zeigen, dass Probleme im Bereich Gesundheitswesen von 37% der Befragten unter den wichtigsten Problemen im Land genannt worden sind.
Die heutige Situation im Gesundheitswesen Russlands ist auf komplexe Gründe zurückzuführen. Experten deuten auf die wichtigsten davon hin – auf Mangelfinanzierung und unzureichende Reformen in der Branche. In dieser Hinsicht geben uns die neuesten Veränderungen in der russischen Regierung, vor allem die Gründung eines separaten Gesundheitsministeriums, die Hoffnung, dass es in der nächsten Zeit entsprechende Entscheidungen auf der Staatsebene entwickelt und getroffen werden.

DIE DEUTSCH-RUSSISCHE WOCHE DES JUNGEN WISSENSCHAFTLERS FINDET BEREITS ZUM ZWEITEN MAL STATT. IN DIESEM ZUSAMMENHANG KANN MAN VON EINER NEUEN TRADITION IN DEN DEUTSCH-RUSSISCHEN BEZIEHUNGEN SPRECHEN, DIE UNSERE ZUSAMMENARBEIT VORANBRINGT.

Wahrscheinlich werden sich auch im deutschen Gesundheitssystem einige Schwierigkeiten finden lassen, die im Unterschied zu Russland aber keine entscheidende Rolle für das System spielen. Die Vertreter der Wissenschaftsgemeinden unserer beiden Länder können im Laufe dieser Konferenz ihren Beitrag zur Beseitigung der negativen Erscheinungen leisten, indem sie neue wirkungsvolle Behandlungs- und Vorbeugungsmethoden entwickeln und präsentieren und Vorschläge zur Verbesserung der Gesetzgebung und Optimierung der Verwaltung über das Gesundheitssystem machen. Aus diesem Grund ist die 2. Deutsch-Russische Woche des jungen Wissenschaftlers zum Thema „Gesundheit und Gesellschaft", deren Teilnehmer ihre Projekte und Forschungsergebnisse im Rahmen der Sektionssitzungen und runder Tische präsentieren und heiße Fragen im Bereich Medizin und Gesundheitswesen im fachübergreifenden Kontext besprechen können, ein für uns alle bedeutendes Ereignis. Ich bin sicher, dass die heutige Veranstaltung der Zusammenarbeit junger deutscher und russischer Wissenschaftler zugunsten beider Länder einen zusätzlichen Impuls geben wird.

Zum Schluss wünsche ich allen Teilnehmern und Gästen der 2. Deutsch-Russischen Woche des jungen Wissenschaftlers zum Thema „Gesundheit und Gesellschaft" viel Erfolg bei der Arbeit, gute Gespräche, neue Entdeckungen und natürlich auch eiserne Gesundheit.

KARSTEN HEINZ

Ehrenprofessor der Staatlichen Universität Uljanowsk

Botschaftsrat

Leiter des Referats Wissenschaft und Bildung

Deutsche Botschaft Moskau

КАРСТЕН ХАЙНЦ

Почетный профессор УлГУ,

Советник посольства,

Руководитель отдела науки и образования

Посольства ФРГ в Москве

Liebe Leserinnen und Leser,

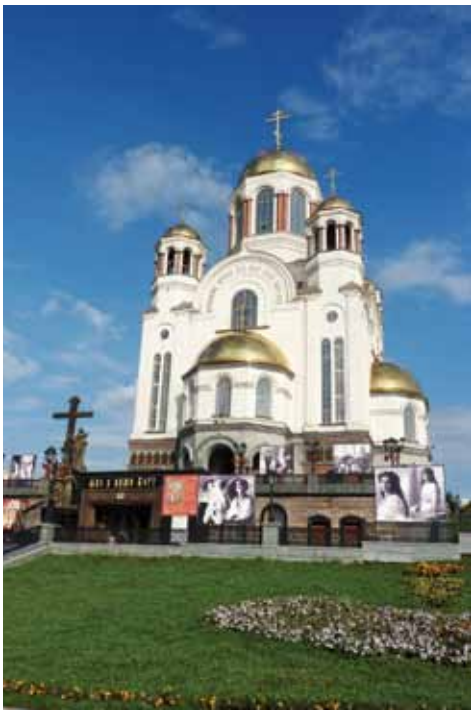
das im Mai 2012 zu Ende gegangene Deutsch-Russische Jahr der Bildung, Wissenschaft und Innovation hat mit dem seit Juni 2012 laufenden Deutschland-Jahr in Russland seine Fortsetzung gefunden. Im Rahmen dieser Jahre sind eine Vielzahl neuer Projekte und Initiativen deutsch-russischer Wissenschaftskooperation lanciert worden.

Dazu gehören auch die jährlich stattfindenden Wochen des jungen Wissenschaftlers des Deutschen Wissenschafts- und Innovationshauses (DWIH), veranstaltet durch den Deutschen Akademischen Austauschdienst (DAAD) und die Deutsche Forschungsgemeinschaft (DFG) in Kooperation mit exzellenten Partnern der russischen und deutschen Bildungs- und Forschungslandschaft. Für diese Initiative ist beiden Wissenschaftsorganisationen herzlich zu danken. Die erste Veranstaltung dieser Art im September 2011 in Kasan wurde fortgesetzt mit der Wissenschaftswoche zur Gesundheitsforschung im September 2012 in Jekaterinburg, deren Ergebnisse nun als Broschüre vorliegen.

Intensive Kontakte zwischen deutschen und russischen Nachwuchswissenschaftlern sind für die Zukunft der bilateralen Wissenschaftsbeziehungen von entscheidender Bedeutung. Die Wochen des jungen Wissenschaftlers machen einmal mehr deutlich, dass das Potenzial für den weiteren Ausbau der deutsch-russischen Forschungskooperation weiter wächst und dass es sich lohnt, unsere Nachwuchsforscher im Sinne einer gemeinsamen Elitenförderung zusammenzuführen. Solche Foren sind auch Denkfabriken für gemeinsame Projekte und Initiativen von morgen.

Dies gilt angesichts neuer staatlicher Initiativen zur stärkeren Internationalisierung von Forschung in Russland und Deutschland um so mehr. Dabei ist vor allem an das Megagrant-Programm zur Schaffung von Forschungslabors an russischen Hochschulen unter Einbindung international ausgewiesener Hochschullehrer sowie das in Planung befindliche akademische Austauschprogramm „Global Education" des Russischen Ministeriums für Bildung und Wissenschaft zu denken. Auf deutsche Initiative geht das neue deutsch-russische DAAD-Stipendienprogramm „Russland in der Praxis" zurück, mit dem deutsche Studierende studienbezogene Praktika in Firmen in Russland absolvieren können. Damit werden länderübergreifend auch die Beziehungen zwischen Hochschule und Wirtschaft gestärkt.

DIE WOCHEN DES JUNGEN WISSENSCHAFTLERS MACHEN EINMAL MEHR DEUTLICH, DASS DAS POTENZIAL FÜR DEN WEITEREN AUSBAU DER DEUTSCH-RUSSISCHEN FORSCHUNGSKOOPERATION WEITER WÄCHST UND DASS ES SICH LOHNT, UNSERE NACHWUCHSFORSCHER IM SINNE EINER GEMEINSAMEN ELITENFÖRDERUNG ZUSAMMENZUFÜHREN.



Die deutsch-russischen Wochen junger Wissenschaftler bieten ein neues wissenschaftliches Diskussionsforum für deutsche und russische Nachwuchswissenschaftler mit ausgewiesenen und erfahrenen Forschern aus beiden Ländern. Damit wird der akademische Austausch um ein weiteres wichtiges Element ergänzt. Für das Forum mussten sich die Nachwuchswissenschaftler selbst bewerben. Für die zweite Wissenschaftswoche waren es bereits wesentlich mehr talentierte junge Forscher als im Vorjahr, die sich daran beteiligen wollten. Hier entsteht Wettbewerb. Das ist ein sichtbares Zeichen für die Attraktivität des Formats und das große gegenseitige Interesse an der bilateralen Forschungskooperation. Lassen Sie sich überraschen von den interessanten Forschungsthemen der jungen Wissenschaftler und den Ergebnissen der Arbeiten, die in diesem Heft veröffentlicht werden.

Die Veranstaltung in einer russischen Region belegt auch, dass die Idee des Aufbaus eines DWIH in Russland funktioniert und dass dieses Haus wichtige Impulse für die Vernetzung der russischen und deutschen Wissenschaftslandschaft geben kann. Noch existiert es zwar lediglich virtuell, aber in den nächsten Jahren wird es gelingen, die deutschen Wissenschaftsorganisationen weitgehend unter einem Dach in Moskau zu vereinen. Das wird die Verbindungen zwischen den Wissenschaftsgemeinschaften beider Länder weiter stärken. Bis dahin werden verschiedenste Veranstaltungsformate des DWIH, ich denke dabei an Wissenschaftsgespräche mit führenden Vertretern aus Wissenschaft, Wirtschaft und Politik und deutsch-russische Wissenschaftswochen in den russischen Regionen, zu einer Intensivierung der bilateralen Wissenschaftsbeziehungen beitragen. Mit diesen Aktivitäten ist das DWIH bereits jetzt ein wichtiger Faktor für die Umsetzung der Außenwissenschaftsinitiative des des Außenamtes, der Interantionalisierungsstrategie des BMBF und der strategischen Partnerschaft in Bildung, Forschung und Innovation, die Russland und Deutschland miteinander verbindet.

Wir wollen diesen Weg fortsetzen. Das kann und wird uns nur gelingen, wenn sich junge Wissenschaftler beider Länder für die Forschung ihrer Kollegen im jeweils anderen Land interessieren. Damit wird eine junge deutsch-russische Wissenschaftsgemeinschaft gestärkt, die in einigen Jahren die Geschicke der bilateralen Forschungszusammenarbeit lenken wird.

Дорогие читатели,

завершившийся в мае 2012 года Российско-германский Год образования, науки и инноваций уже в июне 2012 года плавно перешел в перекрестный Год Германии в России. В течение этих двух лет был дан старт множеству новых совместных проектов и инициатив в области науки. К ним, безусловно, относится ставшая ежегодной Неделя молодого ученого Германского дома науки и инноваций (DWIH), которую проводят Германская служба академических обменов (DAAD) и Немецкое научно-исследовательское сообщество (DFG) совместно со своими партнерами – элитарными российскими и немецкими учебными и научными учреждениями. Мы сердечно благодарим DAAD и DFG за поддержку этой инициативы. Первая неделя молодого ученого прошла в сентябре 2011 года в Казани, вторая состоялась в сентябре 2012 года в Екатеринбурге и была посвящена проблемам здоровья общества, ее результаты отражены в этой брошюре.

Интенсивные контакты между молодыми учеными наших стран имеют решающее значение в развитии германо-российского научного сотрудничества в будущем. Результаты проведения Недели молодого ученого показывают, что потенциал научного сотрудничества между Россией и Германией постоянно растет, и что необходимо привлекать молодежь для проведения научных исследований на высшем уровне. Подобные форумы дают импульс для создания совместных проектов будущего. Особенно сегодня, когда правительства России и Германии предлагают новые инициативы по еще большей интернационализации науки двух стран. Прежде всего, я имею в виду программу мегагрантов правительства РФ, которая помогает созданию научных лабораторий при российских вузах, к работе в которых привлекаются выдающиеся преподаватели и специалисты из других стран, а также находящуюся в разработке программу академического обмена «Global Education» Министерства образования и науки РФ. Германия, в свою очередь, предлагает новую немецко-российскую стипендиальную программу ДААД «Россия на практике» (Russland in der Praxis), которая дает немецким студентам возможность проходить практику в российских компаниях. Данная инициатива также способствует укреплению отношений между вузами и представителями бизнеса обеих стран.

Российско-германская неделя молодого ученого стала новым форумом для научных дискуссий между молодыми учеными из Германии и России и их старшими известными и опытными коллегами. Эта конференция – важная часть программы академического обмена между двумя странами. Для участия в форуме молодые ученые самостоятельно подавали заявки в оргкомитет. Заявку на участие во II Неделе подали гораздо больше талантливых молодых исследователей, чем в прошлом году. Именно так и рождается конкуренция, которая свидетельствует о привлекательности данного формата работы и серьезной заинтересованности двух стран в совместной научной деятельности. Мы уверены, что темы исследований и достижения молодых ученых наших стран удивят вас, подробную информацию о них вы найдете в данной брошюре.

Подобные мероприятия в регионах говорят о том, что идея создания в России Германского дома науки и инноваций (DWIH) была удачной, что DWIH действительно дает важный толчок для расширения взаимоотношений между вузами и институтами двух стран. Пока Германский дом науки и инноваций существует скорее виртуально, но в последующие годы мы планируем объединить представительства организаций немецкой науки под одной крышей в Москве. И это еще больше укрепит научные контакты между нашими странами. До тех пор DWIH планирует проведение мероприятий, призванных интенсифицировать двустороннее научное сотрудничество, в самых разных форматах, например, круглые столы и научные дискуссии с представителями ведущих организаций науки, экономики и политики, германо-российские недели науки в российских регионах. Таким образом, Германский дом науки и инноваций уже сегодня является важным звеном в реализации внешненаучной инициативы Министерства иностранных дел Германии, стратегии интернационализации Министерства образования и науки Германии и стратегического партнерства в области образования, науки и инноваций, которое связывает Россию и Германию.

Мы хотим двигаться дальше по этому пути. И здесь нам помогут молодые ученые наших стран и их интерес к работе друг друга. Ведь уже через несколько лет именно они станут вершить судьбы немецкой и российской наук, поэтому нам очень важно сегодня с их помощью укрепить связи научных сообществ Германии и России.

"What will we be talking about?"

Introductory Remarks

Ex-Vice-President of the DAAD, Prof. (em.) Max Huber

When our Russian colleagues read the program they will immediately find a lot of scientific German organisations, besides DAAD, the German Academic Exchange Service, there is DFG, the German Research foundation, the Max Planck Society, the Helmholtz Association, the German Academy of Sciences Leopoldina and the Alexander von Humboldt Foundation. There are even some more large research organisations in Germany, such as the Fraunhofer Society, which is not taking part in our conference. Research in Germany is done both at universities and in the above mentioned associations. All of them have a clear cut profile, have their own objectives, financing, management and fields of research.

For example, the Fraunhofer Society is engaged in the fields of applied sciences, the DFG as the biggest and most famous of these organisations funds research at German universities and in this context finances the universities in the framework of the "Exzellenzinitiative", the "Initiative of Excellence". The Helmholtz Association is concerned with large scale research projects; the institutes of the Max Planck Society are famous for their fundamental approach in all fields of research, such as in engineering and the overall scope of humanities as well as in law, social sciences and medicine.
In contrast to them DAAD and the Alexander von Humboldt-Foundation support the exchange of academic staff, but do not fund research itself.

In 2007 a new idea was born.
The Minister of the Foreign Office at that time, Dr. Frank-Walter Steinmeier, launched the vision of "Centres for German Research and Innovation Abroad", especially in countries which have an excellent reputation in science and research.
Thus he introduced a new branch of foreign policy, "Außenwissenschaftspolitik", in order to represent German research and innovation abroad.
We may translate "Außenwissenschaftspolitik" as foreign science and research policy.
This is why we now have centres within these scientifically prospective countries: the USA, specifically in New York, in India, in New Delhi, in Japan, in Tokyo, in Brazil, in São Paolo and in Russia, in Moscow.
In Beijing, China there has been a similar Centre for a long time, it was established several years ago.
Science and research however are inevitable prerequisites for innovation and the technological progress, but innovation itself does require management skills and capabilities as well as economic experience and the know-how to get successfully launched.

Therefore, besides the organisations of research, the organisations of the German economy have been integrated into the concept of the centres as well.
With the offices of DAAD, DFG, Helmholtz, the representation of the German economy and the German Institute of Historic Research, all of them already existing in Moscow, the idea was conceived to have them associated into a "club", a Centre which enables them to attract the attention of the Russian academic world to German Science and Research.
The mission of the centre is to form a forum on which German research can be represented on which a German-Russian dialogue can be practised. We want to represent the German performances in research and innovation for the dialogues.
Therefore, one of the major goals of the Moscow Centre of Research and Innovation (DWIH) is to support the dialogue between Russian and German researchers in various forms, namely – round tables, conferences, science talks, science lectures, exhibitions and presentations — and as a particularly important and additional element in this context, we are determined to foster the dialogue between young German and young Russian researchers.

That is why we started these types of conferences.
The "German-Russian week of the Young Researcher", held last year in Kazan, continues here in Yekaterinburg with a new topic. Last year we talked about "Man and Energy".

The question of health is fundamental for every society. It is a prerequisite for every type of macro-economy and for its progress altogether. More and more nations have understood the value of public health and spend a great deal of attention, energy and financial means on this field. Thus we decided to make this question the topic of our week in Yekaterinburg.

Keeping in mind what I have just told you about our DWIHs, German Centres for Research and Innovation and about the basic function of the DAAD – the academic support of researchers and students – you will easily understand that this "Second German-Russian week of the Young Researcher" fits both into the concept of the "German Centres Abroad" and the DAAD policy of scientists' support. It is an event where young researchers of two countries come together for a dialogue on a scientific topic.
DAAD gets people together, as the cultural aspect. What will happen from then on is science and this is where the competence of the DFG starts.

Thank you very much for your attention.

"What will we be talking about?"

Introductory Remarks

Vice-President of the DFG, Prof. Peter Funke

Dear Distinguished Guests,
Dear Colleagues and Friends,
Lieber Herr Huber,

thank you very much for handing this over to me. It is a little difficult to make a clear cut here, because in actual fact both of our organizations – the DAAD and the DFG – show a responsibility for science and the development of fundamental research. Indeed it is this "Week of the Young Researcher" where the two funding agencies DAAD and DFG meet: Supporting the mobility of young scientists and their research activities.

And especially abroad - here in Russia, in Yekaterinburg - it all makes so much sense to combine the on-site experience of the DAAD and the research expertise of the DFG, who has funded quite a few projects at Yekaterinburg research institutions over the past few years. That is why we originally had the idea to organize such a conference together and that is why we are trying to share this introduction here.

But Herr Huber has already pointed out that the German Centre for Research and Innovation - das Deutsche Haus für Wissenschaft und Innovation - is a host to many more German organizations than just the DFG and DAAD. That is why I am very happy to see that this week here in Yekaterinburg has representatives from the Alexander von Humboldt-Foundation, the Helmholtz Association of German Research Centres and from the Max-Planck-Society. A special welcome to Ruth Narmann from the German National Academy of Sciences Leopoldina, and to Tobias Stüdemann from the Freie Universität Berlin, who both will support us the entire week. But, as a matter of fact, I am even more grateful that we have all of these young researchers who have come a very long way to Yekaterinburg. Without your involvement this week would not have been possible. So, a great many thanks to all the Germans from Berlin, Bonn, Freiburg, Göttingen, Halle, Hannover, Heidelberg, Magdeburg, München, Tübingen – and finally – if I may add…from Münster, as this is where I come from!

But some of our Russian colleagues surely had a longer and more tiring journey in order to come here, as you live further away from Yekaterinburg than we Germans do. So, it is a great pleasure to welcome you from all parts of the vast territory that is the Russian Federation: from Angarsk, Irkutsk, Khabarovsk, Moscow, Nizhniy Novgorod, Novosibirsk, Orenburg, Saratov, St. Petersburg, Syktyvkar, and last but not least from Yekaterinburg. Indeed, without the help of our friends from Yekaterinburg, Victoria Belyaeva and Vasiliy Kryakunov from the Federal University as well as Tamara Deeva and Aleksandr Sandakov, we could not celebrate the opening of this week here today in this fashion.

Obviously the active role of ROSMU, the Russian Union of Young Scientists, and their Chairman, Aleksandr Shcheglov, has to be underlined here too. Without the strong input of your union it would have been very difficult to match young researchers from Germany and Russia at an eye-to-eye level as well as to bring all these young and promising talents together with renowned senior scientists - like Roland Schüle and Thomas Gutmann - makes this week so much more interesting for all of us.

The DFG, as the central self-governing research funding organization in Germany, has been active in Russia for many decades now. Why Russia? We believe that there is a considerable amount of research potential to be realized in many areas of science and the humanities here in Russia. We have always put a special focus on countries that allow scientific co-operation to be carried out on an equal footing. Within our agreements and bilateral programmes with the Russian Academy of Sciences, the Russian Foundation for Basic Research - RFFI and the Russian Foundation for Humanities – RGNF innumerable conferences, symposia, visits and research projects have been implemented in all areas of research, often leading to sustainable integrated networks. Our liaison office in Moscow, as one of only seven DFG offices world-wide, underlines the fact that Russia plays a key role as one of our most important strategic partners, but I will stop here at this point because my colleagues will go into further detail on this matter later this week and present how the DFG fosters bilateral collaboration and facilitates co-operation, especially among young researchers.

We have heard now why the DFG is in Russia and we have heard why we are in Yekaterinburg today as well heard - why we focus on the support of young researchers for this week, but we have not heard about the actual topic of this conference? Why did we choose "Health and Society" as a major topic? Let my briefly explain why. There are essentially three good reasons for it.

First of all, it is the interdisciplinarity of the topic that allows us to invite many different researchers from many different disciplines to set up interdisciplinary networks. We believe that this diversity will be a source for finding and creating new ideas. Identifying and exploiting on the synergy between various aspects and various scientific approaches will surely be the key to tackle global challenges like the ones that we will encounter in this topic. Secondly, the topic of public health is a hot issue at the moment. In order to launch an interdisciplinary dialogue in society about the objectives, challenges and fields of modern health research the German Federal Ministry of Education and Research initiated a very successful "Year of Science" in Germany. So 2011 was officially labelled as the year of: "Research for Our Health". And - thirdly - we thought it prudent to combine last year's topic with this bilateral week, because after all, research in health has long been a priority topic of mutual interest for German and Russian political and scientific platforms as well as for partnerships and government agreements.

But now my colleague Herr Huber and I have talked a lot and we do not wish to repeat ourselves here, but I am afraid you will have to listen to us and our wisdom again today and tomorrow anyways. I have already said quite a few words in German and in English, but there are so many great minds among us that haven't even said a single word in either language yet. So it is about time for us to finish and let the young scientists and the experts speak!

I am really looking forward to today's keynote speaker. It is a great pleasure to introduce Roland Schüle, who will, after all these words of welcome, finally speak on a discipline far more familiar to us all, science - as he will explain to us what "Medical Epigenetics" is all about. Professor Schüle is the Scientific Director of the Department of Urology and the Center for Clinical Research at the University of Freiburg.

IT ALL MAKES SO MUCH SENSE TO COMBINE THE ON-SITE EXPERIENCE OF THE DAAD AND THE RESEARCH EXPERTISE OF THE DFG, WHO HAS FUNDED QUITE A FEW PROJECTS AT YEKATERINBURG RESEARCH INSTITUTIONS OVER THE PAST FEW YEARS.

Since 2006 he has been part of the Spemann Graduate School of Biology and Medicine at Freiburg and since 2007, he has been involved in the Cluster of Excellence in basic biological and medical research at Freiburg University. Both the Spemann School and BIOSS, the Freiburg Centre for Biological Signalling Studies, were successful in the second period of the Excellence Initiative in Germany this year. In 2008, for his "innovative therapeutic concept to fight hormone refractory prostate cancer" he won a Reinhart-Koselleck-Award, which is a DFG-project, worth one and a half million Euros and only recently, a couple of months ago he became speaker of the new Collaborative Research Centre, Sonderforschungsbereich 992, for "Medical Epigenetics. From basic mechanisms to clinical applications".

Professor Schüle, we highly appreciate you and your young colleagues' presence this week. Thank you very much for your kind attention! We are all looking forward to many fruitful discussions this week. And now, I pass on to our distinguished speaker! Roland Schüle, the floor is yours!

CONTRIBUTIONS OF SENIOR GERMAN AND RUSSIAN RESEARCHERS

SENIOR SCIENTISTS

Prof. Dr. rer. nat. Roland Schüle

Department of Urology and Center for Clinical Research,

University of Freiburg, Medical Centern

MEDICAL EPIGENETICS

We identified the first histone demethylating enzyme lysine-specific demethylase 1 (LSD1) as a key regulator of the androgen receptor (AR) function. Elevated levels of LSD1 positively correlate with high Gleason scores of human prostate carcinoma and indicate the aggressive biology of the tumour.

To unravel the oncogenic potential of LSD1, we developed two LSD1 transgenic mouse models using the Rosa26 locus and the prostate-specific probasin promoter, directing either the ubiquitous or prostate-specific expression of LSD1. Transgenic animals develop prostate tumours, demonstrating that the increased expression of LSD1 suffices for oncogenic growth in vivo. Conversely, RNAi of LSD1 blocks AR-dependent tumour cell proliferation in vitro and the cancerous progression of tumour xenografts in vivo. Importantly, we identified a selective small molecule inhibitor of LSD1 that not only blocks demethylation by LSD1 but also impedes AR-dependent tumour cell growth. To identify the pathophysiological mechanisms that allow LSD1 to initiate and propagate tumour cell growth in the transgenic mouse models, we propose to identify LSD1 target genes that control tumour development. In addition, we shall uncover the signalling pathways that aberrantly modify LSD1 in tumour cells, allowing us to explore the therapeutic potential of targeting these signalling pathways. Furthermore, we shall explore the therapeutic benefit of LSD1-specific inhibitors.

Professor Schüle is scientific director of the Department of Urology at the University of Freiburg. He completed his PhD at the Max-Planck-Institute for Biochemistry in Martinsried, Germany, and then held a post-doc position at the Salk Institute in California. In 1991 he returned to Europe and took over the leadership of a research group at Sandoz (Switzerland). Since 1993 Roland Schüle has been studying prostate cancer at the University of Freiburg. In 2005 he got a professorship at the same University, at its Center for Clinical Research. His research in the sphere of epigenetics has been a breakthrough. He got a Reinhart-Koselleck-Award from the DFG in 2008.

Professor Schüle, you have won a Reinhart-Koselleck-Award from the DFG, which is worth one and a half million Euros. A couple of months ago you established your own Collaborative Research Centre "Medical Epigenetics". You held the key note of this conference on the same topic. What is it all about?

The epigenetic regulator LSD1 controls tumourigenesis. The histone demethylase lysine specific demethylase 1 (LSD1) is a key regulator of the androgen receptor (AR) function. Elevated levels of LSD1 positively correlate with high Gleason scores of the human prostate carcinoma and indicate aggressive biology in tumours. RNAi or chemical inhibition of LSD1 blocks AR-dependent tumour cell proliferation in vitro and the progression of tumour xenografts. LSD1 transgenic mice show that LSD1 suffices for oncogenic growth. Thus, we shall identify LSD1 target genes that control tumourigenesis, uncover signalling pathways that aberrantly target LSD1 in tumour cells and explore the therapeutic potential of LSD1-specific inhibitors.

It has been your first time to Russia. Do you want to invest your grants in co-operation with Russia now?

Yes, I would like to invest in cooperation with Russian scientists since I got the impression from my first visit that the young scientists in Russia are self-motivated, interested in science and would like to achieve international credit for their efforts.

What attracted you to Yekaterinburg and why did you bring two of your PhD students to this week?

It was my first time in Russia and I was curious to meet young Russian scientists because I did not have previous exposure to them. I liked the option to motivate young Russian scientists to collaborate with my lab. I brought my two PhD-students because I wanted them to show their knowledge to young Russians and international colleagues and to establish long standing ties within the a new generation of scientists.

STUDY OF CANCER MORTALITY IN A RURAL POPULATION OF THE NORTHERN PART OF EAST-URAL RADIOACTIVE TRACE

The objective of this study was to analyze the cancer mortality in a population exposed to ionizing radiation after the accident at "Mayak" nuclear plant in 1957. This study is based on the registered causes of deaths by using the information from death certificates issued by the rural municipalities in the northern part of the East-Ural Radioactive Trace and adjacent territories over a period of 43 years after the accident.

Exposed and unexposed groups were formed according to the different initial surface contamination by 90Sr (either above or below 3.7 kBq/m2) and included 6158 and 4844 cases of death from all possible causes of death respectively. Negative health effects affected by radiation exposure were analyzed by using the comparison of proportionate cancer mortality and life durations in exposed and unexposed groups. Due to the consumption of contaminated food by the population the organs of gastrointestinal systems received higher doses in comparison to other softer tissues. The total number of excess gastrointestinal cancer deaths in exposed group was 57±39 (with 90% within this interval) of 440 observed over the period 1958-2000 and the excess total years of life lost was 870±280. The most major time of excess deaths occurred within the period of 10-20 years after the accident and the excess gastrointestinal cancer risk generally becomes negligible beyond 20 years after the accident. Revealed excess gastrointestinal cancer mortality in the population of the northern part of the East-Ural Radioactive Trace can be related to accidental radiation exposure. The number of excess deaths corresponds as the excess relative risk being 2.1 Gy-1.

Dr. Ilya Yarmoshenko

Institute of Industrial Ecology, Yekaterinburg,

Ural Branch of Russian Academy of Sciences (UB RAS)

Dr. Yarmoshenko is the vice-director of the Institute of Industrial Ecology, Ural Branch of Russian Academy of Sciences (Yekaterinburg, Russia). He has been working at the Institute of Industrial Ecology since 1992, first as researcher, and since 2004 as Head of the Radiation laboratory. He graduated from the Ural State Technical University (Yekaterinburg, Russia) in 1992 and got his PhD in physical and mathematical sciences in 1999.

Dr Yarmoshenko, you are the deputy director of the Institute of Industrial Ecology of the Russian Academy of Sciences in Yekaterinburg. What are the research priorities of your institute?

The research priorities of our Institute of Industrial Ecology are the following:

- environmental and radiation safety of energy, including the atomic industry,
- scientific basis for environmentally sound and sustainable development,
- physico-chemical processes within the environment.

Do you see any chance to co-operate with German scientists in your field of research?

International co-operation is one of the most important issues in the organization of the scientific process. The cooperation between German and Russian scientist has a long and successful history. Surely, nowadays the co-operation in the field of both environmental and radiation safety research has attractive prospects. I welcome the efforts of the German government to develop infrastructure for German-Russian scientific cooperation, for example, the Young Scientists' Week.

This was the second week of its kind. What did you and your colleagues in Yekaterinburg think of this German initiative?

The supporting of research activities of young scientists is very important. A young person who has just started his/her life in science needs to get a detailed picture of modern-day research, to expand his/her horizons and establish scientific contacts. Young scientists have met in Yekaterinburg with leading German scientists and have heard lectures on topics of current interest. I'm sure that these young scientists have obtained valuable experience and additional motivation for their scientific careers.

SENIOR SCIENTISTS

Prof. (em.) Dr. med.
Hans-Jürgen Quabbe

Freie Universität Berlin,

Section Endocrinology / Diabetology,
Koch-Mechnikov-Forum

Professor Quabbe is the head of the section of Endocrinology and Diabetes at the German-Russian Koch-Metschnikow Forum and has had a long-term co-operation with Russia. He conducted medical research at Policlinique Universitaire de Médecine in Switzerland, at the University of Harvard in the USA and at the Albert Einstein College of Medicine (US). Since 1961 he has worked at Freie Universität Berlin: first as a resident and research fellow and since 1971 as co-chairman in the section of Endocrinology at the Department of Internal Medicine. Professor Quabbe is a member of the German Endocrine Society, the German Diabetes Society, the Association American Endocrine Society and the Pituitary Society.

DIABETES MELLITUS – A GROWING PROBLEM WORLDWIDE

The prevalence of diabetes mellitus is rapidly growing in many countries worldwide. The main increase has occurred in diabetes type 2, formerly also called "adult-onset diabetes". It is closely linked to the increase in obesity and thus to socio-economic developments. In 2030 one in 10 inhabitants of Europe is expected to have diabetes.
The economic burden is huge. Worldwide, due to this phenomenon, approximately $ 465 billion was spent in 2011 and this is expected to increase $ 595 in 2030. In spite of this, treatment results of diabetes and its complications are meager. While insulin-dependent type 1 diabetes can as yet not be prevented, the manifestation of type 2 diabetes could often be prevented by the reduction of obesity, healthy nutrition and a healthy lifestyle which includes physical activity.

An effort has recently been started in Germany to optimize research in the elucidation of the pathogenesis and genetic/molecular mechanisms of diabetes and the development of strategies for the prevention of diabetes. The "German Center for Diabetes Research" combines clinical centers and research institutes at five different locations. It organizes several epidemiological, observational and interventional studies in close co-operation with other European countries. Basic research is carried out on the biochemistry, metabolomics and genetics of the B-cell. A "diabetic mouse clinic" provides models for different research avenues. Finally, stem cell research aims to open possibilities for the restoration of insulin-producing cells in diabetic animals and – hopefully – in man. Potential areas of German-Russian co-operation will be proposed.

Professor Quabbe, you are Head of the Section Endocrinology and Diabetology at the Koch-Mechnikov-Forum. What is the aim of this forum in general and why was your special section included?

The Koch-Metschnikow-Forum is a German-Russian initiative which aims to harmonize Russian and German medical research and practice. It is part of the "Petersburg Dialog". Formerly it concentrated on infectious diseases – mainly tuberculosis and aids. The section "Endocrinology and Diabetology" was included recently in order to broaden its activity to other fields of interest in the health systems of both countries, such as thyroid diseases and - most importantly – diabetes.

How can we better facilitate cooperation between Russian and German scientists in your field of expertise?

Personal contacts are of the utmost importance. Small meetings are probably best suited for promoting discussions that can lead to co-operation and development of common research projects. If a common interest exists then a written draft of the project is mandatory. Short to medium term mutual visits (1-6 months) may then follow. Good English and/or German language knowledge is essential. Young Russian scientists should increasingly present posters of their work at European (and German) congresses.

You have chaired two panels in Yekaterinburg. What are your recommendations to the young researchers that plan a scientific career?

Begin with a clear evaluation of the published results in your field of interest. Discuss every step of your research concept with your team members and ask for open criticism. If possible, ask your head of department for advice. Try to publish some early results as a poster. You can then refer to those publications when trying to find some financial support. Furthermore, see my answer to the 2nd question. To be more advanced young scientists then learn to speak adequate English and attend important international meetings.

THERAPEUTIC PROBLEMS OF DIABETES IN PATIENTS WITH AN IMMIGRANT BACKGROUND

Germany has a multi-ethnic population. An estimated 25% of the population has an immigrant background. Of these, about 10% are immigrants of the first generation. In comparison, the percentage of the population with a different ethnic background in Russia is at about 16%; 47 different indigenous people are recognized, living mostly in remote areas. However, as in Germany, the big cities attract working people from all regions and thus multi-ethnicity in large cities is common.

Diabetes care aims at "self-empowerment", allowing for individual therapeutic decisions by the patient, e.g. choices concerning the form of treatment, diet and exercise. The efficiency of this strategy depends on the patients' acceptance of their role as a decisive part in the therapeutic decision process. This attitude depends on the psychological effects of immigration, cultural background, social background, religious convictions as well as educational background. The many differences between migrants and the indigenous population might well affect the therapeutic outcome.

In view of the high percentage of patients with an immigration background in Berlin (up to 40% in our centre) we initiated a project comparing the intermediate outcome (HbA1c, microalbuminuria, cholesterol, blood pressure and BMI) as well as final outcome data (myocardial infarction, cerebral ischemia or cardiovascular death) between the German and migrant populations. Migrant diabetic patients had a higher initial HbA1c value. Over one year the decline in HbA1c was comparable between both groups. However, the difference between the migrant and the German population remained constant. Interestingly, the long-term outcome with respect to cardiovascular disease was comparable in both groups, even if age-matched cohorts were analyzed.

The persistently higher HbA1c levels of the migrant population are possibly related to several factors. Language is still a problem, despite our use of translators. Dietary changes are even more difficult to initiate, as food is one of the powerful emotional connections with the country of origin. The educational level of patients with an immigration background is lower (>20% illiteracy in elderly females) and the expectations towards the health care system are higher within the migrant population. Self-empowerment is difficult for patients who expect their physicians to solve all of their problems.

Cultural differences create problems in the communication between the health care personal and the patients. Prejudices occur from both sides. Thus any strategy to improve health care will have to work with the health care providers as well. We therefore initiated group sessions on inter-cultural communication which resulted in small projects and improvements which we hope will improve diabetes therapy in patients from different ethnic backgrounds.

Prof. Dr. med. Ursula Plöckinger

Centre of Excellence for Rare Metabolic Diseases,

Interdisciplinary Centre of Metabolism,

Charité-Universitätsmedizin Berlin

SENIOR SCIENTISTS

Since 2010 **Professor Plöckinger** has been the head of the Centre of Excellence For Rare Metabolic Diseases at the Interdisciplinary Centre for Metabolism at Charité – Universitätsmedizin Berlin. Since 2004 she has been a professional educator for Internal Medicine, Endocrinology and Diabetes. Prof. Plöckinger has worked as a research fellow at the University College of Medicine (Cardiff, UK) and later on as Senior Physician at the University Clinic Benjamin Franklin, FU Berlin and at the Charité – Universitätsmedizin Berlin. She is a member of different German and international medical organizations such as: The Executive Committee of the Association for Hereditary Metabolic Defects in Internal Medicine (ASIM), the American Endocrine Society, the European Neuroendocrine Tumour Society (ENETS), the European Association for the Study of Diabetes (EASD) and others.

Prof. Plöckinger, you are the medical director of the Interdisciplinary Centre of Metabolism at the Charité, Berlin. What do you think of the interdisciplinarity and the format of this week?

Many young researchers from a number of different disciplines (medicine, physics, philosophy etc) participated at the meeting in Jekaterinenburg. Interdisciplinarity means that there is one specific topic, in this case "health and society", which is discussed by researchers from varying sub-specialties. This on the one hand allows the finding of common ground within the primary issue, in addition it gives new perspectives to the themes one likes to think of as already thoroughly worked through. In addition there are possibilities for young researchers from a broad spectrum of interest to gain new insights as well as to offer and discuss their views. Thus all of us will probably agree that this has been quite an interesting experience that we have all had together in Jekaterinenburg

You have been a chair on the panel and an active participant of all discussions this week. Did you notice any difference between the young Russian and the German researchers you met in Yekaterinburg?

German researchers at this level of their career are almost all fluent in English. They are well trained in how to prepare a speech and give a talk. Perhaps they are aware that it is not only research you have to be good at, but that it is just as important to present one's data well and to build a network for future co-operation. It was quite clear that these aspects that are needed for a career in science were a bit "underdeveloped" in the young Russian researchers.

What was your general impression of Yekaterinburg? Was it worth it?

My general impression was that the young Russian scientists were proud of their participation and that they enjoyed it very much and even gained a new view on certain things. For us, the elder generation, it is always a pleasure to co-operate with young scientists and to be of help and offer them our support. If we can make this possible in an interesting setting such as Yekaterinburg then it's all the better. I enjoyed every minute of my stay.

Dr. Andrey Katanin

Institute of Metal Physics, Yekaterinburg,

Ural Branch of the Russian Academy of Sciences

INTERNATIONAL COLLABORATION WITHIN THE MPI PARTNERGROUP: EXPERIENCE AND RESULTS

The speech touches upon the activities of the Partnergroup of the Max-Planck Institute for Solid State Research (Stuttgart) in the Institute of Metal Physics (Ekaterinburg). Important and necessary conditions for the Partnergroup's creation are the experience of the Partnergroup's leader of working at one of the Max-Planck Institutes (MPI), his willingness to return to his home institution and his intention of keeping close contacts with MPI. The partnergroup allowed us to get the necessary technical tools, teach two PhD students, - locally and via their visits to MPI, as well as increase stipendium of these PhD students.

As a result of the Partnergroup's activity, 20 papers on the magnetic and superconducting properties of low-dimensional systems were published within 5 years. Scientific co-operation within Russia appeared to be very important for our Partnergroup, while the visits of the PhD students to MPI appeared to be very helpful for their own advances. This experience enlightens us about the necessity of international co-operation for the development of Russian science.

From 1992 up to now Dr. Katanin has been a senior researcher at the Institute of Metal Physics of Urals Branch of Russian Academy of Sciences (Ekaterinburg, Russia). His scientific interests lie within the sphere of the investigation of the magnetic and electronic properties of strongly-correlated electronic systems and the role of correlation effects within these systems. He got a doctorate degree in 2011 at the Moscow State University with his thesis "Fluctuation effects in low-dimensional local moment and itinerant magnets". During 2004-2006 he held a post-doc position at the Max Planck Institute for Solid State Research (Stuttgart, Germany). In 2007 he was appointed as the leader of a partner group of the Max Planck Institute for Solid State Research (Stuttgart, Germany) which is the Institute of Metal Physics (Ekaterinburg, Russia).

You work at the renowned Institute of Meta Physics of the Russian Academy of Sciences in Yekaterinburg. What is your scientific link to the topic of this week?

This is Russian-German collaboration. I am interested in different aspects of this collaboration, as well as the role of Russian and German science and scientists in this.

With your long work experience at a Max- Planck-Institute what do you think are the differences between conducting research in your field in Germany and in Russia?

On the one hand, there are far more investments for science in Germany than in Russia resulting in the equipment used in German institutes (e.g. at the Max-Planck Institute) to be somewhat better. Also, the "average" level of scientific investigations in Germany is much higher than what it is in Russia; a more important role is given to the younger scientists in Germany. However, I think Russia is progressing (though not so quickly) towards the improvement of conditions in science. Even nowadays, there are many similarities between the way of conducting scientific research in Germany and in Russia, possibly because science itself is international.

Why did you come back to Yekaterinburg from Germany? What would you recommend to the young researchers who want to stay in science in Russia?

I felt that from one side that my experience is very useful in Russia (many Russian colleagues have also told me that). On the other side, I emphasized that it is important for my personal and scientific advances to be performed in Russia, as I can be tuned in "resonance" with certain people that are more similar to me, but at the same time keep my scientific relationships are also abroad. To the young scientists I would recommend to be yourself, be active and do not simply go with the flow. On the other hand, do not resist the things which inevitably cannot be changed. In that case you had better change yourself.

MEDICAL LAW AND SOCIETY

The German approach to medical law has very specific strengths, but at least one weakness.

Medical law in Germany is very strongly connected to the constitutional law of the country. The patient-physician relationship is framed by the basic rights of the patient and the rules of the law. The patient's right to life and bodily integrity (Art. 2 para 2 s. 1 of the Constitution), reinforced by the concept of human dignity (Art. 2 para 1 of the Constitution) is conceived as a right of liberty, giving him/her the right to freely decide what is and what is not to be done to his/her body. The central tenet of German medical law is the respect for patient autonomy. Several consequences are derived from this. Firstly, there is a strong focus on the patient's informed consent, lack of disclosure and unauthorized treatment being among the most common causes of liability. Secondly, the realm of patients' legally protected decisions over their bodies is broad, spanning from consent of medical treatment to issues of advanced directives and transgender. In German medical law we are committed to respecting individual autonomy even when we do not endorse a person's particular values – we even will respect a patient's suicidal refusal of a blood transfusion if we know it accords with what he/she, on reflection, 'really wants'. Thirdly, patients' right to privacy and their right to informational self-determination are quite heavily protected against social forces as well as against the state.

With its strong focus on the rights of liberal autonomy, German medical law is much weaker when it comes to governing questions regarding distributive justice, i.e. resource allocation. The discussion about principles for the rationing of medical goods has just begun. At least, the German Constitutional Court has decided that all members of the statutory health care system have the right to demand that almost everything possible with at least a slight chance of success will be given to them in the case of a life-threatening illness. However, the German medical law system has almost no effective means and institutions to implement "Public Health" policies, i.e. those organized efforts of society focusing on stopping the healthy becoming sick, rather than treating the sick, either by implementing preventative measures or by trying to reduce unhealthy behaviour. This might be the central weakness of German medical law. In the end, however, this may prove as just another strength by giving us the chance to design Public Health policies which nevertheless respect patient autonomy.

Professor Gutmann, you are speaker of the DFG Research College "Centre for Advanced Study in Bioethics". You also you participate in the Cluster of Excellence for "Religion and Politics" which presented itself at the Moscow Kremlin last year. Can inter-disciplinary approaches and a week like this lead to new findings?

Yes. "Health and Society" is an exemplary field where inter-disciplinarity is required for a meaningful scientific progress. From 2014 onwards, our "Centre for Advanced Study in Bioethics" in Münster, together with the "Centre for Interdisciplinary Studies" in Bielefeld will have a programme that focuses on "Public Health. What is badly needed in this field, besides medical knowledge, is expertise in Philosophy, including Medical Ethics, Political Sciences and Law, of which we will try to provide. We are grateful that the German Research Foundation (DFG) offers "Research Colleges" (which are Centres for Advanced Study with a time frame of 8 years) a funding programme.
What we saw during the "Second German-Russian Week of the Young Researcher" which was on "Health and Society" is that almost every talk, whether it was a medical, a legal or a philosophical one, raised questions from people of all other fields. There was a strong impression of having a common topic, beyond the boundaries of specific disciplines as well as beyond the boundaries of national academic cultures.

You held a lecture on Medical Law. Are there any prospects of international or bilateral co-operation with Russia in this area?

Yes. Medical law, broadly conceived, regulates a crucial part of social development. At an international level, the Council of Europe, of which Russia is a member of, is quite active, as is the World Health Organization. Concerning the prospects of bilateral co-operation, I expect Russia to pass a wave of legislation in this field over the next two decades. In several respects the German experience in medical law may prove more valuable to the challenging tasks of

Prof. Dr. iur. Thomas Gutmann

Chair of Civil Law,
Philosophy of Law and Medical Law,
University of Münster

SENIOR SCIENTISTS

Since 2009 **Prof. Gutmann** has been Chair of the Centre for Advances Study in Bioethics at Westfälische Wilhelms-Universität Münster. He got a professorship at the same University, Department of Law, in 2006. He served as an advisor to several parliaments on organ transplantation policies and especially to the German Bundestag. Since 2006 he has been the chairman of the "Working Group on Legal Boundaries" in the European research framework ELPAT (Ethical, Legal and Psychosocial Aspects of Organ Transplantation) within the European Society for Organ Transplantation (ESOT). Dr. Gutmann was an Isaac Manasseh Meyer Fellow at the National University of Singapore in 2010.

Russian health policies than that of the anglo-saxon one. I was encouraged in this view by my colleagues from the Faculty of Law of the Higher School of Economics in Moscow, of whom we have a co-operation agreement with in Muenster. And by the way —at the Academy of Medical Science in Yekaterinburg I learned that our ways of teaching Medical Ethics are far more similar than I had previously expected.

You came with a small group of your PhD students to Yekaterinburg. What did they think about the week?

I brought two Post-Docs and one PhD student of philosophy to Yekaterinburg. Firstly, we were impressed how highly motivated the young Russian researchers are despite the conditions in many of them work in which in many cases are not very favourable. It is very important for us Germans to experience this first hand. Secondly, maybe a "Week of the Young Researcher" should be even more about the young researchers themselves. Our hosts provided a well-conceived, but very dense programme. I had the impression that our Post-Docs and PhD students, both from Russia and Germany, would very much have appreciated the opportunity to have more time to be on their own in order to learn to know each other on a more personal level. To connect people one needs that too.

SENIOR SCIENTISTS

Prof. (em.) Dr. med. Jochen Ehrich
MHH Children's Hospital,
Hannover Medical School
Russian Academy of Medical Sciences

THIS ARTICLE FOCUSES ON VULNERABLE CHILDREN AND ON THE ROLE OF PAEDIATRICIANS AND SCIENTISTS IN TODAY'S COMPLEX HEALTH SYSTEMS.

Paediatrics is characterised by the diversity, variety and heterogeneity of health care offered in the 53 countries of Europe with more than 200 million children that are less than 18years of age and with more than 200.000 paediatricians. Paediatrics respects the rules of child development which state that an adolescent is not a young adult, a school child is not a small adolescent, an infant is not a small child, a neonate is not an infant and a premature newborn is not a small neonate. Paediatricians care for both healthy and sick children. Health care management differs according to where it is performed for example: inpatient care in hospitals, outpatient care in hospitals or at private practices, homecare and rehabilitative care within special rehabilitation units. Paediatric health care focuses on the patient and not on diseases, however children with acute diseases need a completely different management of their case than children with chronic diseases. Special care is given to underprivileged and marginalised children such as children with chronic diseases, disabilities, a migrant background and poor children. Approximately 20% of the child population suffers from an inborn or acquired chronic disease. More than 6000 rare diseases belong to these chronic diseases. Children with long term conditions have by far a longer period of time to cope with their chronic disease or disability than what adults do. The transition from paediatric to adult medical care is a multi-factorial challenge.

Children have no voice in society and their caregivers do not speak with one voice which has led to considerable inequity of health care within many European countries.
There is currently no European-wide "bank" of data to enable comparative studies of the service outcomes to encourage health service research relating to infants, children and young people.
The aim of my talk is to stimulate young doctors to focus on the improvement of clinical research in paediatrics as well as to increase the knowledge base and the quality of future health care services. The understanding of how and why research works, relating the structure and processes of science to clinical work is essential at a time of an economic recession.

Can we today build on a tradition of German-Russian research co-operation in medicine?

Before the 1st World War, Russian medicine had strong collaborative links abroad, namely with Germany. Mechnikov and Ehrlich shared the Nobel Prize in 1908 for their work on phagocytes. After the 2nd world war both Germany and Russia suffered from a severe intellectual brain drain and/or a decline in medical research activities, the reasons for this differed considerably. Before 1933, approximately 50% of all German pediatricians were Jews who were forced to leave NAZI Germany between 1933-1945 or perished in concentration camps, thus leading to a shortage of experienced doctors and researchers in Germany. In the late 1920s, Russian science stopped to prosper because the Bolshevik People's Commissariat for Enlightenment created a new "Communist Science" that was no longer embedded in international science (McKee 2007). Although new research findings were still discussed scientifically, the influence of their ideology forbade publication of those results that did not fit into the new "Communist Science."

After the 2nd World War, the isolation due to "Communist Science" continued in Russia and ideological research persisted. Consequently, there was an increasing lack of appropriate diagnostic procedures based on the lack of higher technologies. Furthermore, inadequate therapies evolved in the absence of modern drugs and most importantly a range of irrelevant fields in medical research, such as heliobiology, were performed instead of modern science (McKee 2007). At the turn of the millennium, publications of Russian science in international medical journals were scarce, but this situation is now improving slowly.

By contrast, young post-war German scientists were given the chance to study or to work in Western countries and foreign literature was easily available in Germany. In the 1990s, almost 50% of all medical students from Hannover performed an elective period in foreign countries, thus enabled almost all students to become fluent in English. Many German scientists perform research work outside the country and many foreign scientists work in German research institutions, however, German medical science may not yet have reached its full potential, even in 2012.

In summary, there is a need for improving the co-operation of German-Russian research which will be to the benefit of both countries, however, new collaborations in 2012 must not only consider the important aspects of availability, affordability, accessibility and adequacy of projects but also the diversity of these two nations which means firstly understanding that each nation is unique, and secondly recognising each other's national differences. These varieties can be along the dimensions of mentality, ethnicity, gender, culture, history, socioeconomic status, religious and/or political beliefs as well as medical care and research.

What are your recommendations for young scientists of medical research?

Establishing the basis of clinical research in pediatrics involves the accumulating of appropriate structures and personal, the joining clinical study groups, the gathering of knowledge, including generative professional knowledge as well as knowledge in regards with social responsibility and finally the developing of communication and co-operation skills.

What can be done to make the Third Week even better than the first two Weeks of Young Researcher?

At least five senior English speaking Russian professors (mainly heads of departments) should participate throughout the conference from beginning till the end to achieve balanced German-Russian expertise (professorial tandems) and to create multiplying factors, sustainability and networking. Secondly, young presenters will benefit from a template (sent out by the organizers) on how to prepare their presentations. Prior coaching and training for presenting a 10 minutes free communication should be performed at the respective home universities before the conference. These procedures are mandatory processes that may enable an increase in the quality of communication. Besides this, the broad spectrum of topics should be maintained, however, it may be advisable to choose up to five sub-topics for the time limited to sub-group sessions.

Jochen Ehrich studied Medicine from 1965-1971 in Berlin and Lausanne, Switzerland. He performed his post-graduate studies from 1971-1972 at the London School of Hygiene and Tropical Medicine in London, UK. From 1994-1997 he was Professor of Paediatrics and the Head of Paediatric Nephrology at the Charité Hospital of Humboldt University in Berlin and in 1997-2011 he was Professor of Paediatrics and Head of the Department of Paediatrics at the Children's Hospital of Hannover Medical School. From 2009-2011 he was elected as Expert at the Council of Europe in Strasbourg, France, on "Child-Friendly Health Care". In 2009 he became Honorary Professor of Paediatrics at the Russian Academy of Medical Sciences (RAMS). In 2012 he won the Johann Gottfried Herder Grant and has a visiting professorship at the Russian Academy of Medical Science (at its Scientific Centre of Children's Health). His clinical responsibilities include paediatric nephrology, hepato-gastroenterology, endocrinology, metabolic disorders, neuropaediatrics, and paediatric ultrasonography.

Dr. rer. nat. Mario Schelhaas

Emmy-Noether-Research Group
„Virus Endocytosis",
University of Münster

ВОЙНА И МИР - THE INTERPLAY OF VIRUSES AND HOST CELLS DURING INVASION

Our group studies the multiple interactions that occur between incoming small DNA tumour viruses and their host cells during the initial infection. Since viruses as intracellular parasites depend on the assistance of the host for a successful infection, we learn as much about host cell's mechanisms that are hijacked by the virus as we learn about the virus itself. Our ultimate aim is to use any such information for the rational design of anti-viral measures.

Using a wide variety of experimental approaches, such as systems biology strategies, pharmacological inhibition and further cellular perturbations in combination with high temporal and spatial resolution microscopy in live and fixed cells, as well as with electron microscopy, we may investigate how virus particles bind to cells, how they are internalized by endocytosis and how they are transported to endosomal vacuoles. We are also analysing how the viral genome and accessory proteins escape into the cytosol and how they access the nucleoplasm.
Here we will discuss the example of the Human Papillomavirus Type 16 (HPV-16), the main etiological agent of cervical cancer, how our findings were on the interaction with specific glycosaminoglycans on target cells, the uptake of the virus into target cells by a novel endocytic mechanism may provide information on the immediate use of anti-viral substances or a high potential for the development of broad-band anti-viral inhibitors. In the end, we will discuss how systems biology approaches lead to our discovery that HPV-16 can only import its genome into the nucleus during mitosis, a feature previously unheard of for DNA viruses. Our findings thus explain why HPVs exclusively infect the stem cells of skin or mucosa, as only those are mitotically active.

Since 2009 Dr Schelhaas has been Leader of the Emmy-Noether Research Group "Virus Endocytosis" and lecturer at the University of Münster's Centre for Molecular Biology of Inflammation (ZMBE). He has associated himself with the International Research Training Group 1409 "Molecular Interactions of Pathogens with Biotic and Abiotic Surfaces". He studied biochemistry at the Universities of Cologne and Edinburgh as well as at the Max-Delbrück-Laboratory of the Max-Planck-Society in Cologne. He did his habilitation in 2004 at the Max-Planck-Institute for Neurological Research in Cologne and then conducted his post-doctoral research at the ETH Zurich at its Institute of Biochemistry. Since 2010 Dr Schelhaas has been a member of the editorial board, (Cellular Microbiology). He has been awarded several German prizes and scholarships among which one is the Emmy-Nother Award from the DFG (2009-2014), the Research Award from the DFG (2006), a PhD Award from the Max-Planck-Society (2003-2006).

Dr Schelhaas, you are a DFG-Emmy-Noether Group Leader. Does your early independence help you with your scientific career or does it make life more difficult?

Frankly speaking, both. As an Emmy-Noether fellow you can explore scientific freedom at your leisure (though - for most of the time – leisure, it is not). You can follow the research you deem the most interesting and important, which is a great motivator and typically makes my day. Scientific freedom is why I do science. In addition, with an Emmy Noether fellowship, you are not burdened by tasks assigned through an institution, which in turn lets you focus on your own research. In addition, the Emmy-Noether Award puts a spotlight on you. You are much more recognized as an independent researcher and as a scientific individual than if you would be sheltered, groomed and helped along by a mentor within an institute. Your achievements will be recognized as yours alone. However, your failures and mistakes will be yours only to blame for as well. Leading a research group without some sort of mentoring is challenging – particularly at the beginning. You are bound to make some initial mistakes and you have to learn fast from them. Very often you also face difficulties at the institutional level, which nobody is really prepared for at this stage of their career. For some it may also be tough to deal with scientific competition when you are all on your own. For me, it was - and still is – great. I think that I have grown much faster into my role as an independent researcher than if I would have risen through the ranks by being mentored by a renowned scientist. Whether it will be a most successful career choice, we will have to see, but I am quite optimistic about it.

What expectations did you come to Yekaterinburg with – and how did they turn out?

I really did not have any clear expectations but brought a lot of curiosity with. My general respect for Russian science and Russian scientists is derived from their great achievements, particularly in the fields of mathematics and physics, but of course I knew also about a number of important publications in virological research. What I knew about young scientists from Russia was derived from my work at faculties in two different International graduate research schools, where I rank and interview PhD applicants. These applicants are typically well educated in the theoretical point of view, but very often lacked a lot of practical experience in modern techniques. When I interacted with them, they were all enthusiastic, highly motivated individuals with a lot of drive to learn more and to experience science. During the week in

Yekaterinburg, I have met many more such individuals – so clearly there is a lot of potential in Russia. What I learned about the existing structure of Russian research and science is a bit more disturbing: Right now, the career paths for young scientists in Russia appear to lack some clear perspectives and opportunities, both on a structural level and on the level of using "state-of-the-art" techniques, but I heard that there are dramatic changes underway, which will help to advance the situation, in particular, when it comes to infrastructural resources. What has not become clear to me is how young researchers in Russia are supported on their way to scientific independence. I hope, this event could contribute to generate or strengthen ideas for this purpose.

Yekaterinburg has been your first experience in Russia – do you plan on coming back?

My visit to Russia has been a wonderful experience – we have had great conversations and exceptional hosts. I am looking forward to meeting many more of the enthusiastic Russian young scientists and possibly working together with them.

UNDERSTANDING LIFE/DEATH DECISIONS IN THE CELLS BY SYSTEMS BIOLOGY

Apoptosis is a highly conserved program of cell death in multicellular organisms that is central for their homeostasis. Defects in apoptosis are associated with cancer, as well as neurodegenerative and autoimmune diseases. There are two ways of apoptosis induction: intrinsic and extrinsic. The intrinsic pathway is triggered via changes in the mitochondria, the extrinsic pathway via stimulation of the so called death receptors (DRs). For a number of years we have analyzed the life/death decisions at CD95 that is one of the members of the DR family. We have used biochemical and systems biology approaches for CD95 studies. The central event in CD95 signaling is the formation of the death-inducing signaling complex (DISC). The DISC comprises oligomerized receptors, the adaptor protein FADD, procaspase-8, procaspase-10 and c-FLIP.

In our recent study we analyzed the stoichiometry of CD95 DISC molecules using contemporary experimental and theoretical approaches, i.e. quantitative mass spectrometry, western blot and mathematical modeling and found a novel feature of the structural organization of the DISC. Our data showed that procaspase-8 could form chains at the DISC via interactions between its death effector domains (DEDs). Furthermore, in these chains procaspase-8 undergoes activation and triggers apoptosis. We also expanded this knowledge beyond the CD95 system concluded that DED-chain formation serves as a general basis for caspase-8 activation in DR complexes. Taken together, using a combination of experimental methods with mathematical modeling we unraveled a new view on procaspase-8 activation at the DISC and its dynamics. This powerful methodology could be further applied to the study of other death signaling platforms such as the necrosome, ripoptosome and other receptor complexes and provide further fascinating insights into the mechanisms of life and death decisions.

Professor Lavrik, you are a co-ordinator of a Helmholtz-Russia Joint Research Group. What are these groups in general and which topic does your group deal with?

Helmholtz-Russia Joint Research Groups are joint collaboration projects between the Russian research groups lead by young scientists (i.e. age under 35) and German Helmholtz Center, one of the top-level research organisations in Germany. In my opinion, this is an excellent programme which allows for the development of young Russian scientists and provides them with the possibility to perform research at a world leading level, supported by visits to German host institutions. Our group helps develop the contacts between the German Cancer Research Center in Heidelberg and the Institute of Fundamental Medicine in Novosibirsk and studies DNA damage-induced

SENIOR SCIENTISTS

Prof. Dr. med. Inna Lavrik

Medical Faculty,

University of Magdeburg;

German Cancer Research Center

(DKFZ-Heidelberg)

Prof Dr. Inna N. Lavrik earned a PhD in Biochemistry at Lomonosov Moscow State University (MSU), Moscow in 1994. In 1998 she became a lecturer at the MSU. In 1997 she got the Russian State Prize for Young Scientists for outstanding research in the field of Science and Technology. During 1995-2000 she actively worked on collaborative projects as a visiting scientist at the Institute of Molecular Genetics in Berlin, the University of Witten-Herdecke, the University of Bayreuth in Germany and the University of Massachusetts in Amherst (US). She began as a Post-doc at the German Cancer Research Center (DKFZ) Heidelberg in Germany in 2000 and became a group leader in 2004. In 2007 she started a second group in the Center for "Quantitative Analysis of Molecular and Cellular Biosystems" (Bioquant) at the University of Heidelberg. In 2012 she became Professor and was appointed the Head of the Department of Translational Inflammation Research at the University of Magdeburg in Germany.

apoptosis and new methods in how to improve current therapies of cancer.

You had a long career at the German Cancer Research Center DKFZ-Heidelberg and you are now a professor at Magdeburg University. What attracts your German research colleagues to Russia?

I took part in the organization of a number of Russian-German scientific meetings and events in the past few years in the fields of immunology, cancer and systems biology. The colleagues from Germany were always very enthusiastic about the exchange with Russian scientists because of the high scientific intellectual potential and also because of the possibility to get more insight into the fascinating culture of Russia as well as its history and arts, which are certainly of high interest to many scientists.

It has been your first time to Yekaterinburg. Can you feel a difference between the capital and the regions of Russia with regard to their scientific potential?

I must say that I am very enthusiastic about Yekaterinburg, especially about its people (in science and outside of science), who are very dynamic, motivated and intelligent. I talked to a number of young students at the University and they are all excellent and highly motivated. To compare the level of science at the capital vs. a non-capital I must say that I went to school at Novosibirsk Academgorodok and then studied in Moscow at Moscow State University. Now I have visited Yekaterinburg. I would say that the amount of talented motivated people is the same everywhere. Yet there is much more money invested in science in Moscow, therefore, there are more possibilities for science and also more opportunities to pursue a scientific career for young people, which, unfortunately, is much more limited for those in the cities outside of Moscow.

DEVELOPMENT OF NUCLEAR MEDICINE IN THE URAL REGION

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SENIOR SCIENTISTS

The natural tendency in modern medical diagnostics is to detect pathological alterations on a cellular level a long time before disease symptoms become apparent. No matter what the medical field is, early diagnosis is a key to an effective therapy. Nuclear medicine (radionuclide diagnostics and therapy) that uses radiopharmaceuticals based on medical radionuclides is probably one of the best examples of the co-operation of physical, chemical and medical technologies for effective early diagnostics and non-invasive therapy. Nuclear medicine uses the relatively "weak" ionizing radiation of radionuclides (in comparison to radiotherapy). Its main principle is the targeted transport of relatively low active quantities (for the body as a whole) of the radionuclide, specifically to the pathological area. The preferred method of doing this is to transport the radionuclide to the cell using so called radiopharmaceuticals.

Radionuclide diagnostics (SPECT and PET) and therapy is widely used all over the world. At the same time, nuclear medicine procedures are very complicated and have to be conducted within a short period of time (especially in PET diagnostics). Sometimes the time between the end of targeting processes and the diagnostics itself doesn't exceed one hour. Therefore the whole procedure is very expensive. That's why the development of nuclear medicine depends on peoples' income level. So, considering a relatively low income level, the majority of the Russian population can't benefit from radionuclide diagnostics. The population's need for the radionuclide therapy is satisfied in not more than 1-3 percent of the population.
The Ural Federal District (UFD) has a good potential for the radionuclide production. In our District there are several well-known nuclear plants (in Ozersk, Novouralsk and Lesnoy) as well as a nuclear reactor for research in Zarechny. However, the exported radiopharmaceuticals are used generally in only a few SPECT diagnostics. There are no PET centers in Yekaterinburg yet.
Ural Federal University which is named after the First President of Russia, B.N. Yeltsin (UrFU), boasts good research and work experience within radiochemistry, pharmaceutics and accelerators' based experiments. The creation of the Cyclotron Nuclear Medicine Center in UrFU is the first major step in the development of nuclear medicine within the Ural Federal District. The development of the cyclotron's technologies for medical radionuclides fits in with the modern world tendency which is to avoid the building of new entire nuclear reactors.

Dr. Ivanov graduated in 1983 as an engineer of electronics and automatics from Ural Polytechnic Institute which has become the Ural Federal University. He worked as a post-graduate professor (1986-1989), assistant professor (1989-1991), and associate professor (from 1992) at the university's Experimental Physics Department. During 2007-2008, he took part in a research and education program of UrFU within the Russian National Educational Project as the coordinator. In 2010 he was elected the head of the Experimental Physics Department whose scientific interest covers the questions of solid state physics, materials science under the influence of irradiation and the producing of radionuclides for nuclear medicine. He initiated the creation of Cyclotron Nuclear Medicine Center at UrFU. In 2006 Dr. Ivanov got the Teacher of the Year Award at the Ural Polytechnic Institute.

You are an experienced university teacher. In 2006 you were awarded the title of the "Best University Teacher". Who was in the commission which decided on the awards among the young scientists?

Students (mainly from the physics technical department), PhD students and young scientists all took part in the decision-making process. Besides the quality of lectures performed by the candidates, some scientific research activities and social aspects were taken into consideration.

You work at one of the nine privileged Federal universities in Russia that gets more than 125 million Euros of funding from the government. Has this new status led to establishing more international contacts and research activities at you university?

This is undoubtedly true. The first significant financial support for some universities started in 2006 under the National Education Project. During 2007-2008 I worked in the head team for the Innovative Educational Program at our university. So, my opinion is based on facts and documents. The number of international contacts has risen considerably. At the same time new possibilities to buy modern scientific equipment lead to the increase of research activities especially among young scientist.

The German-Russian week was held at your university. What were the reactions in Yekaterinburg to this event?

One of the ideas for creating privileged Federal universities in Russia consists in the idea of the creation of powerful scientific-research centers that are able to influence the regional policy. So, our university follows this strategy. Therefore the information about German-Russian week was widely covered by the press. To me, such kind of collaboration is equally useful for both Yekaterinburg and the University.

CONTRIBUTIONS OF YOUNG GERMAN AND RUSSIAN RESEARCHERS

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STUDYING THE SNPS AS A METHOD OF REALIZATION OF THE MEDICINE OF THE FUTURE

Thanks to the development of molecular medicine based on data about the genome's structure, there is a possibility for diagnostics, correction and prevention of the pathological processes within a specific person, taking into account his or her unique features. One of the priority questions of modern medical science is the implementation of the predictive, preventive, partial-participation and personified approaches in the treatment of the majority of diseases of the patient. This principle is maintained in the concept of the medicine of the XXI century – «the medicine of four «P»». The accumulated data testifies that considerable numbers of diseases have a multifactor nature whose development is defined by the interaction of the set of congenital and environmental causes. The nucleotide polymorphisms of DNA are the basis of these multifactor diseases. Their various combinations determine the level of risk of the development of pathologies. Let me remind you that genetic polymorphism is the presence of several varieties of the gene in a population, which are capable of making an unequal impact on the qualitative or quantitative characteristics of coded proteins. Among actively studied multifactor pathology, the infringements in the systems of haemostasis, including genetically determined thrombophilia, raise increasing interest, not only among scientists, but among doctors. The problem of thrombophilia has acquired a special value in obstetrics and gynecology, neurology and cardiology, and also pediatrics. The significant importance of the various thrombophilic states has been shown in the development, course and outcomes of some diseases of the perinatal period. Childhood thrombophilia is partly a consequence of the mother's unfavorable obstetric anamnesis and it is also the manifestation of an ancestral predisposition, which is realized under the influence of certain provoking factors at various stages of the formation of the organism. At a child's age the manifestation of this condition could have the most drama consequences. In spite of the fact that the problem of thrombophilia is actively studied by representatives of various medical specialties, data on the prevalence of the genetic polymorphisms associated with the risk of thrombophilia and features of their phenotypic realization among children isn't numerous. The interdisciplinary group of experts – the staff of the Ural State Medical Academy - is engaged in the study of the gene polymorphisms of a haemostasis and folat cycle. Now, there is an accumulation of data on the frequency of the occurrences of certain polymorphic alleles, the mechanisms of their interaction and features that influence some external factors among the child population of Sverdlovsk region. The analysis of the prevalence of pointed mutations of the genes associated with the risk of thrombophilia in the child population, will allow one to consider in a

new way the mechanisms of neonatal adaptation and disadaptation, the features of the subsequent growth and organism formation, and also the processes of the development of pathological conditions.

New research is necessary for the realization of the exact mapping of combinations of polymorphisms which are responsible for the development of multifactor pathologies. Study of genetic polymorphism and creating individual SNP cards will allow one to define more precisely the clinical value of each concrete polymorphic allele. The obtained data will be useful for the prevention of the realization of multifactor pathology and for the prevention of thrombotic and non-thrombotic effects of thrombophilia in particular. New data about the molecular-genetic foundations of multifactor pathology is necessary for the realization of the predictive and the preventive approach to rendering assistance to the population in modern conditions.

THE FEATURES OF VITAMIN CONTENT IN THE BLOOD PLASMA AND EXTRACELLULAR MATRIX OF BONE MARROW IN RATS IN CONDITIONS WHICH HAVE EXTREME EFFECTS ON THE BODY

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At present there is still a topical subject of the physiological regulation of the blood system in normal conditions and when the extreme factors act on the organism. This is due to the increase of the number of stress factors affecting hemopoiesis, causing the development of pathological processes. In recent years, participation of the extracellular matrix of the adaptive reactions of the blood system is widely discussed. In particular, the maintenance of vitamins which play an important role in the reactions of proliferation and differentiation of hematopoietic cells is also discussed.

The goal of this work is to study the dynamics of vitamins in the blood plasma and extracellular matrix of bone marrow over the period of immobilization stress.

These experiments were performed on rats of Wistar line (n=25), which were detained whilst being fed the same standard diet. Model of the neuro-muscular tension suggested by H. Selye (immobilization of animals on the back for 6 hours) was applied as a stress factor. Material for the study was obtained immediately after the instance of immobilization stress, after 2 days. Quantitative determination of vitamins was done by high performance liquid chromatography. On the hematological analyzer the number of red blood cells, hemoglobin, hematocrit ratio, the number of white blood cells and platelets were all determined. Data analysis was made with the statistical package, STATISTICA 6.0. To assess the significance of the differences between the groups the nonparametric Mann-Whitney test was used. These studies were conducted in compliance with the basic rules of bioethics.

The study of the vitamins in the intact animals shows that the concentration of all six studied vitamins in the extracellular environment of the bone marrow was more than what was in the blood plasma. The content of vitamin C is 55 times higher, PP - 24 times, vitamin B6 - 14 times, vitamin B1 - 6 times, vitamins B2 and B12 – 1.5-2 times. Consequently, the extracellular matrix of the bone marrow has some vitamins, other than the blood plasma and is necessary for hematopoiesis in normal physiological conditions. Immobilization stress increases the total number of leukocytes and platelets in peripheral blood. Leukogram data indicated increasing numbers of monocytes, neutrophilia,

lymphopenia. But by the on the second day, these figures did not differ from those of the intact animals. On the part of red blood no significant changes were detected. The Myelogram shows the output from the bone marrow of granulocytes and the entering of it into the lymphocytes. Subsequently, there is a renewal of granulocytopoiesis in the bone marrow. Rats, in contrast to human beings and primates, are able to synthesize vitamin C and PP. According to published sources, whilst under stress, in the adrenal glands the decrease of the content of vitamin C, which is associated with its participation in the synthesis of corticosteroids and catecholamines was shown. Therefore, a two-fold increase of the level of vitamin C in the blood plasma within the conditions of immobilization stress is probably caused by the active output of this vitamin from the depot (liver). At the same time the content of vitamin C in the matrix of the bone marrow practically doubled, where it is apparently involved in the synthesis and the maturation of collagen and the supporting of hematopoiesis to take place. On the second day after the immobilization output from the depot of vitamins PP and B2 the increase of their number in the blood plasma were marked. These vitamins are probably necessary for the operation of the enzyme systems within the stress response, as they are cofactors for a large number of enzymes. In the extracellular matrix of bone marrow no significant changes in the content of vitamins B2 and PP were revealed during all stages of the study. At the same time, there is was a significant decrease in the content of vitamin B6 in the matrix of bone marrow on the second day after the instance of immobilization. This situation shows the active consumption of vitamin hematopoietic tissue for the adaptation to the stressful factor. Changes in the content of vitamins B1 and B12 were not found in all periods after exposure to both in plasma and in the intercellular substance of the bone marrow. Thus, the observed dynamics of vitamins indicates a high rate of exchange in the bone marrow, which is associated with changes in blood formation and stress adaptation. Water-soluble vitamins C and B6 plays an important role in the adaptive responses of hematopoietic tissue under stress.

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COMPARATIVE ANALYSIS OF THE ORIGIN OF NOSOCOMIAL INFECTIONS IN HOSPITALS IN RUSSIA AND ABROAD

The term «Nosocomial infections (NI)» represents the collective concept including various nosological forms. According to the World Health Organization «nosocomial (hospital) infection is any clinically expressed disease of microbial origin that affects the patient as a result of his admission to the hospital or his requests for medical care, and also a disease of the employee due to his work in this establishment, regardless of the the onset of symptoms by the patient during his stay in the hospital or after his discharge». The urgency of the problem of nosocomial infections (NI) is defined by the high level and the wide spread of these infections in medical institutions, and also by the significant damage (social and economic) inflicted by these diseases to public health.

NI are polyethiologic and are also presented by a wide variety of microorganisms. The list of causative agents includes representatives of various taxonomic groups relating to bacteria, viruses, protozoa and fungi. Thus the microorganisms that cause the development of NI in patients and medical staff can belong both to pathogenic, and to opportunistic groups. Nosocomial infections caused by pathogens ("classical" infections) make about 15 %-25 % of all nosocomial infections. The most pathogenic in this group are causative agents of acute intestinal infections (salmonellosis, shigellosis, ro-

tavirus infection), tuberculosis and parenteral viral hepatitis. Purulent-septic (PSI) (pyoinflammatory or wound) infections are caused by a large group of opportunistic and saprophytic bacteria, and make up the majority of NI. They account for 75-85% of the general structure of the causes of nosocomial infections. Etiologic agents are representatives of the families of opportunistic microflora: staphylococcus, streptococcus, escherichia coli, klebsiella pneumoniae, pseudomonas, enterobacter, citrobacter , acinetobacter, serratia, proteus, candida, etc.

In the Russian Federation in 2010 there were 25,617 registered cases of nosocomial infections (compared to 27,220 cases in 2009). The incidence of nosocomial infections was 0.8 per 1,000 hospitalized patients. In the Russian Federation the greatest number of cases of nosocomial infections is registered in obstetric aid establishments (35,8 %) and surgical hospitals (33,1 %). The share of cases of nosocomial infections reported in other hospitals was 15%, in children's hospitals - 9.8% in outpatient clinics and polyclinics - 6.3%. The incidence of infections, associated with surgery, made in 2010 in the whole country 0,84 cases for every 1000 patients operated on. In most regions of the Russian Federation, there is practically no sign of nosocomial infections of the urogenital system or nosocomial pneumonia. Since 2006, Russia carried out the registration of the emergence of cases of intrauterine infection's (INI). The incidence of INI in 2010 was 12,49 cases for every 1000 children born (in comparison to 12,0 cases in 2009).

The problem of nosocomial infections is extremely topical for economically developed countries of the world, having hospitals with a large number of beds. For example, annually 2 million patients in the USA endure NI, in Great Britain - 100 thousand patients. The annual economic damage caused by NI, is estimated at 5 billion Rubles in the Russian Federation, in the USA - 4,9 billion dollars ($), in England – 1 billion pounds sterling.
The World Health Organization in 1997-2001 carried out research in 55 hospitals in 14 countries representing 4 regions (Europe, East Mediterranean, South East Asia, Western part of the Pacific Ocean). The highest frequency of nosocomial infections was recorded in hospitals of the East Mediterranean and South East Asia – 11,8 % and 10,0 % respectively. In the Western part of the Pacific Ocean this indicator made up 9,0 %, and in Western Europe – 7,7 %. Most frequently nosocomial infections occur in surgical, traumatologic departments and in the resuscitation department and intensive care unit (ICU). These were mostly purulent-septic infections, urinary tracts' infections and lower respiratory tracts' infections.
The USA control system over hospital infections continuously monitors NI and antibiotic resistance. The analysis of data during 1992-1997 showed prevalence in the structure of various diseases in resuscitation and intensive care units: infections of the urogenital system (31%), pneumonia (27%), primary angiogenic infections (19%), 87 % of them were associated with the central venous catheters.

Also, there was a research in Germany. The survey took place between January and May of 2012. The representative sample includes 46 hospitals, all together 134 hospitals in Germany with a total quantity of 39.699 enclosed patients took part in this survey. The current data shows that there was a nosocomial infection in about 3.5% of the patients during the prevalence study. Among the different fields the highest prevalence rates were observed by the intensive patients (18.6% in relation to all nosocomial infections). The most common infections were urinary tract infections (22.4%), postoperative wound infections (24.7%) and lower respiratory tract infections (21.5%). The most common causative agents of nosocomial infections were Escherichia coli (18.4%), Staphylococcus aureus (13.3%) and Enterococcus (12.8%).
Thus, nosocomial infections represent an acute problem of the health system of the Russian Federation and many foreign countries, leading to the deterioration of the population's health state, and also cause great economic damage to society.

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WHAT IS THE RIGHT TO HEALTH?

Many moral arguments for public health policies are founded on the reference to a right to health and moral references to fundamental rights are in turn often supported by a reference to their codification in acknowledged norms, such as declarations or constitutions. However, a first look at these norms shows that the reference to a right to health is burdened with some conceptual difficulties that need more attention in order to understand its normative force.

The reference to a right to health that is taken literally as a right to be healthy, arguably contains a mistake about what individual persons can reasonably be entitled to. This is not due to problematic definitions of health – as in the WHO definition of health which is the complete mental, physical and social well-being of a person–, but due to the fact that disease and infirmity are subject to control only to a limited degree. While a society may have an influence on its population's health, the health of an individual person is something that can be promoted, but not granted. In turn, having poor personal health cannot per se be understood as an instance of a violation of a human right.

Following a consideration of this sort, many understand the right to health as the right to an access to health services. However, from a moral point of view there is a fundamental reason to define a right to health not through claims to a specific catalogue of health-care services, but through the right to the promotion of one's health status. This allows for wide conclusions concerning the moral demand of a right to health to be made. The reason for understanding the right to health by reference to a catalogue of health services is that different individuals may have very different health needs and thus require different resources to have the opportunity to be healthy. Furthermore, there are specific inequalities in health that are morally reprehensible, especially those that are connected to social status. Thus, health 'inequalities' can be distinguished from 'inequities'.

There are two conclusions to be drawn from the analysis of the right to the highest attainable standard of health. (i) Societies are morally obliged, not just to provide basic health-care. According to the right „to the highest attainable standard they must secure equal opportunities to attain or pertain health. This includes tackling the social conditions of infirmity and it may include not leaving the provision of health care to the market. (ii) If the provision of health depends on an equitable health-care system, which in turn depends on social solidarity then the right to health may be accompanied by an individual obligation to be part in a social system of health provision. You can forfeit the right to health, but you cannot forfeit having and contributing to the social opportunity to achieve health.

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PUBLIC HEALTH: ENABLING OR THREATENING AUTONOMY

There are a lot of open philosophical questions on the field of Public Health Ethics, both on the conceptual level and on the evaluative level. Research on the social determinants of health has revealed that good public health depends only to a minor part on a good and fair health care system. The social gradient of health shows that there is a strong correlation between social status and good health over the complete socio-economic range and this trend holds for almost all societies. Working and living conditions as well as particular life styles seem to be of much greater significance for good health than the treatment of health impairments. Therefore there is no fixed border between Public Health Ethics and more general questions of justice, e.g.

the distribution of wealth or the makeup of work places. This more conceptual problem points to evaluative follow-up questions, e.g. whether we should redirect our focus in research and distribute resources towards preventive measures.

Furthermore, the value of personal autonomy that has become so central to liberal societies does not give us determinable answers on how to evaluate particular Public Health measures since they can carry both autonomy-conducive and autonomy-intrusive elements. On the one hand, creating health-conducive environments (e.g. environments that make it difficult to smoke tobacco or mandatory safety-regulations at work places) can be taken to promote autonomy, since good health is a central prerequisite for following one's life plans. On the other hand, this can be seen as an unjustified interference with the autonomy towards those who ascribe a high value on activities that are dangerous to good health and/or those who choose to do risky things whilst fully informed about the consequences and intentionally. Furthermore, whereas the provision of universal access to health care is welcomed by most people, many preventive policies are taken to be somewhat burdensome.

These evaluative questions point back to the conceptual level since they show the necessity to refine our notion of personal autonomy in the light of the value that it can attribute to good health. Do we take autonomy primarily to be a claim for the right to non-interference or do we take it to demand the provision of an environment that makes it easier for us to make good and healthy choices?

PRINCIPLES OF JUSTICE IN NEUROETHICS OF COGNITIVE ENHANCEMENT

The author provides a brief conceptual analysis of the debate on psychopharmacological cognitive enhancement from the point of view of public reason as it is construed in contemporary political philosophy. The author argues that the strong reasonable disagreement that marks arguments of authenticity, posthumanism and "playing God" stems from their presuppositions in religious, ethical or metaphysical comprehensive doctrines, whereas the principles of justice could be the basis for an "overlapping consensus" in the context of regulating the use of cognition enhancement drugs for non-therapeutic purposes.
The analysis of the requirements of justice points to a conclusion that discouraging the use of psycho-pharmacological cognitive enhancements would be the most legitimate public policy. The author offers a model of such a policy; with the imposition of taxes, fees and requirements of additional insurance the use and indirect coercion to use would be less profitable and less wide-spread, while additional funds thus created could be allocated to meet basic medical needs and/or that of education.

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LIVE INFLUENZA VACCINE FOR CHILDREN AND ADULTS: TRANSMISSIBILITY IN VIVO EXPERIMENTS

Influenza is an important contributor to population levels and individual morbidity and mortality. Influenza is accompanied by high mortality, especially in young children and the elderly. Influenza epidemics occur each year and infect up to 15% of the world's population. Pandemics occur every 10–40 years. Three major properties of the influenza virus determine its pandemic potential: the novelty of a strain on the immune system, virulence and its ability to spread from person to person (transmissibility). In spite of the important role of the transmissibility of the influenza virus, the nature and mechanisms of their contagiousness continue to be discussed. Understanding the mechanisms that underlie in transmissibility will allow us to more effectively monitor influenza and to explore new ways and methods of prevention.

Vaccination is an effective method of protection against influenza. WHO recommends live attenuated influenza vaccines, to prevent not only epidemic, but pandemic influenza seasons. Periodically, the question is raised about the possibility of the spread of the of live influenza vaccine strains amongst the population and their subsequent reassortment with other circulating viruses. According to the authors of such articles, the vaccine strain might exchange genes with the seasonal virus. This leads to the formation of a mutant virus with new unexplored properties and an increased virulence.

The aim of this research was: to study modeling of the transmission of wild type (wt) influenza viruses and to asses the probability of transmission of cold–adapted (ca) strains. This model analyzes the potential transmissibility of vaccine strains of the live influenza vaccine.
This is based on study of reassortment of different strains of the influenza virus in experiments in vivo, we have shown that the possible reassortment of highly virulent virus vaccine strains did not lead to the formation of reassortants that have elevated levels of virulence and transmissibility.

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EARLY NUTRITION PROGRAMMING

The concept of early nutrition programming has roots stretching back into the psychobiological phenomenon for more than 100 years and is called called "imprinting". D. Spalding discovered that baby chicks tend to follow the first moving object they see after hatching. Then K. Lorenz popularized the phenomenon and gave it the name "imprinting". He concluded that the first moving object after birth is irreversibly "stamped into" the birds' brains.

G. Dörner (1975) adapted the phenomenon of imprinting from which is psychobiological in birds to one that is metabolic in humans. The term programming has been introduced into scientific literature to describe the discovery that biological metabolites acting during critical early periods of development pre-programme the brain's development and determine functions of metabolic processes later in life. In 1994 D. Barker discovered the relationship between ones birth weight and the lifetime risk for them with coronary heart disease. His "fetal origin hypothesis" implied that responses to the lack of nutrition during fetal life permanently alter the body's structure, physiology and metabolism. Berthold Koletzko and his multicenter "Early Nutrition Programming Project" (2005-2010) provided plenty of evidence for the programming effect of early nutrition. Particularly, the amount of protein in an infant's diet was proved to be critical for developing obesity by school age, while breastfeeding reduced the obesity risk by 20% in comparison to formula feeding.

In our present study in Nizhny Novgorod, Russia we examined the impact of non-adapted dairy foods, such as full cream cow's milk or kefir, introduced in the first year of a person's life, on metabolism (body mass, blood pressure, insulin and glucose levels) later in life.

Prior to the study we interviewed the mothers of 436 children in Nizhny Novgorod city. The survey revealed a very low prevalence of exclusive breastfeeding and a high incidence of full cream cow's milk feeding in the children's infancy. The following investigation we conducted when the examined children reached the age of 5-9 years old. Based on the survey data we selected 2 groups of children according to the type of feeding they received at their first years of life. The 1st group was a group of 36 children, who were breastfed till at least 9 months of age; the 2nd group included 43 children, who had full cream cow's milk in their diet whilst in infancy.

The children whose diets in infancy were characterized by a high consumption of full cream cow's milk showed higher systolic and diastolic blood pressure (99,58 vs 93,39 mm Hg, 68.23 vs 63.67 mm Hg, respectively). We also found that children of the 2nd group were heavier; almost half of them had a BMI over the 85th percentile.

When we compared fasting and 2-hour glucose levels, glucose tolerance indices, in the fasting insulin we found no significant differences between the two groups. However, the only difference we found in the insulin-glucose metabolism was the 2-hour insulin which is normally not taking into account by common insulin resistance indices such as HOMA-IR. The children who were fed cow's milk demonstrated a greater upward trend in 2 hour insulin (18.5 vs 9.52 mcIU) relative to breastfed children. Then we compared insulin levels of children with a normal BMI and with a BMI above the 85th percentile. Children who had the higher BMI were mostly from the 2nd group and demonstrated a 2 times higher level of fasting insulin and a level of almost 3 times higher 2-hour insulin.

These findings suggest that dietary patterns in infancy may have some long-term effect on body mass, blood pressure and insulin levels. Cow's milk feeding in infancy may predispose children to increased blood pressure and insulin resistance later in life. We may also suggest that 2-hour insulin is a more sensitive indicator of insulin resistance than fasting insulin.

ELECTRIC VEHICLES: ECOLOGICAL ASPECTS AND THE IMPROVEMENT OF EFFICIENCY IN THE POWER SYSTEM'S OPERATION

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Nowadays many car owners give preference to vehicles equipped with an electric drive system. Their choice is mainly motivated by the increasing costs of oil prices, power storage technologies development and ecological issues.

The major advantage of electric motors in comparison to internal combustion engines is the absence of harmful emissions. So, it is evident that electric vehicles can improve the ecological situation. However, these measures need local action, shifting the emission centre outside the streets of big cities. The comparison of electric and internal combustion engines from the ecological point of view should be carried out taking into account the atmospheric emissions of power plants that produce electrical energy for the charging of electric vehicles.

The calculations of the average mass of atmosphere pollutants per 100 km driven, performed with given weighted average specific mass of the atmosphere pollutants per 1 kWh production, energy and fuel consumption data, showed that electric vehicles can result in a better ecological situation, because power plants cause no air pollution in the urban environment, which, consequently, reduces health risks.

However, the environmental analysis, carried out from the point of power system gives differ-

ent results. The integration of charging stations into the power grid causes several problems for the operation of power systems, namely the increased load required to charge electric vehicles, resulting in voltage dips, grid components overloading, etc. Moreover, due to power station load increases due to an increase in demand, additional CO2 and NOx emissions will be produced as well.

In the figure provided below, the load profile graph is plotted against traffic intensity for a typical business day in Yekaterinburg. The most likely time for electric vehicle charging corresponds to the maximum traffic intensity. People are most likely to charge their electric vehicles upon arriving home, which coincides with the national domestic daily peak load. So, the uncontrolled charging process leads to undesirable conditions for the power grid. Additional power consumption requires the implementation of additional generating capacities, which, consequently leads to extra emissions of CO2 and NOx.

The proposed theory was verified by mathematical simulations, carried out for uncontrolled household and public charging scenarios. The results show that peak power consumption increases, resulting in significant difficulties for the control and operation of the power system.

So, the charging of electric vehicles during the peak load time will impose a new peak to the power system. Moreover, coming back to the environmental impact issues, we can state that the elimination of gasoline-powered vehicles will result in dramatic changes of power stations and how they operate, requiring additional capacities for covering the demand during a peak load.

Ekaterinburg is the main center of power consumption in the Sverdlovsk region. So, the increase in electric consumption of the city means the increase of pollution in the atmosphere of the whole region, since most of power plants use fossil fuels for power production.

This research work was initiated by JSC "Electric Network Company of Ekaterinburg" (www.eesk.ru). The next stage of this research work will be devoted to the multi objective optimization of operating power systems, taking into account the stochastic nature of the process of charging electric vehicles, peak demand shaving and ecological criterias.

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MULTIRESISTANT MICROORGANISMS IN HEALTHY LIVESTOCK - A RISK FOR HUMANS?

The occurrence of resistant bacteria has been an important problem in hospitals since long ago. In the course of time more and more microorganisms are developing resistances. The treatment of infections caused by these resistant microorganisms is limited due to the inefficiency of the most commonly used antibiotics. In the past few years the appearance of these resistant bacteria in healthy livestock herds which are used for food production have been reported about. Some of these resistant bacteria found in livestock are MRSA (methicillin-resistant Staphylococcus aureus) or extended spectrum beta-lactamase (ESBL) and/or AmpC beta-lactamase-producing (AmpC) Enterobacteriaceaee. Both Staphylococcus aureus and Enterobacteriaceae like E. coli belong to the common flora of skin respectively intestine of humans and animals without causing any diseases. However, these bacteria that carry resistances against several antibiotics were found in different samples of healthy pigs and poultry. MRSA was mainly found on the skin or in the nose of these animals while ESBLs was found in the faeces. MRSA is regularly detected in the air inside the animal barns as well as in some samples of exhaust air in the vicinity of the farms. An emission of these microorganisms into the environment via an airborne way seems

to be possible. Both bacteria species also were detected on ground surfaces in the surroundings of animal farms which could be the result of sedimented bacteria from exhaust air but also due to a contamination of the fields after fertilization with manure. Raw meat was also tested to be positive for MRSA and ESLBs. Therefore, it is necessary to follow the guidelines of kitchen hygiene to avoid the transmission of these bacteria from the meat to raw food like in salads which will not be cooked. The mentioned resistant bacteria do not cause diseases in healthy humans but one risk is the transfer of the resistance genes to other obligate pathogen microorganisms which would cause diseases that are difficult to treat. The whole topic is an issue of public health and further research concerning intervention strategies to reduce the resistant bacteria in livestock and consequently in the following food chain is necessary.

HIGH-FAT FEEDING ACCELERATES DISEASE ONSET IN A MURINE MODEL OF CROHN'S DISEASE-LIKE ILEITIS

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The rising incidence of obesity and associated metabolic disorders coincides with increased prevalence of inflammatory bowel diseases (IBD) such as Crohn's Disease and Ulcerative Colitis. In fact, obesity among IBD patients increases as well and corresponds with a more severe disease course and comorbidities. However, the molecular causes remain to be clarified. The aim of this study was to elucidate a possible connection between diet-induced obesity, intestinal barrier functions and inflammatory processes in the intestine.

A high-fat diet (HFD) compared to the control diet (CD) accelerated intestinal inflammation in TNFΔARE/WT mice, a mouse model developing ileal inflammation similar to human Crohn's disease. We therefore investigated several milestones in the course of the pathogenesis of IBD. Pointing to reduced intestinal barrier integrity, we found expression of the tight junction protein Occludin to be dramatically reduced in the ileal epithelium of mice fed HFD compared to CD, together with increased occurrence of bacterial components in the hepatic portal plasma. We found increased expression levels of markers of epithelial activation and of the dendritic-cell-attractant CCL20 in isolated ileal epithelial cells. Consistent with these findings, recruitment of CD11c+ dendritic cells, a cell population specialized in antigen-presentation, into the lamina propria was increased under the HFD.

Interestingly, the observed changes were independent of significant overweight or metabolic changes, such as inflammation of the adipose tissue or impaired glucose tolerance. Furthermore, in vitro modeling revealed a higher chemotactic potential of IECs towards bone-marrow-derived dendritic cells when stimulated with cecal lysates from HFD mice compared to the CD, indicating microbial and/or luminal factors as possible triggers for pathology in this study.

These findings point out that a diet rich in fat may indeed aggravate intestinal inflammation and that this correlates to alterations of the microbiota, the antigen presenting cell populations present in the lamina propria and their possible interaction with intestinal epithelial cells.

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LSD1 COORDIANTES TROPHOBLAST DEVELOPMENT BY RETAINING STEM CELLS IN THEIR NICHE

Epigenetics deals with functionally relevant modifications to the genome without altering the underlying DNA sequence. Such modification could be either DNA methylation or modifications at the so called histones. All modifications together at one gene promoter decide if a gene is repressed or can be actively transcribed. Our research deals with an enzyme called Lysine, specifically demethylase 1 (Lsd1). This enzyme can specifically remove methyl marks at the histone positions H3K4me2 and H3K4me1 (the active mark) or H3K9me2 and H3K9me1 (the repressive mark) and thereby decides on the expression of a gene. In agreement with several studies we could observe that Lsd1-deficient mice die during early embryonic development prior to 12 hours into embryonic day 7.

During early embryonic lineage commitment two distinct pools of precursor cells are established prior to murine implantation, namely the inner cell mass and the trophectoderm. The inner cell mass further differentiates into the later embryo whereas the trophoectoderm develops to the placenta. Using an epiblast-specific deletion where Lsd1 is present in the placenta precursor cells and deleted in the embryo precursor cell, we could demonstrate that this embryo survives longer compared to an embryo where Lsd1 is completely deleted. We could observe early defects in the extraembryonic trophectoderm lineage of ubiquitous Lsd1 null embryos. Lsd1-deficient embryos become prematurely depleted of the TSC pool as a result of increased migration from their niche. Similarly, in the cell culture Lsd1 restricts migration of TSCs and is dispensable for stem cell maintenance. Using the genome-wide analysis of the gene expression we identified the transcription factor ovol-like 2 (Ovol2) as a target gene of Lsd1 mediating migration and invasion. In summary the deletion of Lsd1 leads to a precocious migratory behaviour of the placenta precursor cells. Therefore the stem cell pool of these cells completely depletes so that the remaining cells cannot form a proper placenta leading to the early death of the embryo.

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NON-INVASIVE ULTRASOUND METHOD OF ASSESSMENT OF THE LIVER FIBROSIS STAGE IN CHILDREN WITH CHRONIC HEPATITIS B

Background: The degree of hepatic fibrosis is an important factor for the prognosis and management of patients with chronic viral hepatitis. Liver biopsy is recommended as the gold standard method for the determining of the stage of fibrosis, prognosis and therapeutic indications in patients with chronic viral hepatitis, but it is an invasive procedure associated with a risk of potentially serious complications. Modern possibilities of ultrasonic devices allow us to dilate diagnostics of liver fibrosis.

Methods: 36 children with HBV infection, aged 3–17 years, were examined. The control group consisted of 30 children . The liver parenchyma was assessed by the conventional gray-scale ultrasound and with the acoustic structure quantification (ASQ) function. On the echogram of the liver parenchyma 2–3 zones of interest were chosen, in which we constructed a histogram, performed color coding and comparative analysis with graphical and numerical representation of the density and heterogeneity of the parenchyma. A liver biopsy for the histopathological assessment of fibrosis was performed in all

of these patients. We assessed liver stiffness in chronic viral hepatitis B and compared correlations among liver stiffness by ASQ and the stage of hepatic fibrosis by biopsy's and an elastography's findings.
Results: Evaluation of the liver parenchyma in healthy children showed a density distribution curve fully consistent with a given curve and with the density graph; the density index did not exceed 0.99 ± 0.01, which indicated the absence of fibrosis. In 15 children with HBV ASQ the data showed a small number of image variations in the histogram, the density index was 1.17 ± 0.02. The morphological features were consistent with minimal fibrosis. In 21 children with HBV the histograms also showed multiple graphical variations, the density index was 1.78 ± 0.02. Biopsies of these children showed signs of severe fibrosis. The number of variations on the histogram and the density index directly depended on the degree of the fibrosis.
Discussion:Liver fibrosis markers are commercially available; they are currently insufficiently accurate to support their routine use. Until sensitive serum markers can be developed that will define all stages of fibrosis and mirror the information derived from liver biopsy, the procedure remains the only means of defining the severity of damage. A liver biopsy has limitations because of inconveniences and rare but serious complications such as bleeding, intrahepatic or subcapsular haematomas, the puncturing of other visceral organs, sepsis and bad reactions to the anaesthetic. The diagnostic performance of elastography is good for identifying severe fibrosis or cirrhosis, but it is less accurate for milder presentations; it has limited a research zone (only 6 cm^3). The acoustic structure quantification function is a non invasive technique that allows the detection and quantification of liver fibrosis and is extending its application toward the characterization of chronic hepatitis and may be a non-invasive alternative to all of these methods.

IDENTIFICATION OF NOVEL LSD1 TARGET GENES CONTROLLING TUMOUR METASTASIS IN VITRO AND VIVO

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The DNA double helix is wrapped around a protein complex consisting of two of each of Histone 2A, Histone 2B, Histone 3 and Histone 4. Together with Histone 1 they build the so called nucleosome which can be further condensed to the chromosome. The chromatin can be modified at different levels. The DNA itself can be methylated by DNA-methyltransferases but also the N-Termini of the histones can be covalently modified i.e. through methylation, acetylation and phosphorylation. These modifications are very critical during the decision if the transcription of a gene gets activated or not. Lysine specific demethylase 1 (LSD1) is one of these enzymes which can specifically demethlylate Histone 3. With this function LSD1 can act in two different manners: by demethylating the activating mark H3K4me2/me1 it represses gene transcription but by demethylating the repressive mark H3K9me2/me1 it activates gene transcription.
In several publications LSD1 is already linked to different cancers. During cancer progression cells can evade from their primary tumour into the lymphatic and the blood vessel system to form local or distant metastasis. This process is associated with poor prognosis in affected patients. Currently there is no curative therapy for metastatic prostate cancer available. In our work we could show that a knock down of LSD1 leads to an increased migration and invasion of prostate cancer cells in vitro. Using the genome-wide analysis of gene transcription and promoter occupancy we could identify a novel G-protein coupled receptor (GPCR) as a direct target, which is normally repressed by LSD1. Vice versa, the knock down of this GPCR exhibits decreased metastatic potential in vitro and in vivo in prostate cancer cells. Thus, our results reveal new pathways that might be of the utmost importance for the treatment of prostate cancer.

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MEDICAL TREATMENT IN WAR TERRITORIES

"War is a traumatic epidemic"
N.I. Pirogov

There is another quote from him which is less popular: "the number of people who die during wars as a result of diseases as it was in the past wars as well as in the modern ones is much bigger than the losses of the killed and wounded in the course of battles".

These wise and prophetic words have been confirmed by the experiences of medical defense forces of local wars and armed conflicts that have happened in the past few last decades which took place in different regions of the planet and which evidently proved the dominance of therapeutic pathology in the patterns relating to sanitary losses.
For example, in Afghanistan the losses of life due to sickness was up to 89% of the total sanitary losses and in Chechnya this number was at about 50% that was mostly due to the incidence rate of infectious diseases, neuropsychic pathologies, skin and subcutaneous tissue diseases and a whole group of somatic diseases.

- In the last 5.5 thousand years there have been 14 500 wars
- War losses have reached up to 3 bln. 540 mln. people
- In the last 35 centuries there have been only 300 years without any wars
- The wars of the 20th century have cost more than $US 4 trillion (this sum could be sufficient enough to provide food for all the population of the Earth for 50 years).
- In the last 50 years armed conflicts have been happening in 4 of the 6 existing continents: Eurasia, Africa, Central and South America, excluding the desert Antarctic and Australia.
- Each year 30 armed conflicts break out in the world.

The experience of the medical defense forces of the military forces in the conditions of armed conflicts proves that the prompt delivery of health care can improve a lot in the outcome of wounds and diseases. For example, during the armed conflict in the Chechen Republic the imminence of the qualified and specialized medical care for the wounded and sick (military stages of medical evacuation) enabled a reduction in the number of the wounded by almost twice as compared to the result of military operations in Afghanistan.

We should also consider that the use of conventional weapons can lead to the destruction of nuclear engineering facilities and chemical plants causing massive sanitary losses of therapeutic nature so the personnel assets of medical service have to face the military therapeutic pathology.
By my observation based on personal experience the total military losses in the territory of the Chechen Republic reached up to 300 soldiers during 2003-2004 and about half of them were caused by mine-blast traumas as of a result of explosive demolitions.

These horrible "gifts" have not been removed yet from several mountainous areas of Chechnya. According to recent calculations: 5 thousand hectares (50 mln sq.m.) of the territory are still mine studded.
Moreover, in my opinion, in connection with the globalization of interaction between separate terrorist organizations and the general growth of global political tension, not only is the problem of ordinary injuries in armed conflicts but also the issue of injuries caused by biological munitions (considering that there have already been singular terrorist acts where biological weapon have been used) are becoming more relevant.
It is also proven by the following research work:
The costs of a military operation against civilians for 1 sq.km. of land: using conventional weapons is $2000, using a nuclear weapon is $ 800, using neurotoxic gases is $600, using biological weapons is $ 1 (from the research conducted upon the request of the UN)

Taking into account the abovementioned facts and the sad modern tendency for the growth of the number and intensity of local wars the competent and first of all available modern complex medical aids provided directly on the site of a battle becomes something of primary importance.

LEGAL INTERACTION OF PATIENT AND PHYSICIAN

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Legislation of physicians and patients improve and change. To understand the situation of healthcare in Russia, it's important to know a few aspects of our history.

Firstly –medical care is free.
In the 20th century the government developed principles of public health. Some of the successful ones are:
- the prevention of social diseases;
- the increased quality health care;
- the cooperation of medical science and practice;

The principles that are negatively affecting medicine these days are:
- free medical care. (There is mandatory and voluntary health insurance in Russia. People used to believe that health care must be free, but only some others think of the finance industry. We are in a vicious circle: low salaries, small contributions and a lack of financial help for high-tech industries. It is difficult to imagine when the circle will break. There are already enough free services.)
Voluntary insurance – it is not clear who is deceiving whom. De ure - it is only the convenient and quick, de facto - this is the same as mandatory insurance, but at a high cost. The prices are increasing for the care of chronic diseases.. Of course, everybody knows, when you reach 30, chronic diseases of the digestive, respiratory and cardiovascular systems can begin.

Secondly – the territory of Russia.
For a long period we have been unable to provide training for physicians for all regions. It's dependent upon money and opportunities. We are not able to motivate young scientists to go far from Moscow and other large cities.

Thirdly - the legal system of medicine.
At the moment, our doctors are unprocessual people. A physician can study and that is all. Legal literacy is growing, people are aware of the situation of doctors in Europe (although they may be mistaken.) I mean, people are demanding and sometimes biased.

The patient and the doctor in the legal field.
Summary of the preceding sentence: many people want free medicine, such guarantees given by our constitution, and do not consider the costs demanded by modern science. I do not side with patients or doctors on this matter, but I'm interested in honest interaction between the two. You must formulate the rights of doctors, as professionals, as units of society.
If a patient has a claim on health care, about expertise. It's about medical errors.

There are two types of claims:
This examination of the quality of medical care and forensic examination. (I do not consider the military social and economic). Both are very important in the search for truth, but it is not consistent. The first is performed in hospitals, the second in a special bureau and are important for the court. The problem is that they are not compatible. Many refuse to understand why they do not align, but why we have one algorithm.

HEALTH AND SOCIAL JUSTICE

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Many philosophers claim that health is of no central importance to social justice, because it is mainly caused naturally or by ones individual behavior. But philosophical theories of justice like these ignore important empirical facts. Recently Public Health-theorists showed in detail that health is mainly socially determined. The Marmot-Review (2010) as well as the World Health Organizations-Report on the Social Determinants of Health (2008) show in detail that huge inequalities in health are socially caused and can be observed both in single states and as well as worldwide.

Therefore health should be treated as subject of social justice. Since health is mainly socially determined, society and politics should aim at promoting people's health, providing their basic requirements and reducing the social causes of disease and health inequalities. Health inequalities which are socially caused and avoidable must be regarded as unjust.

But which theory of justice could provide a sound foundation for treating health as subject of social justice adequately? The capabilities approach to justice seems to be promising for that purpose and my research currently is concentrated on developing a theoretical framework for the purpose of addressing problems of health justice based on this approach.

Unlike most egalitarian theories which concentrate on the equal distribution of material means and unlike such which concentrate on ones equal well-being, the capabilities approach concentrates on "a person's capability to do things that he or she has the reason to value" (Amartya Sen). The approach does not concentrate on what persons actually do, but what they are capable of doing if they want. Persons should be enabled to chose their aims in life and to seek them effectively. According to this theory of justice health is a precondition for other capabilities which should be warranted by demands of justice. A certain degree of health is required for realizing one's life plans whatever they may be.

Such an inclusive and demanding conception of health justice has grave consequences for health politics, which must be understood in a more comprehensive sense than traditionally. Health politics do not merely have to concern providing health resources and access to health care. Furthermore health politics according to this account should concern education, working and living conditions, environmental issues and much more – without leading to paternalistic politics. Last but not least a reasonable theory of health justice on this base should be broadened to issues of global health justice, because the social determination of health does not stop at national borders.

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THE USE MALDI-TOF MASS SPECTROMETRY IN MICROBIOLOGY LABORATORY ROUTINE WORK. IMPROVING SEPSIS DIAGNOSTIC

Sepsis is a potentially deadly medical condition that is characterized by a whole-body inflammatory state which is triggered by an infection. Sepsis is caused by septicemia – the presence of pathogenic organisms e.g. bacteria in the bloodstream. The only method of treatment is antibacterial therapy with different antibiotics which are chosen based on the data of the bacterial species identification and it's susceptibility to different antibiotics. Thus, the aims of clinical microbiology labs are the rapid and accurate identification of the infectious agent and the determination of its susceptibility to antimicrobial therapy.

To perform the microbiological study the blood sample is collected from a patient in a special vial and then is incubated in an analyzer which detects bacterial growth. If the growth is detected, that culture is called a microbiemia-positive culture. It is analyzed by cultivating it on culture dishes and performing different analytical tests. The bottleneck of this type of study is time that it is necessary for performing a described analysis. On average 24 hours are needed to obtain the microbiemia-positive culture, another 24 hours are needed to obtain growth on the culture dish and up to 24 hours may be needed to identify the microbial agent. Then at least 24 hours are needed to determine its susceptibility. That means there are 4 steps that take up to 96 hours in total from the collection of the blood sample from the patient.

Our research highlights the application of a proteomic-based method that allows saving up to 48 hours by accelerating steps 2 and 3, that helps to start more adequate antimicrobial therapy in earlier terms. Matrix-assisted laser desorption/ionization time-of-flight mass spectrometry (MALDI-TOF MS) allows the identifying of microorganisms in 2 hours after receiving microbiemial-positive blood cultures which were previously incubated in the blood culture analyzer.

The method of MALDI-TOF MS is based on obtaining a mass-spectra of ribosomal proteins of microorganisms which are used like "fingerprints" for the accurate identifying of the species by comparing with the spectra database. The level of identity is expressed by numeric value "Score" (in a range from 0 to 3, where 0 is the absence of an identity and 3 is a complete identity). This method has already been used for a long time for the identification of microorganisms from cultures grown on culture plates, but is not commonly used for the identification of microbiemial-positive blood cultures. Thus the objective of the study was to find whether this method could be used in routine work of a clinical microbiological laboratory.

We performed MALDI-TOF MS by means of a Microflex mass spectrometer (Bruker, Germany). We analyzed 49 microbiemia-positive blood cultures after incubation in a Bactec 9050 blood culture analyzer (BD, USA). For the analysis, blood cultures were purged with SDS and then proteins were extracted with ethanol/formic acid. Conventional identification was performed by routine phenotypic and immunological methods and identification was performed on the automatic bacterial analyzer Vitek II (BioMereux, France). All biological samples were obtained from patients of SCCH.

Among the 49 analyzed cultures, correct identification was performed in 92% of them. Roc-analysis showed the AUC of 0.86. Basing on the Roc-analysis Score, the value of 2.06 was chosen as the optimal cut-off level. False identification was obtained for blood cultures with more than 1 bacteria species. The mean time of identification for up to 10 samples simultaneously was 1.5 hours. The saved time, compared to conventional methods, was 24-48 hours.

In conclusion we can state that MALDI-TOF MS accelerates the identification of microorganisms in blood cultures by 24-48hrs in 92% of microbial-positive blood cultures in patients with sepsis. Although we still have to use classical methods together with MALDI-TOF MS because of the 8% of false results, we claim that 92% of patients can be provided with more adequate therapy at least 24 hours earlier. Despite that MALDI-TOF MS is unable to detect antibiotic susceptibility of microorganisms we can narrow down the selection of antibiotics by obtaining data on the range of the natural resistance of detected microorganisms and know the efficiency of certain antibiotics against detected species. In summary, low costs and the rapidity of MALDITOF MS can dramatically improve patients‘ care in hospitals.

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TICK-BORNE ENCEPHALITIS: PRECLINICAL INFECTIONS AND DISEASE PREVENTION AMONG PEOPLE BITTEN BY IXODID TICKS

Tick-borne encephalitis is a severe neurological disease transmitted to humans through the bite of ticks. The causative agent of the disease is a tick-borne encephalitis virus. To reduce the morbidity of tick-borne encephalitis and to prevent the onset of disease in people bitten by ixodid ticks the "Center for diagnostics and prevention of tick-borne diseases" has been operating in our institute since 1992.

Annually from 6.5 to 8.5 thousand people bitten by ticks visit the "Center" for medical help. About half of the affected people, for various reasons (the tick being lost, the mite not being suitable for the study, multiple bites) cannot provide the tick for research. In such cases, we use the blood serum of bitten persons to detect the presence of tick-borne encephalitis virus antigens. If the antigen is detected it is usually assumed to be proof of infection and valid reason for antiviral treatment. In this work we present the results of study of 14200 serum samples from people bitten by ixodid ticks in Irkutsk region (Russian Federation) during the recent 5 years from 2007 to 2011. To detect the antigen of the tick-borne encephalitis virus we used the ELISA diagnostic kit supplied by "Microgen" (Moscow). For the assessment of the incidence of TBE in the Irkutsk region, the official data from the "State report on the epidemiological situation in the Irkutsk region" was used.

During these 5 years the residents of 30 of 33 municipal districts of the Irkutsk region visited our center. Spatially, the Irkutsk region may be divided into 4 sectors. More than half of people attending the Center were bitten in the Irkutsk district (49.9%) and in the Irkutsk city itself (6.3%) .The average rate of incidence is a feature of southern districts that are situated in forested and taiga areas; low incidence is associated with remote districts and with districts situated in steppe areas. No people with tick bites came from 3 northern districts where the prevalence of ticks is extremely low, if any. Such a geographic pattern is determined by several factors. Of them the geographical proximity of place of the tick bite to the Center, the intensity of human interactions with nature and the abundance of ticks in nature play the main role. In average, we detected the TBEV antigen in about 3% of serum samples. This means that 3% of people bitten by ticks were subclinically infected with the virus and had a substantial risk of becoming sick. The prevalence of the TBEV antigen in serum samples from areas of forest and taiga landscapes and from Irkutsk city varied from 2,4% to 2,7% . Interestingly, the prevalence among people bitten by a tick in the areas of forest-steppe and steppe landscapes was significantly higher than in forested areas and varied from 4,2% to 6,3%. Single antigen positive serum samples were found in people who were bitten by ticks in the southern districts of the Irkutsk region and the northern areas. Positive samples in the northern regions indicate a significant risk of infection with tick-borne encephalitis at territories traditionally considered safe or low risk. People, whose blood was found positive for the TBEV antigen, were subjected to emergency prophylaxis of the disease using human immunoglobulin against tick-borne encephalitis. Of the 428 persons who received prophylaxis, no disease cases have been reported.

All age groups, up to 94 years, were affected by the bites of ticks. The largest number of complaints occurred among children aged 0 to 9 years (17.6%) and adults of working age.

A large role in health education, prevention and disease prevention EC is played by insurance companies. More than half of people who applied (53.1%) have a medical "Anti-tick" insurance policy. For the studied period, the proportion of people vaccinated against TBE was just over 8%. But, according to the National Health Regulations, the proportion of the population

vaccinated against TBEV in endemic areas should be at least 95%. Thus, in the Irkutsk region it is necessary to significantly increase the number of vaccinated individuals.

Conclusions. 1. On average, 3% of people bitten by ticks develop a subclinical infection of TBEV. 2. 428 people, whose serum samples contained TBEV-Ag, received preventive treatment against TBE with anti-TBEV immunoglobulin. In all cases no disease has developed and this displays 100% preventative efficacy. 3. A significant proportion (about 17%) of people who recieved medical help were children aged 0 to 9 years but, at the same time, the proportion of children and adolescents aged 10-19 years was significantly reduced (8,5 %). 4. More than half the people who came to the center after tick bites were voluntary insured against tick bites and tick-borne diseases; 5. In 2007-2011, only 8.2% of people who attended the "Center…" after tick bites were vaccinated against TBE.

IMMUNOREACTIVITY OF TEENAGERS LIVING WITH TECHNOGENIC PRESSURE

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The problem of the environment's influence to a population's health an important current issue of medical research. There are a lot of facts about the connection between air pollution and the increase of cases of different diseases. Some industrial centers of the Irkutsk region such as Angarsk, Irkutsk, Zima and Bratsk have a high or very high level of air pollution. The major source of air pollutants in these regions are from factories, thermal power plants, chemical and petrochemical industries. The average level of air pollution in Angarsk is high, the index of contamination (IC) is 15.9. The developing organisms of teenagers are the most sensitive to the influence of chemical pollutants. The investigation of the health of teenagers, who are living in technogenic conditions, is one of the important problems of modern medicine.

The aim of this work was to evaluate the immunoreactivity parameters of adolescents living with technogenic pressure.

The design of the investigation. The first group includes 156 pupil from Angarsk. The second group consists of 131 teenagers from Sayansk. The level of pollution in Sayansk is low, the IC amount is 4.8.

Integral indexes were used for the evaluation of different links of the immune system. The coefficients were calculated using a genogtam; indexes of phagocytic cell-protection (PCP) and specific immune lymphocyte-monocyte potential (SILMP). The relative levels of autoantibodies (auto-AB) to native DNA, to Fc- fragment IgG and to beta2-glycoprotein I of blood serum, which characterizes the general status of the immune system, were determined. The average body immunoreactivity of teenagers was calculated by relative levels of 16 auto-AB of different specificity, which reflected the state of their major organs and systems. Levels of interleukin (IL) 2 and 10 were determined in serum by immunoassay test kits.

Statistic calculation of the results was performed by applying the package «Statistica 6.0». The Nonparametric U-test Mann-Whitney has been used. The results of the investigation are presented as the median, the lower and upper quartiles.

The results. The indicators of PCP Angarsk's pupils were significantly higher (11.44 [10.27-13.39],p=0.03), than the same indexes of Sayansk's pupils (11.04 [9.43-13.07]). A change in indexes of SILMP potential between the groups was not revealed (p=0.13).

The level of IL-2 was small higher in group I (4.96 [2.93-8.49] pg/ml, p=0.08), than in group II (4.51 [1.59-7.25] pg/ml). The IL-2 activates factors involved in anti-viral and anti-inflammatory protection. The level of anti-inflammatory cytokine – IL-10 in blood serum was higher in the first group 4.86 [3.15-7.30] pg/ml than in the second group 3.33 [0.27-6.76] pg/

ml, p<0.01. It may be caused by the need to inhibit the antimicrobial response and the expression of anti-inflammatory cytokines

The synthesis of auto-AB in a healthy person is occur constantly. Changes of molecular composition of the organs and structures of the body cause changes synthesis of certain type of AB long before the clinical manifestation of the disease.

There are not any significant differences in the relative contents of auto-AB to native DNA between groups (p=0.75). The levels of auto-AB to beta2-glycoprotein I and to Fc- fragment IgG in group 1 of teenagers were higher (-0.18 [-12.56 – 9.77] and 6.73 [-2.55 – 16.38]%%, p<0.01, p<0.01 accordingly) than those of group II (-20.07 [-29.36 – 11.81] and -7.61 [-13.86 – 2.14]%%). High levels auto-AB are indicators of the activation of apoptosis in respective organs and tissues. They suggest that these increased AB levels are the result of latent inflammation. The average immunoreactivity of teenagers from Angarsk was higher (-23.90 [-35.40 - -15.00]%%) than in Sayansk (-30.5 [-39.60 - -23.87]%%, p<0.01). However, the decrease or increase of immunoreactivity beyond reference levels has been observed in only a small number of cases.

Conclusion. The changes in hematological indexes can indicate the enhancement of the process of nonspecific protection and stress of adaptive mechanisms in teenagers from areas with high levels of air pollution.
Higher levels of auto-AB, that characterize the immune system and changes in the cytokine status in schoolchildren from an area with high levels of air pollution may be results of latent inflammation.

The data obtained can be used for preventative measures aimed at protecting the health of the population.

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ASPECTS OF ADAPTATION OF STUDENTS TO STRESS. PROBLEMS OF STRESS RESISTANCE IN CONTEMPORARY INSTITUTES OF HIGHER EDUCATION

Education in the institutes of higher education requires particular exertion of all systems of an organism including visual and acoustic analyzers, memory mechanisms, attention stability and concentration. Apprenticeship is frequently accompanied by a rise in stressful situations e.g. (exams, tests).

According to contemporary conceptions, stress appears in difficult problematic situations wherein there is a lack of solutions. The state of exertion is the specific form of mobilization undertaken by the organism, aimed at dealing with difficult situations. Our research focuses on aspects of the adaptive reactions of students affected by social factors connected to their educational process.
There are two methods to solve a possible stressful reaction while studying: decreasing the academic load and the application of appropriate physical training.
The main focus of our research is the analysis of the adaptation factors of students to education and the study of the adaptive systems optimization process.

The efficiency of an environmental organism's adaptation depends on the inborn personal typological abilities of its higher nervous activity. However, as a result of the functional flexibility of higher brain segments these abilities can be trained.
Taking into consideration the effect of higher nervous activity on organism adaptation and the exploration of problems of deficiency, stress adaptation is covered within the framework of the application of physical training.

AGE-RELATED ASPECTS OF THE RELATIONSHIP BETWEEN HORMONES AND SEMEN PARAMETERS IN MEN

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According to WHO the presence of 15% of infertile couples in the country can be considered a negative demographic situation. In Russia approximately 17% of couples of reproductive age experience infertility, and more than a quarter of infertility cases may be attributed to male factors. The effect of paternal age on fertility is well known now, but in the north the body grows older faster and fertility declines earlier than in the midland. Adverse climatic conditions of the North have an effect on the hormonal regulation of the testis. Thyroid hormones are among the factors responsible for the male reproductive function, as involved in the regulation of gonadotropin secretion. In recent decades the reduced activity of spermatogenesis in men has been observed in different countries, this fact produced a discussion about the reasons of reduced activity of spermatogenesis and its hormonal markers. The levels of testosterone and free testosterone were used as such markers in clinical studies, but the levels of thyroid hormones are also useful markers. Some authors showed an increase in testosterone levels after treatment with thyroid medication.

The purpose of this research was to examine the magnitude and the shape of the relationships between age and semen quality, sperm concentration and thyroid hormones in a non-clinical group of men.

METHODS: Sperm and blood samples were acquired from 97 men (aged 22–60 years) without any known fertility problems. All volunteers are living constantly in Archangelsk city. The men provided information relating to their lifestyle, diet, medical and occupational details. The levels of thyroid hormones, sex hormones, sex hormone binding globulin, sperm antibody, inhibin B and sperm quality were measured.

The men were divided into three age groups: group 1 - 22-35 years (n = 54), group 2 - 36-45 years (n = 22), group 3 - 46-60 years (n = 21). Hormone concentration was determined by the enzyme immunoassay test, produced by Human, Germany, on Elysis Uno immunoanalyser (Human, Germany). Assessment of the semen samples was performed together with the Institute of Cytology and Genetics (The Siberian Branch of the Russian Academy of Sciences) on Sperm fertility analyzer SFA-500 ("Biola", Moscow).

All analyses were performed with STATA statistical software version 6. Shapiro-Wilk's W tests did not show a normal distribution. So we used nonparametric methods for statistical analysis. The Mann-Whitney test was used to test for the difference between the medians of two independent groups. The relationships between hormones and sperm parameters were analyzed by Spearman's correlation coefficient. CONCLUSIONS: In the second age group (36-45 years) the men had lower levels of progesterone, cortisol, free testosterone, DHEA-S and a higher level of SHBG compared to young men aged 22 to 35 years in the absence of age-related changes in the total testosterone level. However age-related changes of TSH (thyrotropine), free T4 (thyroxin) levels and semen parameters began only in the third age group.

The relationship between the total sperm count and thyroid hormones was statistically significant across all age groups. Semen parameters have positive correlations with the concentrations of iodothyronines, free testosterone, inhibin B and sperm antibodies. Negative correlations were observed between the content of iodothyronines and pH, as well as between the semen and the level of SHBG. At the age of 46-60 years, positive correlation was shown between free T4 level and percent progressively motile sperm. That means that thyroid hormones could regulate reproductive functions in men.

Semen quality is generally considered to be a proxy measurement of male fertility, and semen quality varied with some lifestyle and medical factors, such as smoking and alcohol drinking. But in our study we did not find significant correlations between sperm and smoking history, between sperm and frequency of alcohol use which indicates that there are significant individual differences in sensitivity to alcohol and smoking.
The proportion of men with abnormal volume, concentration and motility of sperm was significantly increased across the increasing ages. The median semen volume and sperm motility decreased after 45 years of age.

Because of the impairment of fertility all around the world it is important to study male reproductive potential in adverse climatic conditions of the North. Now we have a great foundation of a hormonal panel of men living in the Polar Region and our institute is going to study semen quality in healthy men of this region.

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METEOROLOGICAL FACTORS AND THE SEVERITY OF PNEUMONIA IN YOUNG MEN

The high frequency and often serious complications of pneumonia require new studies to improve the knowledge of clinical and pathogenic characteristics of the disease in different climates and weather conditions.

The purpose of our research became a comparative evaluation of the clinical features and the severity of pneumonia in connection with how it is influenced by solar activity, a geomagnetic field and seasons of seasonal diseases. The data of 8115 medical case histories of the patients who were on treatment in the pulmonology unit in 301 Khabarovsk military hospital during the period of 2001-2010 in connection with pneumonia of unilateral localization are studied. The results were analyzed using statistical methods of the Fisher and Mann-Whitney tests.
The age surveyed was in the range of 18-32 years. More than 90 % of the patients smoked. The overall ratio of infections of pneumonia for the right and left sided localization were respectively 55,0 % and 45,0 %, which is exactly in line with the average ratio of the pulmonary volumes of both lungs. More often the pneumonia was located in the lower lobe.
A comparison of the dynamics of the relationship between pneumonias which are located in either the right or left sides of the lungs by years showed cyclic recurrence and significant variability in this indicator. Thus, the relative frequency of right-sided localization changed from 50,6 % in 2002 up to 67,6 % in 2007 ($p < 0,05$). The analysis of this parameter depending on a the season of the disease did not show any seasonal differences (0,05). The comparative assessment of the severity of right sided pneumonia and by the criterion of the duration of a patient's stay in a hospital has shown that left sided pneumonia, as a whole, infects a small amount of these patients, but a significant excess of the patients who stay in the hospital have pneumonia with a right-hand localization. Similar differences have been found in comparison with the duration of pneumonias that are located in the lower lobe ($p < 0,05$). Significant differences of the duration of a right-and a left sided pneumonia infection by years and by season were not detected ($> 0,05$).
The additional analysis of 205 case histories of patients with severe pneumonia showed that a right-sided localization of such pneumonia occurred in 138 patients (67,3 %), and left sided localization-in 67 (32,7 %). Such prevalence of right-hand localization of the current disease was significantly higher than in the total group surveyed ($p < 0,05$).

Thus, our research has shown significant variability in the ratio of right-and left sided localization pneumonia by increased years (but not by seasons!). We found that, in general, right-sided pneumonia in young men proceeds a little more severely, than left sided.

REPLICATION INHIBITORS FOR FLAVIVIRUSES: MOLECULAR DESIGN AND PUTATIVE MECHANISM OF ACTION

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Flaviviral infections represent a substantial problem for public health all around the world. Flaviviruses are enveloped viruses, which cause severe diseases such as dengue fever, West Nile fever, Japanese encephalitis, tick-borne encephalitis (TBE), yellow fever, etc. These diseases can be transmitted by mosquitoes or ticks. Mosquito-borne fevers are most common in tropical and equatorial regions, whereas tick-transmitted diseases are more common in Europe, Siberia, and Canada. There is no common treatment for flaviviral diseases. Vaccines are available for TBE, yellow fever and several other diseases, but after the infection only symptomatic treatment is generally used. Immunoglobulin therapy can be an option in the case of TBE, but its use is non-convenient. Thus, an urgent need for small molecule anti-flaviviral drugs is obvious.

Several strategies were suggested for post-infection treatment of flaviviral diseases, including the development of monoclonal antibodies, inhibitors of viral non-structural enzymes, and inhibitors of the viral fusion, which bind to the envelope proteins. The first fusion inhibitors were designed for dengue virus (DENV) with the help of docking-based virtual screening against the detergent binding site, which is present in one of the X-ray structures of DENV envelope proteins.

In our work, homology models were built for the envelope proteins of the tick-borne encephalitis virus (TBEV), Powassan virus (POWV), and Omsk haemorrhagic fever virus (OHFV), based on the aforementioned DENV template structure. Virtual screening of the ChemEx laboratory library of small molecule compounds (5886 entries) was performed against the detergent binding site. One hundred compounds were selected for further in vitro testing based on score values and visual analysis of the binding modes. In vitro testing and IC50 determination was performed in a plaque growth assay; 7 compounds have shown a protective effect against TBEV, 2 compounds — against POWV, and 9 compounds — against OHFV. Cytotoxicity assessments have shown that the therapeutic index of the selected compounds is acceptable, and they can be used for further in vivo evaluation.

Analysis of the inhibition mechanism was performed by means of molecular dynamics (MD) simulation. Earlier we have shown that bending of the envelope protein ectodomain dimer during an impilicit solvent MD simulation correlates with the stability of the virion. The simulation of the complex of the protein and an active compound have shown that the binding of the inhibitor also impairs the virion's stability. Thus, fusion inhibition may be attributed to this binding mode.

The main result of this work is a scheme of search for new flaviviral fusion inhibitors, including steps from computer simulation to in vivo evaluation. A search for novel, more effective and tolerable inhibitors is underway.

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FEATURES OF DIABETES MELLITUS IN YOUNG PATIENTS

The prevalence of diabetes mellitus (DM) increases world-wide, as well in an increasing number of young patients (debut of diabetes up to 30 years).

Priority areas in the management of diabetes include strategy development, disease prevention and differentiated approaches to its treatment. Therefore, it is important to promptly verify the correct type of DM, as along with types 1 and 2, there are monogenic forms, differing the clinical course and prognosis.

The purpose of this research was to investigate the characteristics of onset and course of diabetes in young patients. We used the Register of the City and we formed a sample of 70 patients who had a family history of diabetes and the onset of the disease to 30 years of age. All patients performed a clinical examination, blood sampling for biochemical and hormonal analysis, for the presence of antibodies to b-cells and molecular genetic testing.

All patients were divided into two groups, regardless of the type of diabetes: one group consisted of patients with C-peptide levels below the reference value (54 patients), group 2, - patients with normal values of C-peptides (16 patients). All patients of group 2 had a diagnosis of type 2 diabetes. Among the first group, 34 patients were diagnosed with type 1 diabetes (63%), 20 had the monogenic diabetes type (27%). Patients who have a low level of C-peptides need a more thorough differential diagnosis of their diabetes type, especially when they have an atypical onset of the disease (no ketoacidosis, weight loss). In most cases, doctors cannot diagnose the type of diabetes in these patients without the use of special methods (molecular genetic testing).

The average age of the patients of group 1 (for C-peptides) was 26,1 to 14,4 years, in Group 2- it was 27,6 to 10,0 years, the average age at onset in group 1 was 16,6 to 10,8 years, in group 2 it was 22,9 to 7,8 years ($p = 0,014$). Among the clinical parameters of groups 1 and 2 the important data was: the average body mass index (21,6 to 4,3 kg/m2 and 25,5 to 6,5 kg/m2, respectively), the number of patients with a skin rash of unknown origin (18% and 56%, $p = 0.002$), the absence of symptoms at the onset (28% and 56%, $p = 0.035$), weight loss at the onset of the disease (44% vs 12%, $p = 0.020$), use of insulin (72% and 12% $p < 0.001$). Additional laboratory tests statistical significance was only the HDL ($p = 0.02$). Antibodies to b-cells were positive in 3 people from the first group (6%) and 1 in group 2 (7%).

Conclusions:

1) Young patients need a more thorough differential diagnosis of their diabetes type.

2) It is important to determine the level of C-peptides for the differential diagnosis. Patients with low levels of C-peptides and that have an atypical onset of the disease need additional diagnostic methods.

3) The detection of antibodies in b-cells may not have clinical significance, but it is required evidence on a large sample.

4) Patients with a diagnosis of type 2 diabetes have frequent skin rashes, it can be used as a phenotypic marker of diabetes.

5) Young patients achieve good control of their diabetes by using diets and hypoglycemic agents (not insulin).

GENETICS OF LYMPHEDEMA AND HYDROCELE IN LYMPHATIC FILARIASIS

The filarial nematodes Wuchereria bancrofti and Brugia spp. cause lymphedema of the limbs and hydrocele which are diseases of severe morbidity in tropical regions. Although 120 million people are infected with these parasites, only 7% will develop lymphatic disease symptoms and 50% of men will develop hydrocele. Studies have shown that susceptibility to the infection has to do with the parasite load and lymphatic pathology cluster in families independent of the household and the environment. However, only a few studies have looked for genes associated with lymphatic filariasis. Working with partners in Ghana we have genotyped Africans infected with W. bancrofti to identify single nucleotide polymorphisms (SNP) associated with the development of these diseases. We focused on genes that have been linked immunopathology and angiogenesis in 400 lymphedema, 400 hydrocele and 400 infected without pathology individuals. We have found a haplotype of two SNPs of the caveolin-1 gene, a regulator of TGF-beta signaling, associated with hydrocele and a SNP in metalloprotease-2, involved in tissue remodeling, associated with both pathologies. These SNPs have the potential to be developed into biomarkers to identify those who are at a greater risk of pathology development and to help begin intervention to prevent pathology development or reduce the pathological stage with physician treatment.

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DEXTRANS AS LIGANDS OF MANNOSE RECEPTOR AND DC-SIGN FAMILY RECEPTORS – NEW ANTI-INFECTIVE STRATEGY

In mouse tuberculosis models conjugates of medical dextrans (poly-α-1,6-glucosides with MW of 35-75 kDa) with isoniazid decreased the number of granulomas 2-fold and the fibrotic changes in organs were reduced several times. It can be explained by the unknown action of dextrans. Prophylactic administration of oxidized dextrans OD (<3% oxidized glucose) to mice infected with avian influenza A/H5N1 decreased the lethality by 3.3 fold and led to significant decrease of fibrosis. In a model of candidiasis the number of granulomas in the brain was 8 fold less after OD treatment. All mice in the control group died, 60% of the mice treated with OD survived.

We reviewed the dextrans' properties and offer the hypothesis of their therapeutic action in many infectious diseases. Dextrans are specifically bound by two types of receptors: mannose receptors (MR) and DC-SIGN family receptors (DFRs). They take part in the recognition and uptake of pathogens (mycobacteria, candida, influenza virus, HIV, hepatitis virus). For pathogens the interaction with MR/DFRs is proven to affect efficient immune responses. Since dextrans selectively decrease the amount of available MR and DFRs on the surface of immune cells, they may help to promote the development of more effective immune responses.
The application of dextrans may provide a new mechanism of treatment of intracellular infections including tuberculosis, HIV, viral hepatitis and influenza. We suggest new perspectives for dextran application in medicine as a means of immune modulation.

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THE RIGHT TO HEALTH AS A CONSTITUTIONAL VALUE IN RUSSIA AND GERMANY: THE COMPARATIVE ANALYSIS

The constitutional right to health in Russia and Germany is one of the most important constitutional values. On the basis of comparative analysis in our study we try to understand the constitutional value of the right to health. First, I want to show the system of the constitutional values in the constitutional axiology of Russia and Germany. We don't discuss its hierarchy, but we should note that it depends on the differences of legal systems and cultures. The system of constitutional values includes the constitution as a certain value of the axiology, constitutional principles (equality, legitimacy), constitutional order (federalism, self-government) and human rights.

The right to health is one of these human rights. Human rights are a construct of the 20th century and historically stem from the idea of natural rights. The concept of natural rights was first presented by the philosophers John Locke, Jean-Jacques Rousseau and Thomas Hobbes, but you can ask what human rights are? Some answers we can find in a lawyer's dictionary. For instance it can be defined as "a power, privilege or immunity secured to a person by law", "a recognized and protected interest of which the violation of it is wrong", "a legally enforceable claim that another will do or will not do a given act". In the last case we have to talk about human rights as subjective rights. Human rights are a construct of the 20th century and historically stem from the idea of natural rights. Jeff R. Wagner said in his work that positive rights are rights to assistance and perhaps the right to health is one of them.

Another aspect on which we turn our minds to is the fact that today most human rights have their own legal base (at least international). That fact correlates especially to countries with non-written constitutions. Certainly the consideration of domestic laws is necessary. In the Russian Constitution we see "the right to health and medical care" (art. 34, 35), in German Basic Law we can't see the right to health as an explicit definition, but it's a part of the right to human dignity (art.1). Courts' decisions also play a significant role in the definition of internal content regarding the Right to health. For example, analysis of The European Court of Human Rights Decisions can show us that really the RH is not an individual right but in most cases health can be private or public.

Then I had analyzed decisions of the Constitutional Courts of Russia and Germany and I had mentioned that the questions and problems, which are described in them, are different. For instance one of the last decisions of The Federal Constitutional Court of Germany raises the topic about banning passive smoking in eating and drinking establishments. The Court had found a violation of the principle of equality if the law is allowed, by way of exception to the statutory ban on smoking in eating and drinking establishments. Separate smoking rooms have been provided in drinking establishments, but this excludes eating establishments from having this privilege, but as a contrast, in Russia we do not have the same law but certainly the same problem can arise here. Despite the fact that we have different legal problems nevertheless, constitutional principles are similar.

As a result of the investigation I had built logical structure to the Right to health. It consists of the internal content – the particular rights and obligations of the state laws, subjects - entitled and obligated at the same time (public: state, international organizations; private: individuals, family, society (including companies, partnerships)); object – the health; guarantees and restrictions; methods of protection (judicial, administrative, self-defense, corporate defense).

READING GALEN IN BAGHDAD – GREEK-ARABIC MEDICAL HISTORY AND IBN SAYYAR'S COOKBOOK

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Our knowledge of the Galenic medical theory would be very scarce, had his works not been translated during the so-called "translation-movement" in the capital of the Abbasid Empire, Baghdad. In the 8th-9th centuries Christian and Arabic scholars like the famous Hunayn ibn Ishaq (died 873) or Abu Ishaq al-Kindi (died ca. 870), translated classical Greek works of philosophy and related fields, such as mathematics, astrology, and medicine, into Syriac and Arabic. While Syriac was the indigenous language of the central Middle East and the language that most of the Christians spoke, Arabic was to become the lingua franca and scientific language of Islamic culture. It was being used by scholars from Islamic Spain to Central Asia.

Among the works translated from Greek were more than 120 treatises written by Galen (died ca. 216). On the one hand, these translations served as textbooks for the Christian doctors in the famous hospital in Gondeshapur and for medical research all over the Abbasid Empire. On the other hand the translations and other medical treatises written by Muslim physicians were carried to Islamic Spain and were further translated into Latin. Thus, these translations not only triggered medical research in the Islamic Middle East but also had a great impact on early modern medical training in Europe.
One of Galen's works, Peri Trofon Dynamaion (On the Properties of Foodstuffs) which Hunayn translated as Kitab al-aghdhiya (The Book of Foodstuffs) had a particular influence on Islamic food culture. In this work food is classified in regard to Galen's humoral theory. According to this theory the world consists of four basic elements: earth, water, air and fire. Each of these elements comprises two properties: earth is cold and dry, water is cold and moist, air is hot and moist, fire is hot and dry. Every natural being consists of a specific combination of these four properties: cold, hot, dry and moist. In most people some properties, in this context called humors, dominate according to the degree of their four bodily fluids (blood, phlegm, yellow bile and black bile). Through eating it is possible to clear one's unbalanced set of humors. For example: during fever, the bodily humors tend towards hotness and dryness. If served moist and cold food the feverish person's humors will become balanced and the person will recover.

Although Hunayn's translation is not preserved, the Galenic humoral theory is visible in the oldest existing Arabic cookbook. This cookbook (title: Kitab al-tabikh, The Book of Cooked Food) was written in the 10th century by a man called Ibn Sayyar al-Warraq (died ca. 940). It consists of 615 recipes in 132 chapters and was compiled for the kitchens at the caliph's court in Baghdad. The cookbook starts by listing all the ingredients for the dishes, including their humoral qualities. Then it goes on to mention various meat, poultry, fish, and vegetable dishes before it gives the recipes for deserts and non-alcoholic (and alcoholic) drinks. It finishes by stating the various table manners a boon-companion of the caliph has to observe when invited to the caliph's table.

A small number of recipes are included in the cookbook which have aphrodisiacal effects. Among them is a simple carrot drink spiced with nutmeg which is said "to warm up your kidneys and invigorate coitus". This recipe not only proves the dietetic or medical function of the dish, but also shows that sexual stimulants were known at the caliphal court. If such aphrodisiacs were used for pleasure only or whether they were used in order to secure the continuation of the Abbasid dynasty is not mentioned. What is clear however is the importance that Ibn Sayyar's cookbook has for researchers on social history and for the study of Galenic thought in Islamic medical history.
(This text is a shortend version of my paper: Cooking and Arousing. Aphrodisiacs in Ibn Sayyar's Cookbook. In: P. Franke et al. (eds.): Körper, Sexualität und Medizin in islamisch geprägten Gesellschaften. In Print.)

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DIETARY FACTORS IN THE REGULATION OF CROHN'S DISEASE-LIKE ILEITIS

Inflammatory bowel diseases (IBD) comprising Crohn's disease (CD) and ulcerative colitis (UC) are chronic relapsing inflammatory disorders of the gastrointestinal tract. Accumulated evidence suggests that a combination of environmental factors such as smoking or ones diet may contribute to an unbalanced immune-response against the commensal microflora in a genetically susceptible host. The TNFΔARE/WT mouse resembles a model for CD, which develops chronic ileitis under conventional conditions, being provided a standard Chow diet. By contrast, we could show that the pathogenesis of Crohn's disease-like ileitis could be inhibited by early dietary intervention by using a semi-synthetic experimental diet (Exp). The protective state was associated with decreased expression of proinflammatory cytokines, pattern recognition receptors and homing related addressins in distal ileal tissues. Although dietary intervention was not associated with a phenotypic change of CD8+ effector IEL/LPL subpopulations, we did observe an overall decrease in infiltrating leukocytes. However, administration of an experimental diet was not effective for the induction of remission in an already established inflammatory setting. Moreover, supplementation of an experimental diet with low concentrations (10%) of Chow was sufficient enough to induce maximal chronic intestinal inflammation. The FT-IR analysis of cecal contents from Chow and Exp treatment groups showed diet-related differences in the spectral distance. However, no alteration in antigenicity could be observed in a co-culture model of cecal lysate pulsed BM-DCs and CD4+ T-cells. Furthermore, gluten was identified as a dietary antigen that plays a role in Crohn's disease-like ileitis. Peptic tryptic digests of gluten induced TNF secretion in the total MLNs and a gluten fortified experimental diet could induce chronic ileitis in TNFΔARE/WT mice. The protective effect of experimental dieting, inhibiting mucosal inflammation could be confirmed in the IL-10-/- mouse, whereas results in a T-cell transfer model of colitis seemed to be equivocal.

In conclusion, we could show that Crohn's disease-like ileitis can be inhibited by dietary intervention using a semi-synthetic experimental diet. Unraveling the underlying mechanisms might reveal new concepts for the improvement of nutritional therapy in IBD patients. Moreover, gluten fortification of experimental diets could reverse the protective effect. Thus, the TNFΔARE/WT mouse might serve as a new model for spontaneous gluten intolerance.

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PERIODONTAL DISEASE AS A MEDICAL AND SOCIAL PROBLEM

Recently, interest in adult orthodontic treatment has increased significantly. However, the rate of complications found during orthodontic treatment remains high. These include root resorption of teeth, gum recession, the initiation and further progression of chronic inflammatory periodontal disease which includes bone resorption. Periodontal disease is one of the most common diseases of an oral cavity, which in its later stages can lead to complete destruction of the bone surrounding the tooth and even result in tooth loss. Of the most major dental problems periodontal diseases are the second most common after dental caries. According to WHO, 85-90% of adults suffer from periodontal diseases. Peri-

odontal diseases can occur at any age but is most common in patients that are in their adulthood. More than 75% of people with periodontal pathology are among the most able-bodied population. One of the complications of the inflammatory process in the bone-repositioning teeth is violations of diction, the act of chewing and aesthetic dissatisfaction. In the last decade, the introduction of innovative technologies in dental practice allows us to effectively prevent these complications. To date, there is no consensus on whether correction of dentofacial anomalies in adult patients who have gum disease. Many clinicians are wary of orthodontic treatment for these patients, because they believe it leads to a deterioration of the gums. Other researchers believe that orthodontic treatment is an important link in the complex treatment of these patients, as this creates opportunities to stabilize and stop the further progression of the disease desen. Earlier it was postulated that a key role in bone resorption in a controlled movement of the teeth play an osteoclast cell lines .The functional activity of the latter is substantially affected by the enzymes produced by the microflora of periodontal pockets and disruptive load. Over the long-term combined effects of these factors, the rate of bone resorption significantly increased, increasing the mobility of the teeth and weakening its stabilization in the tooth row. The lost cortical and trabecular bone is replaced by fibrous connective tissue which is not able to perceive adequate chewing loading. The products of the degradation of the bones enter the systemic circulation and are excreted in the urine. In the process of monitoring patients they are represented in actuality of the problem of timely diagnosis which causes bone resorption. For these purposes, successfully use the following research methods: determination of biochemical markers of bone resorption (total hydroxyproline, pyridinoline, tartrate acid phosphatase, bone-terminal telopeptides of collagen), bone morphometry (definition of osteoclast index of osteoid bone resorption lacunae counting), and X-ray methods (determination of bone density in the alveolar ridge between roots partitions and periradicular region, and type of bone resorption: vertical, horizontal and mixed). These positions are at the heart of developing the criteria of monitoring the state of the periodontal tissues in adult patients in an instrumental variable disruptive load. Another clinically important patient monitoring problem is the regulation of bone metabolism by the use of pharmacological tools that selectively block the functional activity of cells osteoklastis stimulating osteoblastic activity of cells lines producing bone collagen. Also actual topical therapy, multimineral and vitamin complexes that increase bone mineral density. All-round development of this group of patients will reduce the incidence of complications of orthodontic treatment for inflammatory and destructive periodontal lesions.

URODYNAMIC DISTURBANCES OF THE LOWER URINARY TRACT IN VARIOUS CONDITIONS

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Population ageing is a considerable problem in modern society. By some predictions the moment when 1/3 of planet's population will be older than 60 may come soon in the XXI century. As the world's population grows old, the incidence rate of so-called geriatric diseases increases correspondingly. Many of such diseases lead to micturition disorders such as: urological diseases (i.e. benign prostatic hyperplasia), gynecological diseases (i.e. urogenital atrophy in postmenopausal women), neurological diseases (i.e. Parkinson's disease), orthopedic diseases (i.e. osteochondrosis) and long-term obstetric complications manifesting in elderly women.

Micturition disorders may severely impact the quality of life by affecting personal hygiene, social adaptation and the quality of one's sleep. Since such patients' complaints rarely may be evaluated objectively and precisely, a diagnos-

tic tool which allows the physician to determine urination quality comes in handy. This diagnostic tool is called an uroflowmetry and it is widely used, though its diagnostic potential may not be fully recognized yet. The purpose of the study is to determine the potential of the uroflowmetry in the fine diagnostics of various diseases.

Uroflowmetry protocols and corresponding registry data for 2010-2011 were extracted from the computer database of the urodynamics laboratory in the urology clinic of Saratov SMU. Statistical analysis was performed on the extracted data. Raw mathematical models of uroflowmetry curves for different types of urodynamic impairment were built.
The total number of patients was 1292; the total number of uroflowmetry studies – 1618. This means that some of the patients had their urination evaluated continuously to determine the outcome of the initial treatment. The uroflowmetry control before and after treatment was performed on 129 patients suffering from benign prostatic hyperplasia:

- Qmax became normal in 71 patients (55,04%).
- Qave became normal in 61 patients (47,29%).
- Both parameters became normal only in 55 patients (42,66%).

The lack of micturition improvement during repeated uroflowmetry studies in patients who receive conservative treatment for benign prostatic hyperplasia tells the urologist that more aggressive forms of treatment are justified.

Also of interest was an attempt to calculate several indexes which mathematically describe the shape of an uroflowmetry curve. The differences between two large groups (obstruction by an enlarged prostate and narrowing of the distal urethra) came out statistically significant.
The conclusions of the study are as follows: 1. An uroflowmetry is a reliable and an objective diagnostic tool; 2. Uroflowmetric control of the treatment results in benign prostatic hyperplasia allows for the proper switching of tactics. 3. An uroflowmetric curve shape and the mathematical indexes describing it have diagnostic value.

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DETECTION OF VASCULAR CHANGES WILL HELPS TO PREVENT CARDIOVASCULAR DISEASES, COMPLICATIONS OF DIABETES MELLITUS

The World health organization reports that cardiovascular diseases (CVDs) remain the biggest cause of global deaths worldwide. More than 17 million people died from CVDs in 2008. According to the prognosis, CVDs morbidity will rise globally. It is known diabetes mellitus (DM) plays an important role in CVDs development by having a negative influence on vascular walls. In 2010 285 million adults worldwide had diabetes and by 2030 DM morbidity will rise by 54 %.

According to the epidemiological data CVD and DM prevention remain a major challenge for the general population, politicians and healthcare workers. There are a number of worldwide and national organizations working for the creation of strategies of primary, secondary CVD prevention.
At the time two approaches towards the prevention are determined: the population strategy and the high-risk strategy. The first one aims at reducing the CVD's incidence in the general population through changes of the lifestyle and it is orientated onto people with an average risk of CVDs. The second one is aimed at reducing the risk factor levels in patients with the highest risk. It is interesting that at the every level of risk factor exposure, there is a variation of CVD development and progression. This variation is probably due to genetic susceptibility, combinations of different risk factors and interactions between genetic and environmental factors.

It may be useful to detect the markers which could characterize the condition of development and progression of CVDs. The markers may improve CVD risk prediction and DM complications.

The contemporary theory of CVD development says that risk factors (smoking, obesity, hypertension and so on) act on the arterial wall and cause functional (endothelial dysfunction) and structural changes (arterial stiffness, arteriosclerosis) to it. The structural changes lead to tissue injuries and the development of CVDs. These take part in the early stage of CVD's structural and functional changes of the arterial wall and might be the markers of CVD's development. That was shown in some studies. It is known that people with the RF and functional changes have a worse prognosis for CVDs development than those who have only risk factors. The result of meta-analysis shows the significance of these structural changes for CVDs development. One more important fact is that the changes in macro - and micro vessels play a different role for CVDs development and have a different prognostic meaning. The change in conduct vessels led to the rise of arterial stiffness and atherosclerosis development that disturbed the normal hemodynamic and tissue perfusion. The changes of micro vessels led to damage of the tissue and target organs and accelerate CVDs development. So the complex assessment of the vessels' condition in the different levels of the vascular system is more important in clinical practice for the prognosis of CVDs and for the assessment of the efficiency of the treatment.

THE ROLE OF THE GONOCOCCAL INFECTION AND ITS COMBINED FORMS WITH SEXUALLY TRANSMITTED INFECTIONS IN THE DEVELOPMENT OF CLINICAL AND HISTOPATHOLOGICAL CHANGES IN THE CERVIX

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Sexually Transmitted Infections

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One of the most significant health and social issues at present are sexually transmitted infections (STIs). The data shows a rate that still remains at a high level and in 2010 the figure was 173.2 cases per 100,000 people. In the structure of STIs three major infections have had a leading role for many years. They are the gonococcal, chlamydial and trichomonas infections. According to many researchers in recent years, the increase in mixed forms of STIs is observed in 56% of cases. As it is known, STIs lead to inflammatory diseases of the genital organs and one of these forms is chronic cervicitis.

The aim of this study was to determine the clinical, morphological and functional features of the cervix mucous membrane during a gonococcal infection and its association with other sexually transmitted infections.

The clinical examination was carried out in the Orenburg regional STI clinics. The patient's surveys included clinical methods and a laboratory diagnosis of their STIs. A biopsy of the cervix was produced after the treatment and the establishment of clinical and microbiological cure rates of the controlled STIs, at 5-7 days of the menstrual cycle. Complex morphological analysis of the biopsy material was performed at the Department of Cytology, Histology and Embryology of Orenburg State Medical Academy. Carrying out this work we examined 60 women suffering from infectious and inflammatory changes in the cervix over a period of 1 year to 5 years. In the first group there were women with chronic cervicitis associated with a gonococcal infection. The second group represented women with chronic cervicitis associated with gonococcal and chlamydial infections. The third group consisted of patients with chronic cervicitis associated with gonococcal and trichomonas infections. And the fourth group – was the control group

Results: The women aged 18-25 are the dominant group of patients with infections, and women aged 36-45 are the control group. While analyzing complaints, it was noted that the complaints occurred less than half the time and frequent complaints could be attributed to periodic discharge and itching. Also, complaints were given around the lack of pregnancy. Significant changes were characterized histologically in the cervical mucus by individual differences. In the first group the mosaic patterns of the structural and functional organization of the epithelium - the alternation of the normal structure of epithelial cells with destructive changes - was seen in 55% (11) of the patients. In the second group these changes were observed in 73.9% (17) of the women, in the third - in 64.7% (11) of the women. In the control group, similar changes were observed in 21.7% (5) of the women. Severe infiltration of leukocytes against the blood vessels' microcircular channel, which are dominated by lymphoid elements in a single layer, and in the stratified epithelium (MOE), was noted in all groups. The basement membrane of the epithelium of the mucous membrane of the cervix was thickened and loosened with a violation of the integrity of 55% (11) of the patients from the first group, 69.6% (16) from the second group of women and 64.7% from the third examined group. In the control group, similar changes were observed in 21.7% of subjects. The transition boundaries of two types of epithelial tissue were clear, without transition zones in all subjects. Low mitotic activity in a single layer of columnar epithelium was observed in 80% (16) of women in group one, 91.3% of women (21) - in group two and 88.2% of women in group 3 (it was reported in 15 women). In the control group, similar changes were observed in 34.8% (8) of the women. In the stratified epithelium mitotic activity was high, observed in: 55% (11) patients of group 1, in 86.9% (20) of group 2 and 70.6% (12) of group three. The control group women showed a figure of 47.8% (11) for this observance. Low mitotic activity of a single layer of columnar epithelium shows a decline in its reparative capacity.

In conclusion we can state that women of reproductive age with chronic cervicitis suffer from gonococcal infections and its combined form without any symptoms. Destructive changes in cervical mucus and reduced reparative features of single-layer columnar epithelium occurred frequently in women with combined forms of gonococcal infection. Thus, changes in the morphological cervix structure in women are more common in older, postmenopausal women, and the risk of complications increases as well with age.

JUNIOR SCIENTISTS

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MONITORING OF MEDICINES SYNTHESIS REACTIONS UNDER TECHNOLOGICAL CONDITIONS

An effective novel inhibitor of human influenza A and B viruses, named Triazavirine, was developed in the Institute of Organic Synthesis (Ekaterinburg, Russia). Triazavirine is a product of a diazotization reaction, which is characterized by a few features: high speed, irreversibility and exothermicity. Deviation of technological parameters from the necessary values results in adverse reactions, reduces recovery of the useful product and can even cause emergency situations. Consequently, the automated measurement system for the monitoring of the development of a diazotization reaction is required to start an industrial scale production of Triazavirine.

To solve this problem, we have composed three independent measuring techniques into an automated measuring complex [1]. The complex is composed of three main parts: the unit for the thermal properties measurement, the optical measurements unit and the unit for electrical conductivity measurement. The feature of our approach is the simultaneous on-line monitoring by these three independent methods.

The method of a controlled pulse heating of a thin wire probe [2] is an unique experimental technique developed in the Institute of Thermal Physics (Ekaterinburg, Russia). An object

of study is a wire probe immersed into a liquid sample and the action function is an electric pulse that is nearly completely converted into heat. The probe combines the functions of the heater and the resistance thermometer. Consequently, the response function in this case, is the evolution of the probe's temperature, the characteristic heating curve. The differences in the heating curves under given heating power for different samples reflect the differences in the samples' thermophysical properties. Two other methods, providing optical parameters and electrical conductivity measurements, are more common, so we will not give a detailed description of them.

All three measuring cells are united by the single data acquisition system. Consequently, a simultaneous on-line monitoring by three independent methods is provided.

The automated measuring complex was implemented for the monitoring of a diazotization reaction. The experiment results have revealed the beginning of an adverse reaction. As a result, the possibility of a measuring complex application to the online monitoring of a diazotization reaction is shown.

RUSSIAN PUBLIC HEALTH STATISTICS IN MATHEMATICAL MODELING

JUNIOR SCIENTISTS

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The Russian Federation ranks first in the world in area with a population of over 143.000.000 people. It consists of 83 units (regions): 21 national republics, 9 territories, 46 regions (oblast), 2 federal cities (Moscow, St. Petersburg), 1 autonomous region and 4 autonomous districts. The Western and Southern parts of Russia are more densely populated but most regions beyond the Ural Mountains in Siberia and in the far north which have several time zones difference with Moscow have a very low population density. For example, the square footage of the region Krasnoyarskiy Kray in Siberia is equal to that of the entire territory of all the European Union while its population is only of 2.9 million people. On the other hand is the population of Moscow city that more than 12 million people. This creates a great difficulty in ruling the country and requires a solid system of accounting and statistics for decision-making.

Despite the difficulties with the collection and standardization of statistical data we developed an all-in-one database named "Russian SEIPH" - Social-Economics Interference & Public Health. SEIPH contains over 130 social-economics and other variables that we use for modeling approaches for predicting and planning. The Federal Statistical Agency Rosstat publishes the solid statistical data for all regions of Russia and contains hundreds of variables so we have chosen only the variables of interest. The data was collected from different official yearbooks for adaptation. Then we chose 3 dependent variables for developing models using Data Mining techniques. 130 independent variables represent a wide range of societal characteristics and can be classified into five clusters: 1 - Diseases & Death Rates; 2 - Social & Health Service infrastructure; 3 – Economics & Money Income; 4 – Demographic; 5 - Environment-related & Alcohol Related factors. First we found factors associated with of terminations of pregnancy prevalence (abortions) in Russia. Also we built models of alcoholism incidence and crimes from alcohol intoxication.

Data Mining/Analytics is the process using statistical techniques and computational algorithms for analyzing a large amount of data that can be cross-sectional, temporal as well as spatial.
The Data Mining Project's Strategy is: 1) Define research problems, 2) Build data mining databases, 3) Explore data, 4) Prepare data for modeling, 4) Build model, 5) Evaluate model, 6) Deploy model and results, 7) Take action, 8) Measure the results.

Usually 70% to 85% of the time is spent on steps 1 to 4 for a data-mining project.

The best-obtained model using average squared error criterion is the regression model. The final abortions model consists of 14 significant variables with an adjusted R2 80.85%. The strongest impact shows the Environment-related & Alcohol Related cluster of factors which include geographic factors, pregnancy complication rate, number of physicians and hospital beds, demographic factors, vodka and pure alcohol consumption, gross regional product and population money incomes and educational infrastructure development.

Conclusion: The number of abortions and other social-related factors in the regions of Russia is mostly associated with the level of income of citizens, gross regional product, consumption of alcohol and medical service infrastructure. Now we will work on two other models in trying to predict an evaluation of independent variables but now it's clear that most of Russian social and health problems depend on the bad economic situation of past 20 years. That's why Russia still has a higher death rate higher than birth rate.

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SUBOPTIMAL RESPONSES TO IVERMECTIN

37 Million people in Africa are infected with the filarial parasite Onchocerca volvulus. Due to its grave socioeconomic impact as a result of vision loss to dermatitis, onchocerciasis is classified as a major health concern by the WHO. Although vector control and ivermectin (IVM) mass chemotherapy in West Africa have decreased transmission rates since the 1990s, there still remains a high burden of this disease in some areas in Africa. Of even greater concern is the recent finding the decline in the suboptimal performance of IVMs in Ghana in areas that have had frequent (>10) rounds of mass chemotherapy. Reasons for the reduced efficacy of IVM in this area remain to be elucidated and three scenarios can be imagined either by acting alone or possibly in combination: i) a host's immunological adaption to repeated rounds of IVM, ii) genetic predisposition of the host resulting in a suppressive immunological phenotype and/or a faster excretion of the drug, iii) genetic changes of the parasite in response to IVM-induced selection pressure. Finding a genetic association will mean that the phenomenon of IVM unresponsiveness may remain limited to a local population, whereas evidence for a general immunological adaptation unrelated to host genetics will imply that IVM unresponsiveness may have to be considered an outcome for many mass treatment areas, complicating efforts to eliminate onchocerciasis. This would have tremendous practical implications for public health, such as the necessity for more frequent IVM application with less time between the applications or to change treatment to alternative drugs that are more effective.

Our studies have shown that targeting the parasites bacterial endosymbionts with antibiotics leads to permanent sterilization of the female filaria and subsequently to worm death. Onchocerciasis patients, in whom repeated standard treatment has failed, were treated with Doxycycline, which lead to the effective clearing of the larval stages from the skin. Thus, strategies may be developed including anti-wolbachial treatment to control the re-emergence of onchocerciasis in special intervention zones, such as areas where infections persist despite the use of IVM.

MAIN FACTORS & TRENDS OF LABOUR POTENTIAL

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Employment potential of a society embodies the potential involvement and the use of the working population in the economy. Therefore, the use of the labor potential has objective age requirements (in Russia: women 16 to 55 years, men 16 to 60 years).

The labour potential is a difficult combination of physical and creative capabilities, knowledge, skills, experience, spiritual and moral values, cultural installations and traditions.

The term «labour potential» was extended in the 1970s. Now there is not a single meaning or interpretation of term «labour potential».

In a larger sense of the word the labour potential is a cumulative public capability to work, in other words, the potential labour capability of society and its work resources. The labour potential has both quantitative and qualitative sides.

The quantitative side is formed: By a population that is able to work.

The qualitative side of labour potential engages: health, physical capacity of able bodied population; education and qualifying level. Besides the quality characteristics of the labor potential includes three components which are: physical, intellectual and social. The Physical component of the labor potential characterizes the physical and mental abilities of a person, depending on his health.

There are 4 aspects that affect the term «labour potential»:

1. Resources - considers labour and revealing of reserves of a living labour (V. Kostakov, A. Popov, I. Volohin, L. Kunelsky, G. Sergeeva, L.Tchizhova, N. Korovjakovskya).
2. Labour personal resources - consider the worker, and synergy effect from their labour activity (I. Volohin, V. Vrublevsky).
3. Social-demographic - considers social, demographic, educational and creative possibilities of workers which serve as conditions for labour productivityincrease (V.Dobrik, V. Fayzer).
4. Social - productiive - assumes, that work capability is depended on technical, economic, organizational and other conditions which supply active productivity (B. Suharevsky, A. Pankratov, O. Stankov, L. Goldin, D. Karpuhin, I. Maslov).

We examined regional labour potential (by the example of the Komi Republic) and its interaction estimation of quantitative and qualitative indicators with economic activities in regional economies. We have constructed log models reflecting interrelation between economic developing indicators (a gross regional product, investments into a fixed capital) and some indicates of regional labour potential (the level of the rate of sickness and expected life expectancy) which allow to evaluate both the size of a temporal log, and the relationship between rates between economic and labour indicators. Temporal log models cover the period from 1995 till 2010.

The Komi Republic is located in the north-east of the European part of Russia, the working age for women is 16 to 50 years and for men is 16 to 55 years.

The analysis of factors of paired correlation with allowance for a temporal log testifies, that the effect of an investment on the regional economy and on its population's incomes are shown in 0-1 years, and the relationship between the rate between population incomes and investments into a fixed capital are very high – at more than 0,9. With reference to life expectancy the temporal log constitutes 3-4 years.

The Influence of the gross regional product dynamics on quantitative and qualitative indicators of labour potential has a slightly different character. In particular, change of a gross regional product and the population income occurs synchronously, but relations between the rate of goods and services and the population income is high (a more than 0, 8). It testifies to resulting labour and salary in the region.

Thus, we see strong correlation between investments into fixed capital and the population income and a strong correlation between the gross regional product and the population income is observed in parallel to each other. It possibly confirms the fact that in modern conditions a population income investment not only promotes the standard of living, but also increases the labour region potential in society.

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THE HABILITATION WITH PRESCHOOL CHILDREN WITH CEREBRAL PALSY IN PROCESS OF PEDAGOGICAL SUPPORT OF THEIR FAMILIES

Movement disorders affect parents of children with cerebral palsy most significantly. First of all, movement disorders are visible to the other people and are accompanied by noticeable deformities: an asymmetrical face and body features, speech and pose disorders, a voice modulation, excessive salivation and the usage of handicapped devices. Secondarily, lack of independence, immobility or other movement difficulties imply the need of constant physical care for the children. It requires special effort from parents.

The purpose of the research was to determine the effectiveness of habilitation of preschool children with cerebral palsy in the process of pedagogical support of their families. The author presents the study of psychology-pedagogical problems of families with preschool children with cerebral palsy and the universal program of pedagogical support of families. In the conclusion, the author determines effectiveness of social adaptation of children with cerebral palsy and their families.

The study was conducted in the specialized school №17 and the family association "Nadezhda" in Yekaterinburg, Russia. 22 children ages 3 to 7 with different forms of cerebral palsy and 22 parents of disabled children participated in the research. Children from both groups had the following forms of cerebral palsy: spastic diplegia, spastic quadriplegia, and ataxic. The study was conducted in 3 stages from 2008 to 2012.

We used the author's technique of monitoring the formation of motor skills in order to assess the development of movement functions in the children and used a questionnaire by A.J. Varga and V.V. Stolina for the study of parental attitudes.

The author's technique of the monitoring of motor skills formation was conducted based on the following groups of parameters: the presence of tonic reflexes, motor skills of lower extremities, crawling, motor skills of upper extremities, sitting, walking and spatial movements.

The technology of support consisted of 6 stages, which were aimed at work with both children and their parents.

In conclusion we have made the following findings:

1. The process of pedagogical support for families with preschool age children with cerebral palsy, by using tools of the habilitation, has to include:
   a) monitoring of motor skills formation;
   b) development and implementation of habilitation procedures, which are designed to form social adaptation;
   c) study of parental attitudes to children;
   d) prognosis of developmental process of the child;
   e) control of the effectiveness of the habilitation program.
2. Negative emotions of parents towards their preschool age children with cerebral palsy were detected in 100% of cases, as it is hard for them to accept their disabled child. This, in turn, leads to the inadequate attitude towards these child and creates adverse conditions for their development.
3. The content of individualized programs for the child's motor skills development has to reflect the abilities of the child and characteristic features of the family. The correct motor mode schedule has to be set up and followed in the child's daily life. It is very important to create an "accessible environment" for the child with cerebral palsy, in which the child's development will be more successful.
4. Using the author's technique of monitoring the formation of motor skills is an effective tool for the assessment of the child's motor skills development and for the forecast of the "zone of proximal development".

5. The organization of pedagogical support for families has allowed to significantly improve the motor skills development in all children, who have participated in the study; to develop a more positive attitude of the parents to themselves and their children, and to increase the social adaptation of children with cerebral palsy.

6. The study has shown that the presence of a physical therapist in all of the lessons is not necessary if there is a meaningful organization of pedagogical support for families. Parents are able to independently organize the habilitation process, to conduct monitoring procedures, and to adequately interpret the results of habilitation by themselves if there is a specialist ready to assist or counsel them.

GENDER-SPECIFIC CHARACTERISTICS OF ARTERIAL HYPERTENSION

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Essential hypertension (EH) refers to a lasting increase in blood pressure with heterogeneous genetic and environmental causes. Women and men share most risk factors for heart disease—including high cholesterol, inactivity, obesity, high blood pressure, and smoking—but there are some gender differences in its development, symptoms, and prognosis. For example, in men, cholesterol is more an important factor than in women, in whom arterial hypertension, diabetes and their combination has a greater importance in determining cardiovascular risk. EH and other cardiovascular diseases are leading in the structure of mortality especially in developing countries. About 26 % of the world's population suffers from EH and this number is prognosed to increase.

In Russia 37,2 % of men and 40,4% of women suffer from EH. Among these patients 75% of men and 80,3% of women know about their problem, half of men and 63,1 % of women get treatment, but only about 20% normalize their blood pressure.

Compared to men, women have a greater chance of dying from heart disease complications of EH. Women are more likely to have atypical symptoms of myocardial infarction such as nausea, vomiting, fatigue, shortness of breath, dizziness, abdominal or mid-back pain and indigestion. This fact may be related to some gender specific features of microcirculation. Because of the atypical presentation, women may not receive on-time and appropriate treatment for acute coronary syndrome. In fact, women experience delays in both arriving at the hospital after having myocardial infarction symptoms and receiving timely treatment for their symptoms. Women have worse in-hospital and long-term outcomes after myocardial infarction, with more in-hospital recurrent angina and heart failure than men and a higher readmission rate within 6 months of their myocardial infarction. EH and its complications are leading causes in women's mortality rate.

The prevalence of EH is higher with the age of the population. Indeed, women develop cardiovascular disease when they are about 10 years older than men and typically after menopause. This fact may be related to the negative effects of ovarian hormone deficiency. Estrogene and progesterone, the hormones of the ovarian, are established to decrease such cardiovascular risk factors as LDL cholesterol, triglycerides, glucose intolerance and high blood pressure.

Thus the deficiency of estrogene activates adrenergic and renin-angiotensin systems. These two systems and endothelial dysfunction are the key factors in pathogenesis of EH and its target organ's damage. So its investigation can improve effectiveness of hypotensive therapy.

So the aim of our research was to estimate gender differences of microcirculation in hypertension.

In our study we included 34 men and 37 women with EH. The control group consisted of 35 healthy men and 41 healthy women.

All participants underwent assessment of skin blood flow by means of a laser Doppler flowmetry. The probe was on the surface of the fingertip and next the parameters were recorded: Index of microcirculation, variables of microcirculation and after that we occlused the brachial artery with a cuff and within 2 minutes got postocclusive reactive hyperemia..

In spectral analyses we've estimated the impact of endothelial, neurogenic, muscular, respiratory and pulse components in the regulation of microcirculatory.

Hypertensive men have higher index of microcirculation (26,64 (21,00-32,45)PU) than hypertensive women (20,91 (16,98-24,30)PU). While in the control group we have higher PORH in healthy women154,88 (146,96-192,53)% than in men137,05 (116,78-160,04)%. But in spectral analyses hypertensive women have stronger influence of muscular and pulse-waves and weaker respiratory components than hypertensive men. In the control group we found out more sympathic activity in healthy men.

SCIENTIFIC ORGANISATIONS

URAL FEDERAL UNIVERSITY (URFU)

Ural Federal University (UrFU) is one of the largest Universities in Russia. More than 50 000 students attend its 16 institutes. UrFU offers more than 120 different programmes bachelor's studies and 80 different programmes for study to a Master's level in a diverse range of subject areas including engineering, natural sciences, mathematics, social and political science, liberal arts, economics and management. According to the QS World University Ranking in 2012 UrFU is among the top 500 Universities in the world. Our research priorities are organic chemistry and pharmacology, mathematics and computer science, communication technologies, power engineering, material science and machine building, social sciences and the humanities, linguistics as well as economics.

In developing UrFU we pursue ambitious goals that are supported by the Federal Programme of Development. Ural University was one of the first universities in Russia to fully implement academic degrees and quality assurance standards complying with the Bologna Accords. Education at UrFU is deeply integrated with academic research conducted in 6 different research institutes as well as in dozens of specialized centres and laboratories.

UrFU participates with such international connections as the University of the Arctic, Shanghai Cooperation Organization (SCO) University as well as in the EU's Seventh Framework Programme for Research (FP7). Academic exchange is organized through Erasmus Mundus as well as directly – within the framework of 130 partnership agreements. Our priorities include broadening the scope of our international activities, increasing our participation in international research projects, establishing joint educational programs and increasing academic mobility.

Ural Federal University is situated in Ekaterinburg – the centre of the Ural region which lies on the European-Asian border and is one of the most developed economic regions of Russia. Ekaterinburg is the largest city in the Urals and it is the centre of the Ural research cluster that includes the Federal University, the Ural branch of the Russian Academy of Sciences, numerous manufacturing companies, laboratories and institutes.

Уральский федеральный университет
имени первого Президента России Б.Н.Ельцина

Prof. Victor Koksharov

Rector

URAL BRANCH OF THE RUSSIAN ACADEMY OF SCIENCES (RAS)

Aleksandr Sandakov,
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International
Relations

The Ural Branch of the Russian Academy of Sciences (RAS) was established in 1932. During 80 years the academic institutions of the Branch have been dedicated to boosting progress in the Urals and Russia as a whole by providing latest knowledge and expertise in fundamental and applied research. The primary mission of the Branch is to carry out cutting edge research at the highest level of excellence in diverse spheres of science and engineering.

The first Ural academic schools headed by Academicians S.V. Vonsovsky, N.N. Krasovsky, I.Y. Postovsky, V.D. Sadovsky and S.S. Shwartz have achieved worldwide eminence. Invaluable contribution was made by Academician Y.S. Osipov, the RAS President, Academician G.A. Mesyats, a founder and the first Chairman of the Branch, the RAS Vice-President, and Academician V.A. Chereshnev, the Chairman of the Branch.

Nowadays the institutions carry out research in many different spheres. The Ural scientific schools of mathematics and mechanics are well known in Russia as well as abroad. The Supercomputing Center of UB RAS is now among the top ten in the list of top-50 supercomputers of Commonwealth of Independent States.

Research in theoretical and applied physics spans a wide range of issues in solid state physics, electrophysics, thermal physics, engineering science and power engineering. The academic schools of theoretical physics, physical metallurgy, magnetism study and explosive electron emission theory have obtained worldwide acceptance.

Research interests in the area of biological study include sustainable biodiversity and ecosystem conservation, effective natural resource management, introduction and acclimatization of plants, immunology and genetics as well as territory monitoring in the context of hazardous environmental, social and economic impacts. In 2012 two Ural scientists (Academicians O.N. Chupakhin and V.N. Charushin) received the State Prize of the Russian Federation for research in the field of fine chemicals.

The Ural Branch currently has 7 Scientific Research Centers in the Volga (Izhevsk, Perm, Orenburg), Ural (Yekaterinburg, Chelyabinsk), North-West (Arkhangelsk, Syktyvkar) Federal districts, 41 research organizations and a number of permanent research establishments with the staff of 7118 members, 3336 of which being research fellows.

It hosts 31 Full Members and 53 Corresponding Members of the Academy. Scientific discoveries of the Branch are undertaken in close collaboration with current scientific and academic activities at home and in over 58 countries. More than 200 researches of the Branch are members of international alliances and scientific organizations. Efforts in promoting greater diversity in science and engineering workforce, providing opportunities for the staff to develop their skills and qualifications brought about an increase in the number of research workers under 39, which is currently 35 percent of the whole amount.

Distinctive advantage of the Branch is its extensive collaboration with the regions that allows research to meet national needs, its interdisciplinary initiatives with Universities and State Academies, links with research practitioners from business and industry as well as with federal research centers. The Institutes of the Branch enjoy state-of-the-art facilities, up-to-date equipment and databases. Over 30 platform centers of collective use enable communities of researchers to work at the frontier of science.

GERMAN CENTER FOR RESEARCH AND INNOVATION (DWIH)

DWIH DEUTSCHES WISSENSCHAFTS- UND INNOVATIONSHAUS MOSKAU

Dr. Gregor Berghorn,
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The German Center for Research and Innovation regards itself as a forum for the German-Russian exchange in the area of science, research and technology, with the aim to enhance and support the co-operation and partnership between Germany and Russia.
The forum represents German institutions of research as well as innovative enterprises in a comprised form. In addition to that it contributes to a network among researchers in Germany and Russia, it brings experts together from academic institutions as well as researchers and representatives from industry and government. The topics of the partnership of modernization and the strategic partnership between both countries are components of the program of the center. Thus the DWIH contributes to the discource of both countries on the challenges of the 21st century.

The DWIH was founded on the initiative of the German government, further centers have been established in New Delhi, New York, Tokyo, São Paula and – most recently – in Cairo.
In Moscow the DAAD, the DFG, the Helmholtz Community, the Alexander von Humboldt-Foundation, the German Historic Institute and the German-Russian Chamber of Foreign Trade form part of the DWIH.
They act and appear as joint members of the German Center of Research and Innovation.
Science Talks, science lectures, conferences, round tables, information campaigns as well as information tours all over Russia, exhibitions and the German-Russian Weeks of the Young Researcher form together as the working instruments of the Moscow DWIH.
The project is financially supported by the Foreign Office of the Federal Republic of Germany.

DEUTSCHE FORSCHUNGSGEMEINSCHAFT

DFG Deutsche Forschungsgemeinschaft

Nora Brüggemann
Group of Research
Careers

The Deutsche Forschungsgemeinschaft (German Research Foundation) is the biggest funding agency in Europe for the development of fundamental research with an annual budget of 2,5 bin. Euro. Its membership consists of German research universities, non-university research institutions, scientific associations and the Academies of Science and the Humanities. The DFG has expanded its presence in other research regions around the world with its 7 liaison offices. The office Russia/CIS was opened in Moscow in 2003. Framework agreements on the co-funding of research projects and researcher mobility exist with the following partners: the Russian Academy of Sciences (RAN), the Russian Foundation for Fundamental Investigations (RFFI), the Russian Foundation for the Humanities (RGNF).

How does the DFG promote young researchers? Creative and intelligent minds are the key to successful science and research. That is why the Deutsche Forschungsgemeinschaft (German Research Foundation) places a special focus on promoting young researchers. We are committed to helping young talents pursue cutting-edge investigations in top-level settings and help them to become independent early on in their careers.

Flexible individual funding and customised excellence programmes give young researchers the opportunity to advance in their careers and undertake projects from all branches of science and the humanities. The DFG accepts funding proposals from researchers with a doctoral degree (PhD) who live and work in Germany or plan to do so in the future. PhDstudents are not supported individually, but can be, indirectly through the funding of programmes and projects.

Project-based doctoral and post-doctoral qualifications

For doctoral researchers, who like working in a team and value a well-designed framework, a Research Training Group (RTG) may be the right choice. It combines an ambitious research programme with target-oriented supervision and academic freedom to form an ideal environment for a successful doctorate. Post-docs help design the research and qualification programmes of an existing RTG and explore new research topics for your future career.

Following completion of the doctorate there is the possibility to assume responsibility as an investigator in an existent DFG-funded project. This will give young researchers the opportunity to advance their qualifications and improve their career prospects by gaining experience and by building new networks.

The Temporary Position is a funding mechanism that provides young researchers with funding for a temporary post-doctoral position in conjunction with a proposal for a research grant. Researchers may select the scientific setting in Germany that they think will provide the best conditions for their project.

Excellence programmes

The Emmy Noether Programme is aimed at outstanding scientists and academics with at least two and no more than four years of post-doctoral research experience (or up to six years for licensed medical doctors). It allows young researchers to head their own independent junior research group that will work on a project for five or, in exceptional cases, six years. It offers a fast-track opportunity to qualify for a leading position in research.

For young researchers, who have all the qualifications for a professorship, the Heisenberg Programme may be the right option. This programme provides them with funding for up to five years so they can distinguish themselves further academically. There are two variations of the programme: the portable Heisenberg fellowship, which also allows one to go abroad for some time; and the Heisenberg professorship, which offers the prospect of acquiring a tenured position at a German university, provided the candidate receives a positive review.

DAAD Deutscher Akademischer Austausch Dienst German Academic Exchange Service

THE GERMAN ACADEMIC EXCHANGE SERVICE (DAAD)

Dr. Gregor Berghorn

Head of DAAD Office

Moscow

The German Academic Exchange Service (DAAD) is the largest funding organisation in the world that supports the international exchange of students and scholars. Since it was founded in 1925, more than 1.5 million scholars in Germany and abroad have received DAAD funding. It is a registered association and its members are German institutions of higher education and student bodies. Its activities go far beyond simply awarding grants and scholarships. The DAAD supports the internationalisation of German universities, promotes German studies and the German language abroad, assists developing countries in establishing effective universities and advises decision makers on matters of cultural, education and development policy. The DAAD has 14 regional offices and 50 Information Centres (IC) worldwide.

The DAAD:

- sponsors short and long-term individual scholarships for foreign undergraduates, graduates, doctoral students and scientists for studies and research at German universities or research institutions;
- supports German undergraduates, interns, graduates and young scientists with scholarships for foreign universities;
- funds the development of international degree programs in Germany and abroad;
- promotes and strengthens the German language abroad;

- sends Lektors for the German language to universities abroad;
- funds co-operation between German and foreign universities;
- provides information on study and research programs in Germany and abroad;
- promotes academic, scientific, economic and democratic development in developing and emergent countries.

THE GERMAN NATIONAL ACADEMY OF SCIENCES LEOPOLDINA

Leopoldina
Nationale Akademie
der Wissenschafter

Dr Ruth Narmann

Senior Officer International Relations

Founded in 1652, the Leopoldina is one of the world's oldest academies of science. Ever since then, it has followed its mission of advancing science for the benefit of mankind. Since 1787, its headquarters are based in Halle (Saale) in Germany, with an additional office in Berlin that has been in operation since 2009. As an academy, it elects distinguished academics and scientists to become its members. Since its foundation, it has appointed over 7000 individuals, including such eminent scholars as Marie Curie, Charles Darwin, Albert Einstein, Johann Wolfgang von Goethe, Alexander von Humboldt, Justus von Liebig and Max Planck. Currently, the academy unites more than 1400 outstanding scientists from more than different 30 countries, representing disciplines ranging from the natural sciences to the humanities.

In 2008, the Leopoldina was appointed as the German National Academy of Sciences. This was due to the fact that it addresses key issues of particular significance for the future of society from a scientific perspective, independent of any economic or political interests. It provides the framework for the establishment of interdisciplinary expert groups that devise policy-guiding statements that are intended to fuel political, scientific and public debate on pressing issues such as climate change or an aging society.

The Leopoldina is the voice of German science in academy-related international committees and consortia. The discussion of current scientific issues in high-profile international symposia is an important aspect of its international activities. Together with its partner academies, it also draws up scientific recommendations on possible solutions for urgent global problems.

The Leopoldina also takes strong interest in supporting young scientists. Together with the Berlin-Brandenburg Academy of Sciences, it founded the Young Academy to give young scientists a stronger voice in scientific policy. Moreover, the Leopoldina confers scientific achievement awards, conducts research projects and supports researchers all over the world who are subject to reprisals solely on account of their scientific work.

The Leopoldina is under the patronage of the Federal President of Germany and is registered as a non-profit organization. It is funded by the German federal government and by the federal state of Saxony-Anhalt, of which it is based in.

Alexander von Humboldt
Stiftung/Foundation

Dr. Petr Stefanovich
Representative of the
Humboldt Foundation
(in the DWIH) Moscow

THE ALEXANDER VON HUMBOLDT FOUNDATION

The Alexander von Humboldt Foundation promotes academic co-operation between excellent scientists and scholars from Germany and abroad. AvH research fellowships and research awards allow scientists to come to Germany to work on a research project they have chosen themselves together with a host and a collaborative partner. As an intermediary organization for German foreign cultural and educational policy AvH promotes international cultural dialogue and academic exchange.

What is important to us? Only one thing is important to becoming a member of the Humboldt Family: your own excellent performance. There are no quotas, neither for individual countries nor for particular academic disciplines. AvH selection committees comprise of academics from all fields of specialisation and they make independent decisions based solely on the applicant's academic record. So in this case people are supported, specific not projects. After all, even in times of increased teamwork, it is the individual's ability and dedication that are decisive for academic success.

Roots of the AvH: Alexander von Humboldt was a discoverer and cosmopolitan. He was a fighter for the freedom of research, a humanist and a patron of excellent academic talent. Shortly after his death, the Alexander von Humboldt Foundation for Nature Research and Travel was established in 1860.
Today's Alexander von Humboldt Foundation was established by the Federal Republic of Germany on 10 December 1953. With Humboldt as a model, the Foundation maintains an international network of academic co-operation and trust. It links more than 25,000 Humboldtians throughout the world together, including 49 Nobel Laureates. The Foundation is funded by the Federal Foreign Office, the Federal Ministry of Education and Research, the Federal Ministry for Economic Co-operation and Development, the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety as well as a number of national and international partners.

Become a Humboldtian: Whether you are a young post-doctoral researcher at the beginning of your academic career, an experienced established academic, or even a world authority within your discipline - our research fellowships and research awards offer you sponsorship specifically tailored to you and your career situation.

Key Sponsorship Programmes:
Research Fellowships for post-doctoral researchers and for experienced researchers (up to 24 months of stay in Germany).
Awards (Sofja Kovalevskaja Award, Friedrich Wilhelm Bessel Research Award, Humboldt Research Award, Alexander von Humboldt Professorship and others)
German Chancellor Fellowships to prospective leaders from the USA, the Russian Federation and China who have shown an outstanding potential for leadership in their careers thus far.
For representatives of all professions and disciplines, giving special preference to the humanities, law, social science and economics.

THE MAX PLANCK SOCIETY

The Max Planck Society is Germany's most successful research organization. Since its establishment in 1948, no fewer than 17 Nobel laureates have emerged from the ranks of its scientists, putting it on a par with the best and most prestigious research institutions worldwide. Its more than 13,000 publications each year in internationally renowned scientific journals are proof of the outstanding research work conducted at Max Planck Institutes – and many of those articles are among the most-cited publications within their relevant fields.
What is the basis of this success? The scientific attractiveness of the Max Planck Society is based on its understanding of research. Max Planck Institutes are built up solely around the world's leading researchers. They themselves define their research subjects and are given the best working conditions, as well as free reign in selecting their staff.

The currently 80 Max Planck Institutes conduct basic research in the service of the general public in the natural sciences, life sciences, social sciences and the humanities. Max Planck Institutes focus on research fields that are particularly innovative or that are especially demanding in terms of funding or time requirements. Their research spectrum is continually evolving. New institutes are established to find answers to seminal, forward-thinking scientific questions, while others are closed when, for example, their research field has been widely established at universities. This continuous renewal preserves the scope that the Max Planck Society needs to react quickly to pioneering scientific developments.
Top-ranking scientists can pick and choose where they want to conduct their research. They may go where they find the best conditions for their work. The Max Planck Society is a national and international icon of German research, which is why it attracts scientists from all over the world. More than 6 000 foreign visiting and junior researchers work at the various Max Planck Institutes each year. A third of the Max Planck Directors and half of the Ph.D. students hold non-German passports. Among post-docs the figure is even higher at 80 percent.

Junior scientists who come from outside Germany and whose research work and talent set them apart can upon returning to their home country after completing a research residency at a Max Planck Institute establish a partner group with support from the Max Planck Society. There are now more than 40 partner groups working in Asia, Eastern Europe and South America. They are especially important bridgeheads for German science abroad

Dr. Per Brodersen

Cooperation with Russia/CIS

HELMHOLTZ ASSOCIATION OF GERMAN RESEARCH CENTRES

The Helmholtz Association is Germany's largest scientific research organisation. A total of 33,634 staff members work in its 18 different scientific-technical and biological-medical research centres. The Helmholtz Association performs cutting-edge research which contributes substantially to solving the greatest challenges within science, society and industry. Scientists at Helmholtz concentrate on researching the highly-complex systems which determine human life and the environment. Helmholtz operates in six different fields of research: Energy, the Earth and Environment, Health, Aeronautics, Space and Transport, Key Technologies and the Structure of Matter. The work of the Helmholtz Association follows in the tradition of the great natural scientist Hermann von Helmholtz (1821-1894).
As a strong member of the global scientific community, the Helmholtz Association works

Dr. Martin Sandhop

Head of the Helmholtz Moscow Office

with networks worldwide. The Helmholtz Moscow Office was established in 2004 in order to strengthen the co-operation between Russian scientists and researchers of the Helmholtz centres as well as initiating new partnerships. It is the first point of contact for Helmholtz researchers who wish to co-operate with Russian partners and for Russian scientists who need special information and contacts of their possible partners within the Helmholtz research centres.

Russia is one of the key strategic partners of the Helmholtz Association. There are more than 200 co-operations between the Helmholtz centres and Russian institutions. Since 2008 the Helmholtz Association and the Russian Foundation for Basic Research have launched a joint programme: the Helmholtz-Russia Joint Research Groups (HRJRG). HRJRG is a programme especially for young researchers both from Germany and Russia. One of its aims is to improve the academic career perspectives for young Russian scientists within Russia. Each group consists of Russian and German (Helmholtz) researchers and receives a funding of up to 160,000 euros for three years. 26 projects out of four calls have already received funding. In November 2012 six new groups will be selected in Moscow. Due to this programme Russian scientists have the possibility to use the unique research infrastructure of the Helmholtz Association.

The Helmholtz Association values the outstanding work of Russian scientists and intends to extend its co-operation with Russian partners in the future.

RUSSIAN UNION OF YOUNG SCIENTISTS

Dr. Liliya Bondareva

Deputy Chairperson of the Council of ROSMU

THE RUSSIAN UNION OF YOUNG SCIENTISTS (ROSMU)

The Russian Union of Young Scientists (RoSMU) is an all-Russian non-governmental organisation and was registered with the Ministry of Justice of the Russian Federation on April 26, 2006. The organisation was established during the Congress of Young Scientists of Russia (October 20-21, 2005) which gathered over 700 delegates together, representing more than 500 major higher education institutions, research universities and research centres from 77 territorial subjects of the Russian Federation.

As of September 1, 2012 there are regional branches of RoSMU in 43 different territorial subjects of the Russian Federation.

The main goals of the organisation are:

- extending the co-operation between young scientists and specialists of the Russian Federation to contribute to new knowledge-exchange, to grow the efficiency of current scientific and innovative activities;
- contributing to the high rate of Russia's social and economic development and to the development of Russian science and technology, to create an innovative type of economy and the building of knowledge-based society;
- contributing to the promotion of international co-operation in science and research as well as participating in international projects that advance the effective work of young Russian scientists and specialists in reliance on the best practices worldwide.

To reach these goals, RoSMU elaborates and carries out theme-based projects and programmes, organises national and international events, performs data-processing, analytical and expert work.

At the national and interregional levels RoSMU's most significant events include theme-based training seminars aimed at increasing the scientific, innovative and social activity of young scientists. In addition, RoSMU organises annual interregional (district) forums for young scientists that include workshops on the most urgent issues of scientific and innovative activities such as issues of international co-operation. At the regional level RoSMU organises theme-based round tables, exhibitions of innovative achievements of young scientists, discussion clubs, training sessions, etc.

In its activities RoSMU co-operates with research organizations, educational institutions, companies, charity foundations as well as federal and regional authorities including the Ministry for Education and Science, the Federal Agency for Youth Affairs, the Federal Agency for the Commonwealth of Independent States, Compatriots Living Abroad and International Humanitarian Cooperation, the Council of Federation, the State Duma, etc.

RoSMU representatives are invited as experts to participate in consulting and advisory meetings of state bodies at the regional, federal and international level.

RoSMU represents Russia in the European association EURODOC that unites national organisations from 34 different countries from the European Union and the member-states of the Council of Europe.

PLENARY DISCUSSIONS

TOBIAS STÜDEMANN
Head of the Liaison Office of
Freie Universität Berlin, Moscow

Prospects for Young Researchers: What can be expected from Research Organizations?

The last topic on the long list of presentation and discussion events for the 2nd Week of the Young Researcher was – as in the previous year – dedicated to the question, "how can research organizations from Russia and Germany further young academics' careers?" The panelists of the discussion were Dr. Gregor Berghorn, of DWIH and DAAD, Dr. Jörn Achterberg, of DFG, Prof. Dr. Jens Scheiner, of the University of Göttingen and Sergey Pustylnikov, a PhD student at the Novosibirsk Tuberculosis Research Institute.

At the starting point of that lively discussion, there were suggestions on how to improve "the Week of Young Researchers", even with the quality of accepted papers and the following presentations from the German and Russian side which covered a broad quality range. For many of the young researchers it was their first time presenting their research outcomes in English. This fact was mentioned as one of the big advantages of the Week. Offering opportunities, where young researchers can show their ability of presenting and discussing their results, especially on an international stage, was very welcomed not only because it is part of the official government policy, but also to show that local science is as high in quality as international science.

Despite the sometimes difficult situation with funding scientific projects, not only German but also Russian scientists gain weight within their research institutions as soon as they attract third party funding. There are possibilities to fund research, even for young scientists, not only from the German but also the Russian side.

Different approaches and expectations of young researchers were discussed, namely on how they can make use of the possibilities presented to them by their home institutions as well as international funding organizations. Based on the proverb "You can lead a horse to water, but you can't make it drink", used by Berghorn, a discussant objected that there might be walls between young researchers and the water.

To sum up the discussion and to stay in theme with the cited proverb, there are a lot of opportunities for your researchers to participate in scientific events, gain international experience and to develop their scientific network. Since this relates to both countries, the Week of the Young Researcher is one, for some the first, step to remove boarders between scientific communities or, as to conclude with Berghorn, using an extended version of the proverb: "If you cannot approach the water from this side, go to the other side – there is always a way to make the horse drink".

LIST OF PARTICIPANTS

OF THE INTERNATIONAL CONFERENCE THE WEEK OF THE YOUNG RESEARCHER: HEALTH AND SOCIETY

Ural Federal University, September 16 – 21, 2012, Yekaterinburg

GERMAN DELEGATION

TITLE	LAST NAME	FIRST NAME	STATUS / INSTITUTION
Dr.	ACHTERBERG	Jörn	Head of DFG Office Russia/CIS, Deputy Head of DWIH Moscow
Dr.	BERGHORN	Gregor	Head of DAAD Office Moscow, Managing Director of DWIH Moscow
Dr.	BRODERSEN	Per	Scientific Officer, Division International Relations, Max-Planck-Society Berlin
Mrs.	BRÜGGEMANN	Nora	Scientific Officer, Group of Research Careers, DFG Bonn
Mr.	DERPMANN	Simon	PhD student, Chair of Philosophy, University of Münster
Mr.	DÜBER	Dominik	PhD student, Research Fellow, Centre for Advanced Study in Bioethics, University of Münster
Dr.	DUBLJEVIC	Veljko	PhD student, International Center for Ethics in the Sciences and Humanities (IZEW), University of Tübingen
Prof. (em.), Dr. med.	EHRICH	Jochen	MHH Children's Hospital, Hannover Medical School (MHH); Honorary Professor at SCCH RAMS, Scientific Center for Children's Health, Russian Academy of Medical Sciences
Dr. med. vet.	FRIESE	Anika	Head of Laboratory, Institute for Animal Hygiene and Environmental Health, Freie Universität Berlin
Prof. Dr.	FUNKE	Peter	Vice-President of the DFG, Director of the Institute of Ancient History and the Institute of Epigraphy, University of Münster
Mrs.	GRUBER	Lisa	PhD student, Center for Diet and Disease Research Center for Nutrition and Food Science, Technical University of Munich
Prof. Dr. iur.	GUTMANN	Thomas	Chair of Civil Law, Philosophy of Law and Medical Law, University of Münster
Mr.	HEINZ	Karsten	Counsellor, Head of Science and Education Section, Embassy of the Federal Republic of Germany in Russia, Moscow

TITLE	LAST NAME	FIRST NAME	STATUS / INSTITUTION
Mrs.	HÖLZ	Stefanie	PhD student, Central Clinical Research,
Prof. (em.) Dr.	HUBER	Max	Former Vice-President of the DAAD, Former Rector of the University of Bonn
Mrs.	ILINA	Yulia	Project manager,DFG Office Russia/CIS
Mrs.	JANDAUSCH	Anett	PhD student, Central Clinical Research, University of Freiburg, Medical Center
Dr.	LAUKÖTTER	Sebastian	Research Fellow, Research Group for the Constitution of Norms in Medical Ethics and Biopolitics, University of Münster
Prof. Dr. med.	LAVRIK	Inna	Medical Faculty, University of Magdeburg; German Cancer Research Center (DKFZ-Heidelberg)
Dr.	NARMANN	Ruth	Scientific Officer, Department International Relations, German Academy of Sciences Leopoldina
Dr.	PFARR	Kenneth	Group Leader "Molecular Parasitology", Institute of Medical Microbiology, Immunology and Parasitology, University Hospital of Bonn
Prof. Dr. med.	PLÖCKINGER	Ursula	Interdisciplinary Centre of Metabolism: Endocrinology, Diabetes and Metabolism, Centre of Excellence for Rare Metabolic Diseases, Charité-Universitätsmedizin Berlin
Prof. (em.), Dr. med.	QUABBE	Hans-Jürgen	Freie Universität Berlin; Head of Section Endocrinology / Diabetology, Koch-Mechnikov-Forum
Mr.	RUSAKOV	Mikhail	Staff Member, DWIH Moscow
Prof. Dr.	SCHEINER	Jens	Professor, Courant Research Centre "Education and Religion", University of Göttingen
Dr.	SCHELHAAS	Mario	Group Leader of DFG Emmy-Noether-Research Group „Virus Endocytosis", University of Münster
Mrs.	SCHMIDT	Annemarie	PhD student, Center for Diet and Disease Research Center for Nutrition and Food Science, Technical University of Munich
Prof. Dr.	SCHÜLE	Roland	Scientific Director, Department of Urology and Center for Clinical Research, University of Freiburg, Medical Center
Dr. rer. nat.	SPECHT	Sabine	Group Leader, Institute for Medical Microbiology, Immunology and Parasitology, University Hospital of Bonn

TITLE	LAST NAME	FIRST NAME	STATUS / INSTITUTION
Dr.	STEFANOVICH	Petr	Representative of the Alexander von Humboldt Foundation within the DWIH Moscow
Mr.	STÜDEMANN	Tobias	Head of the Liaison Office of Freie Universität Berlin in Moscow

RUSSIAN DELEGATION

TITLE	LAST NAME	FIRST NAME	STATUS / INSTITUTION
Mr.	BARANOV	Dmitry	PhD student, Chair of Pediatric Medicine and Neonatology, Ural State Medical Academy, Yekaterinburg
Mrs.	BYKOVA	Maria	Research Assistant, Institute of Natural Sciences, Ural Federal University, Yekaterinburg
Mr.	BONDAREV	Vasily	Research Fellow, Department of Public Health and Health Care, I.M.Sechenov First Moscow State Medical University, Moscow
Dr.	BONDAREVA	Liliya	Deputy Chairperson of the Council, Russian Union of Young Scientists, Moscow
Dr.	CHAJKA	Ziliya	Chair of Dentistry, Ural State Medical Academy, Yekaterinburg
Prof. Dr.	CHARUSHIN	Valeriy	Chairman of the Presidium, UB of Russian Academy of Sciences, Yekaterinburg
Mrs.	DUBROVINA	Irina	PhD student, Institute of Experimental Medicine, NWB Russian Academy of Medical Sciences, St. Petersburg
Dr.	DURMASHKINA	Alevtina	Research Fellow, Chair of Pediatric Medicine, Nizhny Novgorod Medical State Academy, Nizhny Novgorod
Mr.	EROSHENKO	Stanislav	PhD student, Chair for Electric Power Plants and Power Systems, Ural Federal University, Yekaterinburg
Mrs.	IGNATYEVA	Maria	PhD student, I.M.Sechenov First Moscow State Medical University, Moscow
Dr.	IVANOV	Vladimir	Chair of Experimental Physics, Ural Federal University, Yekaterinburg

TITLE	LAST NAME	FIRST NAME	STATUS / INSTITUTION
Mrs.	IVLEVA	Svetlana	Research Fellow, Ultrasonography, Gastroenterology, Scientific Center for Children's Health, Russian Academy of Medical Sciences, Moscow
Dr.	KATANIN	Andrey	Theoretical and Mathematical Physics , Institute of Metal Physics, UB Russian Academy of Sciences, Yekaterinburg
Prof. Dr.	KOKSHAROV	Viktor	Rector, Ural Federal University, Yekaterinburg
Mr.	KONOVALOV	Aleksey	PhD student, Department of Oncology, I.M.Sechenov First Moscow State Medical University, Moscow
Mrs.	KUZNETSOVA	Yulia	PhD student, Research Fellow, Chair of Law in the Health Care System, I.M.Sechenov First Moscow State Medical University, Moscow
Mr.	LOMINADZE	Georgiy	Resident Doctor, Scientific Center of Children's Health, Russian Academy of Medical Sciences, Moscow
Dr.	LYAPUNOV	Aleksandr	Senior Research Fellow, Laboratory of Transmissive Infections, Scientific Centre of the Problems of Family Health and Human Reproduction, SB Russian Academy of Medical Sciences, Irkutsk
Dr.	MASNAVIEVA	Lyudmila	Senior Research Fellow, Laboratory of Biochemistry, Research Institute of Occupational Medicine and Human Ecology, Russian Academy of Medical Sciences, Angarsk
Mrs.	MEKHDIEVA	Kamiliya	PhD student, Research Centre "Health-improving and Sports Technology", Ural Federal University, Yekaterinburg
Mrs.	MIRGORODSKAYA	Olga	Research Fellow, Department of Statistical Analysis in Healthcare, National Research Institute of Public Health, Moscow
Mrs.	MOLODOVSKAYA	Irina	PhD student, Junior Research Fellow, Laboratory of Environmental Endocrinology, Institute of Physiology of Natural Adaptations, UB Russian Academy of Sciences, Arkhangelsk
Mrs.	NIKULINA	Veronika	PhD student, Department of Pulmonology, Far Eastern State Medical University, Khabarovsk
Dr.	OSOLODKIN	Dmitry	Junior Research Fellow, Department of Chemistry, Lomonosov Moscow State University, Moscow

TITLE	LAST NAME	FIRST NAME	STATUS / INSTITUTION
Mrs.	OVSYANNIKOVA	Alla	PhD student, Institute of Internal Medicine, SB Russian Academy of Medical Sciences, Novosibirsk
Mr.	PUSTYLNIKOV	Sergey	Junior Research Fellow, Research Group of Molecular Biology, Novosibirsk Tuberculosis Research Institute, Novosibirsk
Mrs.	RUDT	Yulia	PhD student, Department of Administrative and Financial Law, Russian Presidential Academy of National Economy and Public Administration, Barnaul
Mrs.	SHAIMARDANOVA	Gulnaz	PhD student, Department of Therapeutic Dentistry, Kazan State Medical University, Kazan, Department of Therapeutic Dentistry
Mr.	SHATYLKO	Taras	Resident Doctor, Department of Urology, Saratov State Medical University, Saratov
Dr.	SHCHEGLOV	Aleksandr	Chairman of the Council of the Russian Union of Young Scientists, Moscow
Mrs.	SHCHENDRYGINA	Anastasiya	PhD student, Hospital Therapeutic Department I.M. Sechenov First Moscow State Medical University, Moscow
Mrs.	SHERMAN	Yulia	PhD student, Department of Dermatology and Venereology, Orenburg State Medical Academy, Orenburg
Dr.	SMOTRITCKIY	Aleksandr	Research Fellow, Laboratory of High-Temperature Measurements; Institute of Thermal Physics UB Russian Academy of Sciences, Yekaterinburg,
Dr.	SOSHNIKOV	Sergej	Senior Research Fellow, Department of Medical and Social Problems, Federal Public Health Institute, Moscow
Mr.	TAVLINTSEV	Aleksandr	PhD student, Ural Federal University, Yekaterinburg
Mrs.	TERENTYEVA	Marina	PhD student, Institute of Socio-Economic and Energy Problems of the North, UB Russian Academy of Sciences, Syktyvkar
Mrs.	TOPORKOVA	Nina	PhD student, Chair of Theory of Physical Education, Children's Health, Ural Federal University, Yekaterinburg
Mrs.	VASILIEVA	Lyubov	PhD student, Department of Faculty Therapy, I.M.Sechenov First Moscow State Medical University, Moscow
Dr.	YARMOSHENKO	Ilya	Deputy Director, Institute of Industrial Ecology, UB Russian Academy of Sciences, Yekaterinburg

PROGRAMME

SEPTEMBER 16, SUNDAY

06:00 - 18:00 **Arrival of Participants**

13:00 **Light lunch**

14.00 - 18:00 **Excursion to**

- Ganina Yama: Monastery of the Holy Tsarist Passion-Bearers
- Pervouralsk: Europe-Asia Border Column

19:00 **Words of Welcome** to the participants of the week by

- Karsten Heinz, Counsellor,
  Head of Science and Education Section, Embassy of the Federal Republic of Germany in Russia, Moscow
- Dr. Gregor Berghorn, DAAD Moscow
- Dr. Jörn Achterberg, DFG Moscow
- Dr. Liliya Bondareva,
  Deputy Chairperson of the Council of the Russian Union of Young Scientists (ROSMU)

SEPTEMBER 17, MONDAY

08:45-11:00 **Excursion through Yekaterinburg by tram**

11:00 **Registration of Participants**

12:00 **Musical Introduction**

Official Opening of the Week
with welcome addresses by

- Prof. Dr. Viktor Koksharov,
  Rector of Ural Federal University, Yekaterinburg
- Alexander Kharlov,
  Minister of International and Foreign Economic Relations of Sverdlovsk Region
- Prof. Dr. Valeri Charushin
  Chairman of Ural Branch of Russian Academy of Sciences (UB RAS)
- Dr. Renate Schimkoreit,
  Consul General of the Federal Republic of Germany in Yekaterinburg
- Prof. Dr. Peter Funke, Vice-President, DFG
- Prof. (em.) Dr. Max Huber, Former Vice-President, DAAD
- Dr. Aleksandr Shcheglov,
  Chairman of the Council of the Russian Union of Young Scientists (ROSMU

13:00 **Opening Lecture**
"Medical Epigenetics"
Prof. Dr. Roland Schüle
Scientific Director, Department of Urology and Center for Clinical Research,
University of Freiburg Medical Center

14:00	**Lunch**
14:30	**Introductory remarks to the 2nd German-Russian Week of the Young Researcher** • Prof. Dr. Peter Funke, Vice-President, DFG • Prof. (em.) Dr. Max Huber, Former Vice-President, DAAD
15:00	**Plenary Lecture** "Study of Cancer Mortality in a Rural Population of the Northern Part of East-Ural Radioactive Trace" Dr. Ilya Yarmoshenko Institute of Industrial Ecology, Ural Branch of Russian Academy of Sciences (UB RAS) *- Discussion -*
16:00	**Coffee Break**
16:30 - 18:00	**Short Lectures of Young Researchers** **Chair:** • Prof. Dr. Roland Schüle, University of Freiburg • Dr. Ilia Yarmoshenko, UB RAS Yekaterinburg KONOVALOV, Aleksey: "Medical treatment in war territories" JANDAUSCH, Anett: "Identification of novel LSD1 target genes controlling tumour metastasis" SCHMIDT, Annemarie: "Dietary factors in the regulation of Crohn's disease-like ileitis" MIRGORODSKAYA, Olga: "The study of outpatient medical care in the Russian Federation: situation and activity" MASNAVIEVA, Lyudmila: "Immunoreactivity of teenagers living in technogenic exposures"
19:30	**Evening Reception** by the Consul General of the Federal Republic of Germany in Yekaterinburg Dr. Renate Schimkoreit

SEPTEMBER 18, TUESDAY

Science and Research in Yekaterinburg

09:30	**Ural Federal University:** Scientific Projects and International Cooperation Rector Prof. Viktor Koksharov
10:30	**Ural Branch of Russian Academy of Sciences (UB RAS):** Scientific Projects and International Cooperation Aleksandr Sandakov, Head of Section International Relations, UB RAS
11:30	**Coffee Break**

12:00 **Plenary Lecture**

"Diabetes Mellitus – A Growing Problem Worldwide"

Prof. (em.) Dr. med. Hans-Jürgen Quabbe, Freie Universität Berlin

Head of Section Endocrinology/Diabetology, Koch-Mechnikov-Forum

- Discussion -

13:00 **Lunch**

14:00 **Plenary Lecture**

"Diabetes mellitus – Problems in Minority Populations"

Prof. Dr. med. Ursula Plöckinger

Interdisciplinary Centre of Metabolism: Endocrinology, Diabetes and Metabolism, Centre of Excellence for Rare Metabolic Diseases, Charité-Universitätsmedizin Berlin

15:00 **Coffee Break**

15:30 **Short Lectures of Young Researchers**

Chair:

- Prof. Dr. med. Ursula Plöckinger, Charité Universitätsmedizin Berlin
- Prof. (em.) Dr. med. Hans-Jürgen Quabbe, Freie Universität Berlin

OVSYANNIKOVA, Alla: "Diabetes mellitus in young adults - the complexity of differential diagnosis"

SHCHENDRYGINA, Anastasia: "Detection of vascular changes helps to prevent cardiovascular deceases, complications of diabetes"

DÜBER, Dominik: "Public health: enabling or threatening autonomy?"

GRUBER, Lisa: "High-fat feeding accelerates disease onset in a murine model of Crohn's Disease-like ileitis"

VASILYEVA, Lyubov: "Gender differences in microcirculation of arterial hypertension."

TERENTYEVA, Marina: The main factors and trends of formation of labour potential of the Komi Republic"

SOSHNIKOV, Sergey: "Russian public health statistics in mathematical modeling"

SHATYLKO, Taras: "Urodynamic disorders of lower urinary tract in various diseases"

DUBLJEVIC, Veljko: „Principles of justice in neuroethics of cognitive enhancement"

18:15 **Dinner**

19:15 **Workshop: "Sit together with the Presidents" Intensification of Scientific Cooperation between Russia and Germany**

- Prof. Dr. Peter Funke, Vice-President, DFG
- Prof. (em.) Dr. Max Huber, Ex-Vice-President, DAAD

Chair: Dr. Jörn Achterberg, DFG Moscow,
Dr. Gregor Berghorn, DAAD Moscow

SEPTEMBER 19, WEDNESDAY

09:00	**DWIH Moscow** **German Centre for Research and Innovation** Dr. Gregor Berghorn, Managing Director
09:30	**ROSMU - Russian Union of Young Scientists** Dr. Liliya Bondareva, Deputy Chairperson of the Council of ROSMU
10:00	**Max-Planck-Society** "Gaining Knowledge – the Max Planck Society and Russia" Dr. Per Brodersen, Cooperation with Russia/CIS, Berlin "International Collaboration within MPI Partner Group: Experience and Results" Dr. Andrey Katanin, Institute of Metal Physics, UB RAS
11:00	**Coffee Break**
11:15	**German Academy of Sciences Leopoldina** Dr. Ruth Narmann, Scientific Officer, Department International Relations, Halle - Discussion -
12:00	**Plenary Lecture** "Medical Law and Society" Prof. Dr. iur. Thomas Gutmann Chair of Civil Law, Philosophy of Law and Medical Law, University of Münster **- Discussion -**
13:00	**Lunch**
14:00	**Plenary Lecture** "Children's Health" Prof. (em.) Dr. med. Jochen Ehrich MHH Children's Hospital, Hannover Medical School (MHH) Honorary Professor at SCCH RAMS, Scientific Center for Children's Health, Russian Academy of Medical Sciences
15:00	**Coffee Break**

15:30 **Short Lectures of Young Researchers**

Chair:

- Prof. (em.) Dr. med. Jochen Ehrich, Hannover Medical School
- Prof. Dr. iur. Thomas Gutmann, University of Münster

KUZNETSOVA, Yulia: "Legal interaction between patient and physician"

TOPORKOVA, Nina: "The habilitation with preschool children with cerebral palsy in process of pedagogical support of their families"

LAUKÖTTER, Sebastian: "Health and social justice"

RUDT, Yulia: "The right to health as a constitutional value in Russia and Germany: the comparative analysis"

LOMINADZE, Georgiy: "The use MALDI-TOF mass spectrometry in a paediatric routine microbiology laboratory"

IVLEVA, Svetlana: "Non-invasive method of assessment of the liver fibrosis stage in children with chronic hepatitis"

DERPMANN, Simon: "What is the right to health?"

DURMASHKINA, Alevtina: "Metabolic programming by early nutrition"

18:15 **Dinner**

19:15 **1st Workshop:**

How to write a successful proposal
Nora Brüggemann,
Group of Research Careers, DFG Bonn

SEPTEMBER 20, THURSDAY

09:00 **DAAD - Deutscher Akademischer Austauschdienst / German Academic Exchange Service**
Dr. Gregor Berghorn,
Head of DAAD-Office in Moscow

10:00 **Alexander von Humboldt-Foundation**
Dr. Petr Stefanovich, Representative of the Humboldt Foundation (in the DWIH) Moscow

10:45 **Coffee Break**

11:00 **DFG - Deutsche Forschungsgemeinschaft / German Research Foundation**
"Fostering German-Russian Cooperation"
Dr. Jörn Achterberg, DFG Moscow
"Promoting Research Careers"
Nora Brüggemann, Group of Research Careers, DFG Bonn

12:00 **Plenary Lecture**
"Война и мир – The Interplay of Viruses and Host Cells During Invasion"
Dr. Mario Schelhaas, University of Münster
Group Leader of DFG Emmy-Noether-Research Group „Virus Endocytosis"
DFG-International Research Training Group 1409: 'Molecular Interactions of Pathogens with Biotic and Abiotic Surfaces'

13:00 **Lunch**

14:00 **Plenary Lecture**

Helmholtz-Russia Research Groups

"Towards Understanding of Life/Death Decisions in the Cells by Systems Biology"
Prof. Dr. med. Inna Lavrik
Medical Faculty, University of Magdeburg
German Cancer Research Center (DKFZ-Heidelberg)

15:00 **Coffee Break**

15:30 **Short Lectures of Young Researchers**

Chair:
• Prof. Dr. med. Inna Lavrik, University of Magdeburg ´
• Dr. Mario Schelhaas, Group Leader Westfälische Wilhelms Universität Münster

BONDAREV, Vasily: "The comparative analysis of emergence of an intrahospital infection in Russian Federation and abroad"

NIKULINA, Veronika: "Meteorological factors and the severity of a pneumonia at young men"

LYAPUNOV, Aleksandr: "Tick-borne encephalitis: the incidence of pre-clinical infections"

MOLODOVSKAYA, Irina: "Age-related aspects of the relationship between hormones and semen parameters in men"

HÖLZ, Stefanie: "LSD1 coordinates trophoblast development by retaining stem cells in their niche+directing cell fate"

PFARR, Kenneth: "Genetics of lymphedema and hydrocele in lymphatic filariasis"

SPECHT, Sabine: "Suboptimal responses to ivermectin"

DUBROVINA, Irina: "Live influenza vaccine for children and adults: transmissibility in vivo experiments"

OSOLODKIN, Dmitryj: "Replication inhibitors for flaviviruses: molecular design and putative mechanism of action"

PUSTYLNIKOV, Sergey: "Dextrans as ligands of mannose receptor and DC-SIGN family receptors - new anti-infective strategy"

SHERMAN, Yulia: "The role of gonococcal infection and its combined form with other sexually transmitted infections"

18:15 **Dinner**

19:15 **Bowling-Party**

SEPTEMBER 21, FRIDAY

09:00 **Plenary Lecture**

"Development of the nuclear medicine in the Ural region"
Dr. Vladimir Ivanov
Chair of Experimental Physics, Ural Federal University

10:00 **Short Lectures of Young Researchers**

Chair:

• Dr. Vladimir Ivanov, Chair of experimental physics,
Ural Federal University

• Prof. (em.) Dr. med. Hans-Jürgen Quabbe, Freie Universität Berlin; Head of Section Endocrinology / Diabetology, Koch-Mechnikov-Forum

BARANOV, Dmitryj: "Studying the SNPs, as a way of realization of the medicine of future"

Prof. SCHEINER, Jens: "Reading Galen in Baghdad. An insight into Greek-Arabic medical history"

FRIESE, Anika: "Multiresistant microorganisms in healthy livestock – a risk for humans?"

10:45 **Coffee Break**

11:00 **Short Lectures of Young Researchers**

SHAIMARDANOVA, Gulnaz: "Periodontal disease as a medical and social problem"

SMOTRITCKY, Aleksandr: "Medicines synthesis reactions monitoring under technological conditions"

CHAJKA, Zilia: "Clinical and experimental study of teeth of teeth restoration by ceramic inlays"

EROSHENKO, Stanislav/ Mr. TAVLINTSEV, Aleksandr: "Electric vehicles: ecological aspects and power system operation efficiency improvement"

MECHDIEVA, Kamilya: "Aspects of adaptation of students to stress. Problems of stress stability in contemporary Universities"

BYKOVA, Maria: "Features of the vitamins content in the blood plasma and extracellular matrix of bone marrow of rats in donditions of extreme effects on the body"

12:30 **2nd Workshop**

Planning International Scientific Careers -
Best Practice from Freie Universität Berlin

Tobias Stüdemann, Head of the Liaison Office of Freie Universität Berlin, Moscow

13:30 **Lunch**

14:45 **Panel Discussion:**

"Prospects for Young Researchers: What Can Be Expected of Research Organizations?"

Invited panelists:

• Sergey Pustylnikov, Novosibirsk Tuberculosis Research Institute
• Prof. Dr. Jens Scheiner, University of Göttingen
• Dr. Gregor Berghorn, DAAD-Moscow
• Dr. Jörn Achterberg, DFG-Moscow

Chairperson:

Tobias Stüdemann, Head of the Liaison Office of Freie Universität Berlin, Moscow

15:50 **Closing remarks**

Dr. Gregor Berghorn, Managing Director DWIH Moscow