Leopoldina
Nationale Akademie
der Wissenschaften

Leopoldina news

Deutsche Akademie der Naturforscher Leopoldina –
Nationale Akademie der Wissenschaften

Halle (Saale), 2 June 2010 **03/2010**

Energy research as a lesson for policy advice

Prof. Ferdi Schüth welcomes attendees at the symposium in Berlin. Photograph: Ilja C. Hendel

At the international Academy symposium "Perspectives for energy research in Germany" – held by the Leopoldina, the Deutsche Akademie der Technikwissenschaften acatech and the Berlin-Brandenburgische Akademie der Wissenschaften (BBAW) representing the Union der Deutschen Akademien der Wissenschaften – scientists held a public discussion on workable paths towards an energy system of the future. The general tenor on 12 April in Berlin was that research is essential, and a systematic approach a necessity. Politics should shape the conditions for research accordingly.

Public discussion among scientists, it was said, is "a new element of policy advice". This quote came from Prof. Ferdi Schüth ML, coordinator of the energy research plan for the Academies, in his welcome to the 160 attendees who had gathered in the BBAW's Leibniz Hall.

Dr Georg Schütte, permanent secretary at the Federal Ministry of Education and Research, accordingly emphasized in his welcome speech that "Solving the energy issue is one of the greatest challenges the world knows". The topic, he explained, affects everyone, but it is also value-laden; there is conflict between various social interests, and environmental protection plays a major role. Thus, he went on, he sees the topic of energy as a "textbook subject for policy advice" by scientists.

▶*Continued on page 7*

Dear members and friends of the Leopoldina,

Now that I have spent my first few weeks in office I would like to take this chance to thank everyone who has helped make

me feel at home at the Academy so quickly. Above all I would like to thank my predecessor, Prof. ter Meulen, for giving me the benefit of his wealth of experience, and the Secretary-General, Prof. Schnitzer-Ungefug, for her support. In future we will need the cooperation of the members and friends of the Leopoldina more than ever. In policy advice, new subjects are being taken up which require a wide spectrum of expertise. I am thinking in particular of research into health and energy, and the problems of quantum optics.

New event formats will also be required. On 5 July the Leopoldina will be presenting itself at a public debate in Berlin along with the European Academies Science Advisory Council (EASAC). All these things require careful preparation. I hope that everyone will join in. It is just a coincidence that the new corporate design is being introduced at the start of my time in office, but I am pleased to point out that this newsletter comes to you with a new look.

Best regards,

Leopoldina President congratulates Chancellor on King Charles II Medal

On 1 April 2010 the British Royal Society awarded its King Charles II Medal to the German Chancellor Angela Merkel at a ceremony in London.

Angela Merkel praises the Royal Society as a good example

The President of the Leopoldina, Prof. Jörg Hacker ML, congratulated the Chancellor in the name of the Leopoldina: "The presentation of this exceptional award shows the high degree of respect that you, Chancellor, enjoy in the scientific world. This is also beneficial to Germany as a research location."

Since 1997, the King Charles II Medal has been awarded to heads of state who have made an outstanding contribution to supporting scientific research in their country. It is named after the English King Charles II, who was particularly interested in science and who set up the Royal Society in 1660 upon his return to Britain from exile.

In her London acceptance speech Chancellor Angela Merkel praised the tradition of the Royal Society and its constant development as the "hub of debate surrounding the links between science, society and politics".

Chancellor Merkel welcomed the close cooperation between the Leopoldina and the Royal Society when it came to policy advice. She placed special emphasis on the fact that that the German government would be following the British model, and would be making increasing use of scientific consultancy, adding that it showed great foresight in this context that the Leopoldina was named the German Academy of Sciences in 2008. (mab)

EASAC office based at the Leopoldina in Halle

Since 1 April 2010 the Secretariat of the European Academies Science Advisory Council (EASAC) has been based at the Leopoldina in Halle. Ever since its foundation in 2001, the association of EU member states' National Academies of Science had been hosted by the British Royal Society in London. EASAC provides science-based policy advice for decision-makers within the EU, providing current research results for decision-making processes at an EU level and compiling recommendations on politically relevant topics. EASAC currently works primarily in the fields of energy, biosciences and the environment; the areas which have the greatest impact on the lives of European citizens. Its chairman is the former President of the Leopoldina, Prof. Volker ter Meulen ML.

For more information, see:
www.easac.eu

G8 + 5 Academies meet in Ottawa

For some years now the Academies of Science of the eight leading industrial nations (Germany, France, Britain, Italy, Japan, Canada, Russia and the USA) plus the five emerging nations (Brazil, China, India, Mexico and South Africa) have been meeting in the run-up to the G8 summit to prepare joint recommendations for the heads of state and government. These recommendations are designed to support the heads of government in their talks. In 2010, Canada was the host of the summit of the G8 heads of state and government, and there will also be an official G20 meeting.

On 7 and 8 April the Academies came together in Ottawa, Canada, to discuss two statements prepared in advance by two working groups. These were the „Joint Science Academies' Statement on Innovation for Development" and the "Joint Science Academies' Statement on Health of Women and Children".

Agreement achieved on two statements

At the G8 Academies' meeting, the Leopoldina represented German science. German-speaking representatives at this year's meeting were the President of Leopoldina, Prof. Jörg Hacker ML; Prof. Dietmar Harhoff ML of Munich, as an expert on the subject of Innovation for Development; Prof. Wolfgang Holzgreve of Basel as an expert on the subject of Health of Women and Children, and the secretary-general of the Leopoldina, Prof. Jutta Schnitzer-Ungefug.

After two days of intense discussion, extensive agreement was reached on the topics in the two recommendations; these then had to be ratified by the committees of the academies involved. The plan is to publish the recommendations during the run-up to the G8 meeting, which is to take place on 25 and 26 June in Muskoka, Canada, so that they influence the final communiqués of the heads of state and government.

At the G8 + 5 Academy meeting, Deputy Foreign Minister and G8 Sherpa Leonard Edwards outlined the main priorities the Canadian government would like to set out at the 2010 G8 Summit. These lie in the fields which the Academies will also be commenting on in their statements: innovation for the development of Africa and the health of mothers and children. (jsu)

Leopoldina President Jörg Hacker, award-winners Frédéric Merkt and Axel Meyer, with Mayor Gudrun Grieser (left to right). Photograph: Stefan Pfister press agency, Schweinfurt

Leopoldina's founding city presents the 2010 Carus Awards

Since 1962 the city of Schweinfurt – which is where the Leopoldina was founded – has awarded recipients of the Academy's Carus Medal the € 5,000 Carus Award. In 2010 it has gone to Prof. Frédéric Merkt ML (Zurich) and Prof. Axel Meyer ML (Konstanz).

Mayor Gudrun Grieser presented the City of Schweinfurt's 2010 Carus Award to Frédéric Merkt and Axel Meyer at a ceremony on 12 March at the Old Town Hall in Schweinfurt.

Frédéric Merkt, born 1966, Professor Ordinarius for Physical Chemistry at the ETH Zurich, received the award for his "pioneering research work on laser-assisted electron spectroscopy". Axel Meyer, born 1960, chair in Zoology and Evolutionary Biology at the Faculty of Biology, University of Konstanz, received the award for his "innovative research on evolutionary biology and speciation". The two scientists received the Leopoldina's Carus Medal in October 2009 at the Academy's Biennial Assembly in Halle.

The ceremony in Schweinfurt was attended by Leopoldina's President Prof. Jörg Hacker ML and his predecessors Prof. Volker ter Meulen ML and Prof. Benno Parthier ML. The laudatory speeches in honour of the award-winners were held by Jörg Hacker, who himself received the Carus Award in 2002 and said it was a good omen that his first trip in his new official capacity was to Schweinfurt. After the certificates were handed out, the award-winners, who have both also been members of the Leopoldina since 2009, presented their work in the form of popular science lectures. Merkt spoke on "Photons, electrons, atoms and molecules" and Meyer on "The secret of secrets – what Charles Darwin did not know about the origin of species".

Following the tradition of the Carus Award ceremony, which now goes back almost fifty years, the award-winners, the President of the Academy and his predecessors then signed the Golden Book of the city of Schweinfurt.

Of the 38 scientists who have received the award since 1962, the most famous are the seven Nobel Prize Laureates Prof. Feodor Lynen ML, Prof. Jacques Monod ML, Prof. Manfred Eigen ML, Prof. Georges Köhler ML, Prof. Christiane Nüsslein-Volhard ML, Prof. Erwin Neher ML and Prof. Bert Sakmann ML. (um)

German President receives Jörg Hacker and Volker ter Meulen

On 31 March 2010, German President Horst Köhler received the President of the Leopoldina, Prof. Jörg Hacker ML, and his predecessor Prof. Volker ter Meulen ML at the Bellevue Palace in Berlin. Since the Academy was appointed German National Academy of Sciences in 2008, President Köhler had been the Leopoldina's patron. He welcomed Jörg Hacker as the new President and paid tribute to the work of Volker ter Meulen, during whose time in office the Leopoldina was declared a national academy. Jörg Hacker and Volker ter Meulen reported to the President, who was in office until the end of May, on the work of the Academy and described the focus of its future programme. They explained that the Leopoldina will be placing particular emphasis on developing science-based policy advice and establishing international connections, especially to African science academies.

Leopoldina's previous President Volker ter Meulen, German President Horst Köhler and Leopoldina's current President Jörg Hacker at Bellevue Palace in March (from left).

Photograph: German government

The Leopoldina's new word and device mark combines tradition with modernity.

Leopoldina
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A modern look bound by tradition

From now on, the Leopoldina's new corporate design will be used uniformly on all communication media. The key feature is the logo with its redesigned seal.

The Leopoldina has a new corporate design. Its new appearance is designed to give the Academy a uniform, easily recognisable public image. In future it will be applied to all the Leopoldina's communication media, from its letter paper and all its publications to its website. The new look is bound by the tradition of the Academy and retains time-tested elements.

Heraldic elements are more clearly recognisable

The key feature of the new corporate image is the word and device mark, with a seal and the words "Leopoldina. Nationale Akademie der Wissenschaften". The new logo takes the traditional Leopoldina seal and makes its heraldic components more clearly recognisable, bringing them further into the foreground and setting them off more clearly.

Thus, the snakes symbolise the foundation of the Academy in 1652 by four doctors. The ring is a symbol of the integrity and loyal solidarity of the members of the Academy, while the book stands for the codex of knowledge and untiring study. On the book is the Leopoldina's motto: nunquam otiosus („never idle"). The eye and the sun stand for enlightenment. The crowned eagle rising recalls the granting of the Imperial privilege by Emperor Leopold I in 1687.

The corporate image uses the two fonts Calibri and Georgia, and the colours blue (Pantone 541) and yellow (Pantone 125). The future corporate font for letters and brochures will be Calibri, a modern sans-serif font. Georgia is very similar to the roman type used in the original seal and will be used for headings. The blue and the yellow will be used as the Leopoldina's corporate colours. The colour blue was selected as a primary colour, while yellow, used for highlights, picks up on the yellow traditionally used by the Leopoldina.

The new layout is accompanied by a new Internet address and email addresses. In future, the Leopoldina can be found at www.leopoldina.org. Staff members' addresses are now to be made up of their first and last names separated by a full point, and an ending to match the new website: firstname.lastname@leopoldina.org. The ending .org stands for "organisation", is not country-specific and is one of the few generic top-level domains in the world. (cw)

New Academy brochure published

A new brochure on the Leopoldina has come out; the first publication in the new design. It provides readers with an introduction to the Academy, describes the Leopoldina's tasks and lists the person to contact for each field.

The brochure is soon also to be published in English.

It can be downloaded as ***a PDF file*** at www.leopoldina.org or ordered from the Press and Public Relations department at +49 345 472 39 801 or by email: *presse@leopoldina.org*.

Policy advice and an exchange of ideas about the Leopoldina's work as German Academy of Sciences: the academic group on "Ageing in Germany" hands its recommendations to German President Horst Köhler in March 2009 (left-hand photo). The members of the Leopoldina committee at a meeting with Chancellor Angela Merkel on 12 May 2010 (right-hand photo). Photographs: German government

World's oldest science academy takes its place in Europe

As the Leopoldina enters its new age the transition has been characterised by an increasingly influential role in offering science advice / By Prof. Jörg Hacker ML

The Leopoldina is the world's oldest continuously existing academy for medicine and the natural sciences, with a history dating back at least 355 years. It now has more than 1,300 academy members around the world.

Like other German academies, it has played a number of different roles over the years. In the 17th century, it was a science institution, a function largely taken over by universities at the beginning of the 19th century. Since then, academies have primarily been learned societies and served as places for the interdisciplinary exchange of ideas. Members are elected on the basis of their achievements and meet regularly to discuss their academic work. The Leopoldina helps to foster talented young scholars, assess and support research quality and promote scientific cooperation and interaction.

Although the Leopoldina continues to derive its authoritative status from its membership, its appointment as Germany' s national academy of sciences in July 2008 marked a major change. Since then, the academy has received additional funding from the federal and Saxony-Anhalt state governments to help it fulfil the task of advising both policymakers and society at large.

Policymakers are increasingly turning to scholars for advice. Amid the countless possible sources of advice, academies have a particular strength in their ability to provide advice that is not only expert, authoritative and relevant, but is also independent of any vested interests.

To include all German academies and academic disciplines in this advisory role, a coordinating body was established involving the Union of the German Academies of Sciences and Humanities and Acatech, the German Academy of Science and Engineering. The academies identify issues and set up interdisciplinary teams to create statements and recommendations. Also, they work both independently and in cooperation with other scientific institutions such as the German research foundation the Deutsche Forschungsgemeinschaft (DFG).

Worldwide, the demands placed on scientific advisers are growing. Today, it is not merely a matter of providing information - scientific knowledge, after all, is not the same as scientific advice. But it is also vital to present facts in a transparent manner, to independently evaluate them and identify options and possible solutions. A successful scientific adviser must utilise the processes of science, relying on peer review and transparent procedures, and explicitly stating any areas of uncertainty.

It is important to highlight areas where there is no consensus and propose ways of filling the gaps in knowledge and reduce uncertainties. Additionally, they must try to indicate how the position may change with time.

It is crucial for academies to remain independent and impartial when acting in this role and to maintain an ongoing dialogue with policymakers and the public. At the Leopoldina, we set our own agenda in terms of issues - but in doing so, we try to anticipate future problems, recognise emerging issues, and draw attention to potentially controversial topics. In the same way as other expert groups, we can also respond to external requests, and our advice will then be as unbiased as any work performed at our own initiative.

However, it is important to remember, that expert advice can never be a substitute for public debate or political deliberation. It is not enough to make recommendations to policymakers; the knowledge on which they are based must be presented and conveyed in a way the general public can understand. This encourages necessary public debate on issues of relevance to society.

As the Leopoldina enters its new age the transition has been characterised by an increasingly influential role in offering science advice on issues of political and social relevance at the international level.

In April, the secretariat of the European Academies Science Advisory Council was transferred to the Leopoldina from the UK's Royal Society. EASAC was formed nine years ago by the national science academies of European Union member states to enable them to collaborate in providing science advice to policymakers in the European institutions. It has developed increasing stature and impact and now has the critical mass to make areal difference advising on EU policy decisions.

The Leopoldina has greatly welcomed the growing role and responsibility inherent in becoming a modern national academy. Building on a long tradition of supporting research, education and scientific debate, there is now an unparalleled opportunity to engage more widely with other academies, science bodies, multilateral organisations and the policy community, in creating effective national and international relationships and in supporting improved public communication.

Ernst-Ludwig Winnacker on the IAC committee to review the procedures of the Intergovernmental Panel on Climate Change

On 3 May the InterAcademy Council (IAC) formed a committee which is to undertake a review of the processes and procedures of the Intergovernmental Panel on Climate Change (IPCC), which has come under fire lately. The IAC was asked by the United Nations to form this committee of independent experts. The Leopoldina, a member of the IAC, named Prof. Ernst-Ludwig Winnacker ML, for a long time the president of the DFG and Vice-President of the Leopoldina, as an expert. Altogether the committee is made up of twelve scientists led by the economist Harold T. Shapiro, who spent many years as an advisor to presidents of the USA.

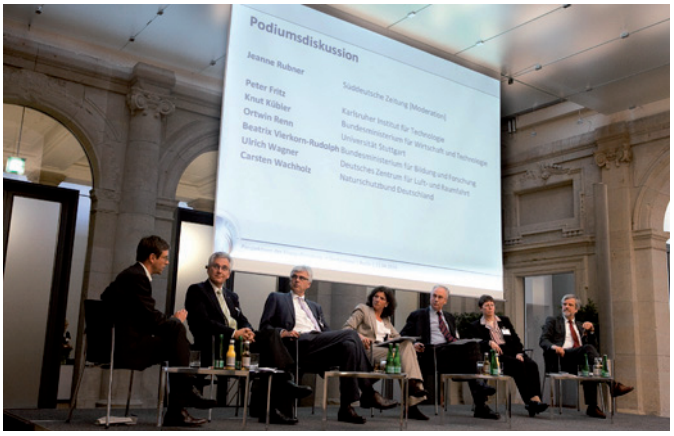
The committee of experts is to present recommendations on possible revisions of IPCC processes and procedures. It is also asked to recommend measures to ensure the ongoing quality of the IPCC's reports. The IPCC came under fire at the start of the year, in part due to its handling of data used for forecasts on climate change but apparently containing mistakes. Scientists around the world believe, however, that the errors in the reports make no difference to their general message: that climate change is advancing.

The IAC, a multinational organisation of science academies, was founded in the year 2000. It has 15 permanent members representing Argentina, Australia, Brazil, China, France, Germany, India, Indonesia, Japan, South Africa, Turkey, the United Kingdom, and the United States, plus the African Academy of Sciences and the Academy of Sciences for the Developing World (TWAS). The aim of the council is to provide science-based advice on global issues to international bodies such as the United Nations and the World Bank. (mab)

Statement by the Academies on the revision of the EU Directive on the Protection of Animals used for Scientific Purposes

On 6 April 2010 the Leopoldina issued a joint statement with the Deutschen Akademie der Technikwissenschaften acatech and the Berlin-Brandenburgische Akademie der Wissenschaften (BBAW, for the Union der Deutschen Akademien der Wissenschaften) on the revision of EU Directive 86/609/EEC on the protection of animals used for scientific purposes. In this statement the academies appeal to policy-makers (the European Parliament, the European Council of Ministers, the European Commission) to achieve a balance between animal protection and research when developing the directive, in the interests of effective health protection. They asserted that the draft, which plans for drastic limitations and blanket bans, created an imbalance and was disadvantageous to basic research and biomedical research. The use of non-human primates for scientific purposes, they said, must be regulated in a manner which is geared towards the purposes of the experiment and does not impede biomedical research and the development of medicines. (kh)

Read the statement online: ***www.leopoldina.org***



The president of the Australian Academy of Technological Sciences and Engineering, Robin Batterham (left-hand photo), Leopoldina's Vice-President Bärbel Friedrich (centre) and the panel discussion with Carsten Wachholz (NABU), Peter Fritz (KIT), Ulrich Wagner (DLR Cologne), presenter Jeanne Rubner (Süddeutsche Zeitung), Knut Kübler (BMWi), Beatrix Vierkorn-Rudolph (BMBF) and the coordinator of the energy research plan Ortwin Renn (right-hand photo, from left).

Photographs: Ilja C. Hendel

"Energy research needs to open up possible courses of action for energy policy"

"Only with the help of research will we be able to overcome these great challenges." Permanent secretary Dr Schütte reminded his audience that according to the coalition contract, the German government will be putting forward an energy plan in autumn 2010, with an energy research programme for Germany to follow one year later. The next speaker, Prof. Frank Behrendt (acatech), explained how important a systematic viewpoint is in this context, seeing the issue as a whole and not just becoming fixated on "individual perspectives" or "single points". Alongside Prof. Ortwin Renn (BBAW), Prof. Eberhard Umbach (acatech) and Prof. Ferdi Schüth ML (Leopoldina), Prof. Behrendt is a coordinator for the academic working group "The Future of Energy Research", which has already presented politicians with its "Strategy for an Integrated Energy Research Programme for Germany". In this strategy, in autumn 2009 the academies appealed to politicians to launch an offensive aimed at integrative, interdisciplinary energy research. That offensive is now to be extended. As Prof. Behrendt explained, "Energy research needs to open up possible courses of action for energy policy".

An overview of the research and development required to make a functioning worldwide energy supply possible even in 2050 was provided by Prof. Sven Kullander, Vice-President of the Royal Swedish Academy of Sciences and Vice-President of the European Academies Science Advisory Council, where he heads the EASAC Energy Steering Panel. Frank-Detlef Drake reported on R&D projects ("Starting-points for a sustainable future energy supply") run by the RWE power utility company, where he is in charge of the R&D department. The psychologist Prof. Ellen Matthies (Ruhr-Universität Bochum) spoke on "Energy consumption seen from the viewpoint of behavioural science", providing an overview of energy research in the field of psychology, which has taken up the topic of energy-related decision-making.

Prof. Robin Batterham, president of the Australian Academy of Technological Sciences and Engineering, spoke on a topic which has generated a great deal of public emotion: carbon capture and storage (CCS) – trapping carbon emissions and storing them under the ground. This is designed to reduce global warming, considered mainly to be caused by CO_2 emissions in the atmosphere. Batterham, who was Chief Scientist to the Australian government for several years, explained that the next ten years would show whether CCS is accepted by the population and whether the costs are bearable. He added that by 2050 CCS could make up just one fifth of CO_2 reduction.

Following this speech, Dr Guido Reinhardt of IFEU, the Institute for Energy and Environmental Research in Heidelberg, spoke on the use of biomass to produce power, before the start of the concluding panel discussion on energy research, presented by the journalist Jeanne Rubner. The panel members described clearly how important it is to promote a wide range of research without losing sight of consumers. Prof. Ortwin Renn commented that it was problematic to stake everything on just one option. "If there is then a problem, we have no way to react." Dr Beatrix Vierkorn-Rudolph of the Federal Ministry of Education and Research said that it was important to adopt the right combination of energy sources: "There was a time when too great store was set by atomic energy."

Dr Knut Kübler of the Federal Ministry of Economics and Technology added that wide-ranging support for research in Germany was helping increase the country's technological profile, which was important for its economy. Carsten Wachholz of the German environmental association NABU pointed out that there needed to be a public discussion on criteria to assess which technologies were practical. Dr Peter Fritz of KIT commented "By 2050 we will need all the technologies currently available". Prof. Ulrich Wagner of the German Aerospace Centre made the point that future technologies should not be more expensive than standard energy production. (mab)

How does genetics help prevent disease?

International Academy Symposium on 7 and 8 February 2010 in Bonn: Predictive Genetic Diagnostics as an Instrument of Disease Prevention / By Prof. Peter Propping ML

Early detection of diseases, preferably before their clinical manifestation, is the best way of ensuring their effectively prevention. "Secondary prevention" is thus gaining increasing importance in medicine, starting out with the screening of pregnant women and newborn babies and extending as far as early cancer detection. Scientific development offers a growing number of ways to use predictive genetic testing to prevent disease.

Genetic testing is already everyday practice with inherited cancers.

In the case of inherited cancers, tests of this kind are already part of everyday practice. As yet, we have only discovered the extent to which genetics can contribute to disease prevention for a small number of inherited diseases. For multifactorial diseases, especially, it is still difficult to specifically predict the risks, as no satisfactory genetic model yet exists for any of these diseases. On 7 and 8 February an international Academy symposium took place on this subject in Bonn, attended by the Leopoldina, the Deutschen Akademie der Technikwissenschaften acatech and the Berlin-Brandenburgische Akademie der Wissenschaften (BBAW, for the Union der Deutschen Akademien der Wissenschaften). The academies put together a joint working group to work on the topic of "Predictive genetic diagnostics" (see "Statement by the Academies is in preparation").

Screening is systematic testing for a certain disease in a defined group of people (e.g. sorted by age or sex). Tests need to be fast, make a clear division between the healthy and unhealthy, and meet both ethical and financial requirements. When screening is positive the patient must be referred to a doctor. There must be a means of intervention, explained Prof. Martina Cornel (Amsterdam, the Netherlands). According to Prof. Georg Hoffmann (Heidelberg, Germany), one model for the successful application of screening is the testing of newborn babies for inherited metabolic disorders (mainly genetic in cause) which can be treated through their diet or by substitution. In Sardinia, where autosomal recessively inherited beta-thalassemia is particularly common, Prof. Antonio Cao (Cagliari, Italy) has successfully run a voluntary heterozygote screening programme for beta-globin gene mutations among young adults. If both parents are heterozygous for a pathogenic mutation, one quarter of their children will be affected by beta-thalassemia, a serious disease. After human genetics counselling, many couples decide to undergo prenatal diagnosis.

A high blood cholesterol level leads to arteriosclerosis and early heart attack. The Netherlands has been carrying out screening for high cholesterol levels since 1994. Above a certain concentration, molecular genetic testing is carried out on the genes in question, followed by cascade screening among relatives. Thanks to this method the number of patients undergoing medicinal treatment has risen considerably, reported Dr Peter Lansberg (Amsterdam, the Netherlands).

Prof. John Burn (Newcastle, UK) is currently establishing methods to identify mutations in the genes BRCA1/2, which are connected to a greatly increased risk of inherited breast/ovarian cancer and which lend themselves to testing in the general population. Prof. Hilger Ropers (Berlin, Germany) presented the possibilities of next-generation sequencing and its application in preventive medicine. If the heterozygote screening in Sardinia is generalised, it would be possible to screen young couples for numerous mutations whose heterozygosity leads to serious recessively inherited diseases.

Enzymes altered by mutations, which pharmaceutical products first need to activate before they can take effect, can make medication ineffective, as Prof. Matthias Schwab (Stuttgart, Germany) showed for Tamoxifen, which is used to prevent relapse after breast cancer therapy.

Mutations in genes which are common in the general population, and whose products play a role in blood clotting, can cause thrombosis. The analysis of mutations in these genes is among the most commonly requested tests. Prof. Saskia Middeldorp (Leiden, the Netherlands) has carried out extensive analyses on the subject. There is little evidence of any therapeutic use for this genetic testing, especially as any such treatment is associated with risks.

The symposium was an impressive demonstration of the points which need to be taken into account if modern genetic analysis procedures are to be used to predict a tendency towards disease. This will be a long-term task for genetic medicine.

Statement by the Academies on this topic is in preparation

The scientific world is aware of an increasing number of genetic variations linked to disease predispositions. For some, prevention programmes or early detection come into question. The possibilities of genetic diagnosis are constantly improving and costs falling. At the same time, the number of dubious applications available is rising. The public lacks guidelines when it comes to medicinal use. Before the end of 2010 a joint working group appointed Leopoldina, acatech and the BBAW will be presenting a statement and setting out the possibilities and limits of predictive genetic diagnosis for healthy people. It will indicate when this kind of diagnosis is medicinally constructive. The author of the article, Leopoldina member Prof. Peter Propping ML (Bonn, Germany) is the coordinator of this working group. (mab)

People

Deceased members

Lothar Cossel ML / Leipzig / Germany
13.12.1924 - 20.03.2010 - pathology and forensic medicine
Cossel was admitted as a member of the Leopoldina in 1984 for his pathological research work on the liver, lungs and kidney. He earned a worldwide reputation as an electron microscopist.

Marshall W. Nirenberg ML / Potomac / USA
10.04.1927 - 15.01.2010 - biochemistry and biophysics
Nirenberg was admitted to the Leopoldina in 1966. His research made it directly possible to unravel the genetic code. His working group was the first to create a complete dictionary of genetic code.

Armen L. Takhtajan ML / St. Petersburg / Russia
24.07.1932 - 13.11.2009 - organismic and evolutionary biology
Takhtajan was elected as a member in 1984 for his work in the field of phylogenetic taxonomy. His research helped scientists draw closer to solving problems related to the systematics and phylogeny of flowering plants.

Eckart Viehweg ML / Essen / Germany
30.12.1948 - 30.01.2010 - mathematics
Viehweg's scientific work made him one of Germany's most highly regarded mathematicians. He was admitted to the Leopoldina in 2009 for his research into algebraic geometry.

Newly elected members of the Academy, 24 March 2010

Susanne Albers, Berlin/Germany, Professor of Computer Science at the Department of Computer Science at the Humboldt University in Berlin (Informatics section)

Elisabeth André, Augsburg/Germany, Professor of Computer Science at the University of Augsburg's Institute of Informatics (Informatics section)

Wolfgang Baumjohann, Graz/Austria, Professor of geophysics and space research at the LMU Munich and Executive Director of the Space Research Institute (IWF) at the Austrian Academy of Sciences in Graz (Earth Sciences section)

Bernhard Eitel, Heidelberg/Germany, Professor of Physical Geography at the Department of Geography at Heidelberg University and vice-chancellor of the university (Earth Sciences section)

Joachim Grifka, Bad Abbach/Germany, Professor of orthopaedics and director of the Department of Orthopaedic Surgery at the University of Regensburg, at the Asklepios Hospital in Bad Abbach (Surgery, Orthopaedics and Anaesthesiology section)

Helmut Hofer, Princeton/USA, Professor of Mathematics at the School of Mathematics, Institute for Advanced Study, Princeton (Mathematics section)

Guinevere Kauffmann, Garching/Germany, Doctor of Astronomy at the Max-Planck Institute for Astrophysics, Garching (Physics section)

Wolfgang Lück , Münster/Germany, Professor of Mathematics at the Mathematical Institute at WWU Münster (Mathematics section)

Klaus Mezger, Bern/Switzerland, Professor of Geochemistry at the Institute of Geological Sciences at the University of Bern (Earth Sciences section)

Jacob Palis, Rio de Janeiro/Brazil, Professor of Mathematics at the Instituto Nacional de Matemática Pura e Aplicada, Rio de Janeiro, and at the time of his election President of the Brazilian Academy of Sciences (Mathematics section)

Achim Richter, Darmstadt/Germany, Professor emeritus of Experimental Physics at the Nuclear Physics Institute, TU Darmstadt (Physics section)

Petra Schwille, Dresden/Germany, Professor of Physics and Biophysics and Director of the Institute of Biophysics, Biotechnology Center, TU Dresden (Physics section)

Alexei Starobinsky, Moskau/Russia, Professor of Theoretical Physics and Astrophysics at the Landau Institute for Theoretical Physics, Moscow (Physics section)

Heinz Wanner, Bern/Switzerland, Professor of Climatology and Meteorology at the Geographic Institute of the University of Bern and President of the Oeschger Centre for Climate Change Research, Bern (Earth Sciences section)

Moussa B.H. Youdim, Haifa/Israel, Professor emeritus of Pharmacology at the Technion Rappaport Family Faculty of Medicine and Director of the Eve Topf and National Parkinson Foundation Centers of Excellence for Neurodegenerative Diseases Research, Haifa (Neurosciences section)

Peter Zoller, Innsbruck/Austria, Professor of Theoretical Physics at the Institute for Theoretical Physics, University of Innsbruck (Physics section)

Events

Announcement
Leopoldina's 2011 Biennial Assembly: "What is life?", 23 to 25 September 2011, Halle an der Saale (Germany)

"What is life?" is one of the oldest questions ever asked in human history. Initially a domain of the philosophers of the Ancient World, the issue is now increasingly coming into the focus of natural science. In the 1940s physicists such as Erwin Schrödinger asked this question while studying the problem of where hereditary factors come from: genes. Since the breakthrough in functional genome research, today scientists can describe and understand molecular life processes with a complexity which would have been totally unthinkable just twenty years ago. The Leopoldina would like to treat and discuss this fundamental issue at its 2011 Biennial Assembly. This includes issues such as the creation of artificial life using methods from synthetic biology; the question of what is specific to human life; the issue of stem cells and their application in basic research and practical medicine, other concepts from modern medicine (genomics, individualised medicine, etc.) used to maintain life, and the problem of how to differentiate between organisms and computer systems which are able to learn. Questions about the development of life, with reference to evolutionary theory, will also play a role at the Biennial Assembly.

Scientific organisation:
Prof. Michael Hecker ML, Greifswald

Leopoldina
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Abbreviations
ML = Member of the Leopoldina