Recommendations on preimplantation genetic diagnosis

Ad-hoc statement by the Leopoldina favours allowing this diagnostic procedure subject to strict conditions

On 18 January the Leopoldina publicly issued and published an ad-hoc statement on preimplantation genetic diagnosis (PGD). This was done in conjunction with acatech – the German Academy of Science and Engineering, the Berlin-Brandenburg Academy of Science and Humanities (BBAW) and by the majority of the academies belonging to the Union of German Academies of Science. The underlying message of the statement: PGD is to be placed on an equal footing with prenatal diagnosis (PD) by lawmakers and access should be given in Germany under certain conditions to those women affected. This prevents having to terminate pregnancies where the embryo is severely affected by hereditary disease.

The statement entitled „Präimplantationsdiagnostik – Auswirkungen einer begrenzten Zulassung in Deutschland“ (an English version will be published this spring) covers not only medical and legal aspects, but also the ethical aspects of PGD as well. This comes in light of the current need for regulation, resulting from the decision made by the federal supreme court on 6 July 2010 that a ban on PGD cannot be derived from the embryo protection laws.

The 30-page report was presented on 18 January by the members of the PGD workgroup at a federal press conference and information event in the German parliament in Berlin. Since then it has received a great deal of public response as part of the current debate. Parliamentarians want to finalize a law on regulating PGD before summer recess. Further statements, for instance from the German Ethics Council are expected shortly. PGD is a diagnostic procedure. It allows people carrying a diseased gene to become parents of a child not suffering from this severe hereditary disease.

Kind regards,
To enable this, embryos conceived through in-vitro fertilization are tested for this disease before being implanted in the uterus. An example of a similar test in the field of prenatal diagnoses, i.e. examination of the embryo in the womb, is amniocentesis. As a result the pregnancy may be terminated due to medical indication. The statement by the Academies formulates in summary the following main recommendations. The text:

“Due to a similar conflict situation for the woman, PGD should be legally allowed under limited and defined conditions and the consequences associated with this for the embryo are to be placed by lawmakers on an equal footing with PD (prenatal diagnosis, GenDG) and pregnancy termination (Article 218 of the German Penal Code). This equal footing is to be restricted by only allowing in vitro PGD for non-totipotent cells of the embryo, whereby it is recommended that conditions be considerably restricted. Testing can only be done for couples whose children, from a medically objective point of view, are at high risk of an onset of a well-known, severe monogenic disease or a genetic chromosomal disorder, or if there is a risk of a stillbirth or a miscarriage. There should be no age limit for the onset of the disease. PGD may not be used for nationally or socially defined objectives that do not concern the well-being of the couple affected. A ban on selecting the genetic traits of children according to the wishes of their parents, determining the sex of the child with no relevance to genetic disease, using embryos for research purposes and investigating new, in other words, non-hereditary chromosomal disorders (aneuploidy screening) should continue to exist. Furthermore a competent authority should be set up to pass regulatory statutes or guidelines on how PGD is to be conducted. PGD should only be allowed to be carried out at a handful of facilities that are designated for this purpose and regularly checked by the competent authority. PGD should only be allowed if authorized by the designated competent authority following a substantiated request. On top of a law governing PGD and a possible modification to the genetic diagnosis law, the passing of a reproduction medicine law should be considered.”

The statement was produced by an Academy group consisting of 13 renowned scientists of various fields: Prof. Dr. Claus R. Bartram ML (human geneticist, Heidelberg), Prof. Dr. Henning M. Bei-er ML, who is also a member of acatech, (embryology and reproduction biology, Aachen), Prof. Dr. Klaus Diedrich ML (gynecology and reproduction medicine physician, Lübeck), Prof. Dr. Philipp U. Heitz ML (Physician, member of the Leopoldina Steering Committee, Zurich), Prof. Dr. Hermann Hepp ML (gynecology and reproductive medicine physician, Munich), Prof. Dr. Otfrid Höffe ML (legal and moral philosopher, Tübingen), Prof. Dr. Christiane Nüsslein-Volhard ML, and member of the BBAW, (developmental biologist, Tübingen), Prof. Dr. Peter Propping ML (human geneticist, Bonn), Prof. Dr. Bettina Schöne-Seifert ML (medical ethicist, Münster), Prof. Dr. Jochen Taupitz ML (medical law specialist, Mannheim), Prof. Dr. Anna M. Wobus ML, also member of the BBAW, (cell biologist, Gatersleben), Prof. Dr. Rüdiger Wolfrum ML (legal scholar, Heidelberg) und Prof. Dr. Hans-Peter Zenner ML (physician, member of the Leopoldina Presidium, Tübingen) as leading moderator. (mab)

The complete statement explaining in detail the basis for and the impact of the recommendation can be found at www.leopoldina.org

Printed copies of the statement can be ordered from the Leopoldina by e-mail at politikberatung@leopoldina.org

Constructive discussion on policy advice by the academies

After publishing the statement, various articles appeared in the Süddeutsche Zeitung and the Frankfurter Allgemeine Zeitung which covered the policy advice given by the scientific academies, particularly that of the Leopoldina as a National Academy of Sciences. In addition to Leopoldina’s President Prof. Dr. Jörg Hacker ML, others also commented on the topic including Prof. Dr. Ernst-Ludwig Winnacker ML, Prof. Dr. Otfrid Höffe ML, Prof. Dr. Peter Graf Kielmansegg, Prof. Dr. Dietmar Willoweit, Prof. Dr. Ottfried Edenhofer and Bundestag President Norbert Lammert.

You can find the text of Leopoldina’s President Jörg Hacker’s “Mehr harte Fakten” (“More hard facts”) on the Leopoldina’s website at: www.leopoldina.org/fileadmin/user_upload/Politik/artikel_hacker_sz_20110122.pdf
Ernst-Ludwig Winnacker was honoured for his service to the Academy

The Academy honoured Ernst-Ludwig Winnacker, its former Vice-President and the long-time President of the German research foundation Deutsche Forschungsgemeinschaft (DFG), with the Leopoldina’s Medal of Merit. Winnacker was presented the award by Leopoldina’s President Jörg Hacker on 14 December in the assembly hall at the University of Halle.

“The Medal of Merit reflects the Academy’s appreciation,” says Hacker who spoke of Winnacker’s major contribution in his laudation. Winnacker, a member of the Leopoldina since 1988 contributed greatly to the Academy for a long time as Vice-President (1995 to 2005). New departments were created and new projects were established. These were the first important steps on the Leopoldina’s way to becoming a working Academy. Even today, Winnacker continues to be a tireless advisor, bringing his expertise to the Leopoldina’s committees.

Hacker goes on to explain the great contribution Winnacker has made to science on a whole: to molecular biology and genetic engineering in Germany as a top scientist, to the German science system as a long-time President of the DFG and to fostering young scientists. Winnacker also helped start the “Exzellenzinitiative” (Excellence Initiative) which has fundamentally altered the higher education landscape in Germany. Finally, Winnacker is just as important for the “luminous power of German science” abroad. He tirelessly worked towards internationality and established liaison offices. The fact that he became the first secretary general of the European Research Council (ERC) in Brussels would therefore be consistent; he achieved a lot in an European sense. Cornelia Pieper, Minister of State at the Federal Foreign Office, also recalled in her welcome speech how Winnacker worked to build up the ERC: “Freedom to do scientific and research work is what allows us to cross borders.”

In his subsequent presentation “Wissenschaft ohne nationale Grenzen – eine europäische Herausforderung” (Science Without National Borders – an European Challenge) Winnacker spoke of the “strange contradiction” of how research is internationally orientated, yet all of the organizations supporting and promoting research are active on a national level. A contradiction that must be overcome – also in the context of global challenges like energy supply, climate change, the state of the oceans, the condition of the financial markets and major health problems like high infant mortality. “Science is needed everywhere we look. Problems don’t stop at borders,” says Winnacker. The Foundation of the ERC in 2007 was an important step for Europe in overcoming national egotisms to a certain degree. “It is not a competition for countries, but for institutions.” Scientists go where they find the best conditions – regardless of the country. In Europe the magnets are the Swiss universities in Zurich and Lausanne, the universities of Cambridge and Oxford and the Free University of Amsterdam. In Germany only the Max Planck Institutes can compete with such degree of attractiveness. “Of course it’s all about money.” In the end, Winnacker argued for taking on the “sacred cow” of EU agricultural subsidies and for using this money to finance more research and science.

Ernst-Ludwig Winnacker (born in 1941) was Vice-President of the DFG from 1987 to 1993 and its President from 1998 to 2006. From 2007 to June 2009 he was the first secretary general of the ERC in Brussels/Belgium. He has been the secretary general of the Human Frontier Science Program in Strasbourg/France since 1 July 2009. The latter is an organization which promotes international research in the field of life sciences and, above all, young scientists. Ernst-Ludwig Winnacker is a member of the Leopoldina in the Section of Human Genetics and Molecular Medicine.

The Medal of Merit is awarded for outstanding work for the good of the Academy. It bears the portrait of the honored member. Ernst-Ludwig Winnacker’s medal was designed by Bernd Göbel, emeritus professor at the Burg Giebichenstein University of Art and Design Halle. (mab)
Health research is this year’s topic

The Leopoldina will take part in the Year of Science 2011 by offering many activities

Annette Schavan, minister of education and research and the initiative “Wissenschaft im Dialog” (Science in Dialogue) have proclaimed 2011 to be the Year of “Research into our Health”. This year of health research is to direct attention towards people and to open up social and interdisciplinary debate on the goals, challenges and the current fields of activity of health research. It will also demonstrate how important effective health research is for good, quality medical care in the future.

As a medical and scientific Academy, the Leopoldina would like to lend special support for this topic and has put together an extensive programme with many events. This includes several symposia whose subjects can already be deduced: Which changes will research face in the coming years and which areas of research will shape our society in the future?

**WHAT IS LIFE?**

One of the Leopoldina’s symposia will broach the issue of the current state of discussions regarding the impact that epigenetic alterations have on human diseases. Two other symposia will deal with innovative therapies in palliative medicine, in other words treatment of non-curable diseases, and with treatment for diseases with the help of regenerative medicine. Here, the body’s own cells, organs or tissue are replaced by cultivated tissue or healed by triggering the body’s own regeneration and repair processes.

The Leopoldina will devote this year’s Annual Assembly to the topic “What is Life?” something that not only health research is grappling with, but also many other disciplines as well. From 23 to 25 September attention will be given to questions surrounding, for example, origin, diversity, models, impact of life and, not least, threat to, preservation and the limits of life. While Nobel Prize winner Prof. Dr. Christiane Nüsslein-Vollhard ML enlightens on the emergence of colour patterns of fish (“Die Entstehung der Farbmuster bei Fischen”) on 23 September, another approach to the question of life will be made by Prof. Dr. Richard Schröder who refers to the topic from a theologocial point of view.

**ABOARD THE “MS WISSENSCHAFT”**

In 2011 the Leopoldina will be a part of the exhibition ship “MS Wissenschaft”. The ship belonging to the initiative “Wissenschaft im Dialog” will travel through Germany with an exhibition encompassing...
sing the entire bandwidth of health research. Those who visit the ship in one of the 35 cities it will stop in, can study the Leopoldina’s exhibit which throws light on viruses and bacteria, i.e. how they function and how they can be combated. Just like what is offered aboard the “MS Wissenschaft”, a part of the programme of the Leopoldina Night on 1 July in Halle is also directed at young visitors. Health will also be on the menu as part of the 10th Night of Sciences in Halle.

QUESTIONS TO LEOPOLDINA-EXPERTS

At the beginning of the year the Leopoldina published a list of 76 health experts from its series who are available to answer questions posed by the media and other interested people.

In this context it must also be mentioned that in mid-January, the Leopoldina, along with other academies, published statements regarding pre-implantation genetic diagnosis. Here a topic currently being hotly debated is taken up by science and research, thereby contributing to developing a political opinion.

The programme of the Leopoldina can be found at: www.leopoldina.org

Information on the Year of Science can be found at: www.forschung-fuer-unsere-gesundheit.de

Information on the exhibition on the “MS Wissenschaft” and its timetable can be found at: www.ms-wissenschaft.de

Leopoldina events in the Year of Science „Research into our Health“

Lectures, Talks and Exhibitions

Thursday, 3 March, 6.00 p.m., Berlin
Leopoldina Talk “Bestimmen die Gene unser Schicksal?” (Do our genes determine our fate?)
Prof. Dr. Jörg Hacker ML, Prof. Dr. Peter Propping ML, Prof. Dr. Klaus Tanner ML, PD Dr. Denise Horn, Andrea Hahne, moderated by: Dr. Patrick Illinger, Süddeutsche Zeitung

Tuesday, 26 April, 6.00 p.m., Halle
Leopoldina Fishbowl on preimplantation genetic diagnosis round of discussions in cooperation with the Haus der Wissenschaft Braunschweig

19 May to 29 September, nationwide in 35 cities,
“MS Wissenschaft” stops found at: www.ms-wissenschaft.de
Leopoldina exhibition “Pathogens and the immune system”

Friday, 1 July, from 6.00 p.m. onwards, Halle
Leopoldina Night as part of the Night of Sciences in Halle with Leopoldina Talk contributing to the theme of the Year of Science 2011 “Research into our Health”
Prof. Dr. Jörg Hacker ML, President of the Leopoldina

Symposia

12 to 14 April, Würzburg
FEMS-Symposium “Emerging topics of microbial pathogenesis”
Prof. Dr. Jörg Hacker ML, Halle, Prof. Dr. Thomas Rudel, Würzburg, Prof. Dr. Matthias Frosch, Würzburg, Prof. Dr. Jörg Vogel, Würzburg, Prof. Dr. Eliora Z. Ron and Prof. Dr. Yair Aharonowitz, Tel Aviv/Israel

20 to 22 June, Weißenburg
Symposium “Epigenetics and the control of gene expression”
Prof. Dr. Walter Doerfler ML, Prof. Dr. Bernhard Fleckenstein ML, Prof. Dr. Ulf Pettersson

24 to 26 July, Tübingen
Symposium “Regenerative Medicine”
Prof. Dr. Hans-Peter Zoller ML, Prof. Dr. Johannes Schubert ML, Prof. Dr. Gernot Duncker ML

18 to 21 September, Würzburg
Symposium “Translational Research in neuro-psychiatric disorders”
Prof. Dr. Michael Frotscher ML, Prof. Dr. Peter Riederer ML

23 to 25 September, Halle
Leopoldina Annual Assembly “What is life?”
Prof. Dr. Jörg Hacker ML, President of the Leopoldina, Prof. Dr. Michael Hecker, Greifswald

25 to 26 November, Berlin
Symposium “Innovative therapies in palliative medicine”
Prof. Dr. Peter Scriba ML, Prof. Dr. Monika Führer

(as of 28 February 2011)
International Issues

The EASAC office in Brussels has been in existence for one year

The independent scientific expertise of the National Academies is to be made accessible for EU institutions

Even though the EASAC, a federation of National Academies of the European Union (EU), has been around for ten years, it took nine years before an EASAC office was opened in Brussels. Since March 2010, a point of contact for the EASAC has been located at the Royal Academies for Science and the Arts of Belgium which has been busy throughout the past twelve months.

Strengths lie in EU consensus

The tasks of the EASAC office in Brussels are derived from the EASAC’s general goals. EASAC wants to make the excellent and independent scientific expertise of the EU’s National Academies available to institutions in Brussels in order to enable political decisions. The specific strength of the EASAC is that all of its reports and statements are passed by consensus. Thus, for political negotiations still often defined by national interests, there is an EU-wide scientific consensus on certain issues.

Three subject areas

Every year, the EASAC sets up new workgroups in the areas of energy, life sciences and the environment. The main task of the Brussels office is to establish contact with the groups and points of contact of the EU institutions for whom the EASAC’s work is of relevance. However it’s not just a one way street: Not only are the results of the EASAC conveyed to these contacts, the questions of EU politicians are taken up as early as possible and forwarded to the active workgroups. This ensures that the EASAC reports tackle those issues that are important for the political decision-making process and make them as beneficial for the EU institutions as possible. In addition to its contacts with the institutions of the “EU pillars” Parliament, Commission and Council of Ministers, the EASAC office in Brussels also endeavors to carry out a lively exchange with the two official scientific advisory institutions of the Parliament and Commission: the Scientific Technology Options Assessment (STOA) and the Joint Research Council (JRC). One of the EASAC’s current workgroups on the topic of “Impact of Nanomaterials on Human Health” is actually working together with the JRC and will present its report this summer.

Anniversary in November

The EASAC’s Brussels office has become an increasingly important location for political briefings and workgroup meetings in past months. The neo-classical palace of the Belgian academies in the centre of Brussels provides a prestigious setting for such meetings. The celebration to mark the 10th anniversary of the EASAC in November 2011 is to be held there as well.

FEAM: Mental health has been neglected

The topic of mental disease has been neglected by EU politicians. This was the conclusion of a statement made by the Federation of the European Academies of Medicine (FEAM) – a federation of medical academies, including the Leopoldina, from 14 European countries. The current situation in psychiatry is inhibited by an insufficient biological understanding of mental disorders, a lack of recognition, a lack of effective therapies, stigmatization and poor access to healthcare. The report in English entitled “FEAM Statement on Mental Health Policy Issues” is based on the discussion of this critical topic at a FEAM meeting in Prague in 2009. A major component are the recommendations resulting from this meeting made to decision-makers in the European Union and European countries who are aiming for an uniform policy in the area of mental health. On the one hand, there is to be a better understanding of psychosocial and biological factors of mental disorders. On the other hand, new scientific findings need to be used in such a way that diagnosis and therapy can be designed more effectively. It is also important to optimize proven strategies within the healthcare services. Linking research with clinical application particularly demands a higher investment in numerous fields of research and in the supporting infrastructure. More attempts must be made to find and implement public-private partnerships.

(csd)
Medicine focuses on the most recent scientific findings and techniques while at the same time it is a practice deeply interwoven in the everyday live of people.

Thus medicine can serve as a medium that mirrors on one hand, complex scientific, technical as well as economic processes and on the other hand, adaptation to these social processes in the everyday lives of people. From the perspective of globalization, it is the aim of this project to explore and create knowledge to understand current issues of globalization by examining processes of modernization through the focus of medicine.

This specific approach promises valuable insights when processes of globalization and modernization are examined in different countries, regions, institutions or disciplines. For the purpose of comparison, the regions of Europe and East Asia will be selected. However, historical comparison is not the research goal in itself but only a heuristic instrument. Germany, Japan and China will be at the centre of attention because modernization in these three countries occurred in different periods while being in a key relationship of interdependence when transferring modern medicine from Europe to East Asia and within Asia.

With the selection of these two regions and three countries, the diverse exchange and transaction of ideas between Europe and Asia in different areas of knowledge and activity will be the focus of investigations. In terms of historical periods, investigations will concentrate on the time of the introduction of modern scientific medicine in the late 19th and early 20th centuries.

The concept of ‘multiple modernities’ by Shmuel N. Eisenstadt is the theoretical approach of this project. It allows to explain processes of modernization by looking at contingent historical events and thereby to capture the environment and the intentions of historical actors - it is, as Wolfgang Knöbl says - „contingency sensitive“. The idealtypischen constructs of certain ‘levels’ or ‘zones’ of modernity proposed by Eisenstadt are far from real social configurations or even historical detail. However, this project will contribute right here by studying historical transfer processes.

Scientific organization:
Prof. Dr. Heiner Fangerau, Ulm
Prof. Dr. Alfons Labisch ML, Düsseldorf
Prof. Dr. Christian Oberländer, Halle (Saale)

From 21 to 22 March a joint conference of the Ghana Academy of Art and Sciences and the German National Academy of Sciences Leopoldina will take place in Kumasi/Ghana.

Members of both academies as well as representatives of the Deutsche Forschungsgemeinschaft (DFG) and other personalities of research, medicine and politics will discuss matters of tropical infectious diseases as well as possibilities and chances of a North-South-Cooperation in Health Research.

Malaria and AIDS will be the topics discussed on the first day of the conference. Malaria, the WHO states, endangers half of world’s population to become newly infected. Every year hundreds of millions of people are infected with Malaria. If there is no medical treatment available about a million people die every year from the Malaria-infection – half of them dying are babies and infants up to the age of 5.

Amongst others Prof. Dr. Horstmann and Dr. Thomas Jacobs of the Bernhard Nocht Institute for Tropical Medicine Hamburg will talk about this topic, supported by fellow researchers and colleagues from Germany and Ghana.

Announced aspects on the symposium’s schedule for the second day are Mycobacteria, which cause for example tuberculosis or leprosy, Chlamydia as well as Helminth, Bacterial and Viral infections.

The scientific organization of the German-Ghanaian joint symposium lies in the hands of Prof. Dr. Bernhard Fleischer ML, Vice-Chair of the Board of Directors of the Bernhard Nocht Institute for Tropical Medicine Hamburg.
FEMS-Leopoldina-Symposium: “Emerging Topics in Microbial Pathogenesis”, 12 to 14 April 2011, Beginning of the Event on 12 April, 8.00 a.m., Gartenpavillon, Juliusspital Würzburg, Klinikstrasse 1, 97070 Würzburg/Germany

The Theodor-Boveri-Institute of Bioscience, part of the Julius-Maximilians-University Würzburg announces a symposium, which is jointly sponsored by the Federation of European Microbiological Societies (FEMS) and the German National Academy of Sciences Leopoldina.

The focus of the symposium will be on cutting-edge themes in molecular and cellular pathogenesis as well as infection and immunity. These will include presentations on the application of newest technologies in infection research like intra-vital microscopy and next generation sequencing. But also most recent advances in translational research will be presented during the conference.

More than twenty-five internationally leading researchers have been invited as speakers. There will also be significant time during the conference for poster sessions and short talks to be presented by young Scientists.

Scientific Organization:
Prof. Dr. Jörg Hacker ML, Halle
Prof. Dr. Thomas Rudel, Würzburg,
Prof. Dr. Matthias Frosch, Würzburg,
Prof. Dr. Jörg Vogel, Würzburg,
Prof. Dr. Eliora Z. Ron, Tel Aviv/Israel,
Prof. Dr. Yair Aharonowitz, Tel Aviv/Israel

Leopoldina’s 2011 Annual Assembly: “What is life?”, 23 to 25 September 2011, 9.00 a.m., K & K Kongress- und Kulturzentrum Halle, Franckestrasse 1, 06110 Halle (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 Annual 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 Annual Assembly.

Scientific organization:
Prof. Dr. Jörg Hacker ML, Halle (Saale)
Prof. Dr. Michael Hecker ML, Greifswald

The complete programme of these years Annual Assembly will be published in the upcoming newsletter.
People

2011 Leibniz Prizes

Two top female researchers will receive the Leibniz Prize, the most prestigious research prize in Germany. Prof. Dr. Ulla Bonas ML and Prof. Dr. Anja Feldmann ML, both members of the Leopoldina, will be presented the awards of the Deutsche Forschungsgemeinschaft (DFG) on 16 March in Berlin. Each prize is worth 2.5 million euros:

Ulla Bonas from the University of Halle-Wittenberg studies the interaction between pathogenic bacteria and plants affected by the plant pathogen Xanthomonas campestris pv. vesicatoria (Xcv). This pathogen particularly affects pepper and tomato plants. Her research is closely linked to an effector protein of Xcv, the AvrBs3 gene. Bonas was able to clone, characterize and explain the functions of this gene. On the one hand AvrBs3 contributes to cell growth which encourages the plant to supply the avirulence gene with nutrients. On the other hand it releases a suicide program in resistant plants through a bond to the promoter of the Bs3-resistance gene which results in cell death. Her work is of fundamental importance for understanding plant-microbe interactions. It is extremely important for biotechnology as it reveals ways to selectively switch genes on and off. Bonas has been a member of the Leopoldina’s Microbiology and Immunology Section since 2008.

Anja Feldmann of the Technische Universität Berlin, is one of the top international researchers in the field of the Internet. Feldmann has influenced the development of the Internet beyond basic research, particularly with her work on the analysis and modeling of Internet traffic and Internet routing. Her studies on the limits and possibilities of web proxy caching have influenced the business decisions of countless Internet services. In more recent work, Anja Feldmann has studied systems that defend against attack in high speed networks. She has also looked at new forms of application and use such as chats, Web 2.0 and social networks with the aim of incorporating her findings into improving the architecture of the Internet. Feldmann has been a member of the Leopoldina’s Informatics Section since 2009.

Deceased members

Prof. Dr. Jacques Bernheim ML,
28 July 1924 - 2008 Geneva/Switzerland
Pathology and Forensic Medicine Section
He became a member of the Leopoldina in 1970 due to his innovative work in the area of forensic anthropology.

Prof. Dr. Michel Jaubert de Beaujeu ML,
5 June 1917 – 1 Feb 2009
Surgery, Orthopedics and Anesthesiology Section
He was admitted as a member of the Leopoldina in 1977 for his work in neonatal and pediatric surgery, particularly in the area of thoracic surgery.

Prof. Dr. Wolf D. Keidel ML,
14 Dec 1917 – 17 Jan 2011 Bayreuth/Germany
Physiology and Pharmacology/Toxicology Section
He became a member of the Leopoldina in 1970 for his pioneering work in sensory physiology – particularly hearing and the sense of vibration on the skin. He is considered to be the first to apply the terms and investigation methods of information theory and cybernetic to sensory physiology.

Prof. Günter Tembrock ML,
7 June 1918 – 26 Jan 2011 Berlin/Germany
Organismic and Evolutionary Biology Section
He became of member of the Leopoldina in 1965 for his research work into behavioral biology among other things. His work led to the establishment of a “Research facility for animal psychology” at Humboldt University’s Zoological Institute in Berlin. He coined the term “bio-acoustics” and is the founder of the largest archive of animal sounds in Europe.
Prof. Dr. Valeria A. Troitskaya ML, 15 Nov 1917 – 22 Jan 2010 Melbourne/Australia
Earth Sciences Section
She became a member of the Leopoldina in 1970 for her work in studying geomagnetism, in particular pulsations.

Prof. Dr. Bernhard Witkop ML
9 May 1917 – 22 Nov 2010 Chevy Chase, MD/USA
Chemistry Section
He was chosen to become a member of the Leopoldina in 1972 for his wide-ranging work in the areas of indole series, peptides, and catecholamines among other things, and for his research into amphibian poisons.

Newly elected members of the Academy, 24 November 2010

Hans-Joachim Gehrke, Berlin, Professor of Ancient History at the University of Freiburg i. Br. and President of the German Archeological Institute in Berlin (Cultural Sciences Section)

Dieter Langewiesche, Tübingen, Professor Emeritus of Medieval and Modern History in the History Department of the Eberhard Karls University in Tübingen (Cultural Sciences Section)

Reinhard Merkel, Hamburg, Professor of Criminal Law at the Faculty of Law of the University of Hamburg (Epistemology Section)

Christof Rapp, Munich, Professor of Ancient Philosophy and Rhetoric and Director of the “Center for Advanced Studies” at the Ludwig Maximilians University in Munich (Cultural Sciences Section)

Jochen Taupitz, Mannheim, Professor of Civil Law, Civil Procedure Law, Private International Law and Comparative Law at the University of Mannheim (Epistemology Section)

David E. Wellbery, Chicago/USA, LeRoy T. and Margaret Deffenbaugh Carlson University Professor and Director of the Center for Interdisciplinary Research on German Literature and Culture, University of Chicago (Cultural Sciences Section)
Inside the Leopoldina

Anniversaries of Leopoldina members in 2011

The following is a list of members of the Academy celebrating jubilee birthdays starting from 65 onwards. In the future this list will be published at the end of each year for the year to come.

65th anniversary:
Hans-Jörg Rheinberger, Berlin/Germany, 12 Jan
Christoph Reiners, Würzburg/Germany, 28 Jan
Bernd Herrmann, Göttingen/Germany, 3 Feb
Hermann Koepsell, Würzburg/Germany, 23 Feb
Siegfried Blechert, Berlin/Germany, 1 Mar
Felix Unger, Salzburg/Austria, 2 Mar
Lis Brack-Bernsen, Pentling/Germany, 2 Mar
Jef Vandenbergh, Amsterdam/Netherlands, 5 Mar
Dieter Enders, Aachen/Germany, 17 Mar
Hans Lutz, Zurich/Switzerland, 20 Mar
Peter H. Krammer, Heidelberg/Germany, 2 Apr
Ellen Fanning, Nashville/TN/USA, 10 Apr
Johannes Schubert, Halle (Saale)/Germany, 5 Apr
Klaus Diedrich, Lübeck/Germany, 28 Apr
Ulrich Schubert, Vienna/Austria, 26 May
James Robert Brown, London/Ontario/Canada, 30 May
Eva-Bettina Bröcker, Würzburg/Germany, 1 June
Walter Michaeli, Aachen/Germany, 4 June
Didier Astruc, Talence/France, 9 June
Urs Boschung, Bern/Switzerland, 21 June
Wilhelm Barthlott, Bonn/Germany, 22 June
Kyriacos C. Nicolaou, La Jolla, CA/USA, 5 July
Hans Bertram, Berlin/Germany, 8 July
Michael Hecker, Greifswald/Germany, 9 July
Thomas Börner, Berlin/Germany, 11 July
Karsten Fehlhaber, Leipzig/Germany, 13 July
Hans-Detlev Saeger, Dresden/Germany, 20 July
Paul Hoyningen-Huene, Zurich/Switzerland, 31 July
Klaus Höfken, Jena/Germany, 5 Aug
Heinz Schott, Bonn/Germany, 8 Aug
Bernard F. Schutz, Potsdam/Germany, 11 Aug
Grigory E. Volovik, Helsinki/Finland, 7 Sept
Joachim Messing, Piscataway/NJ/USA, 10 Sept
Pekka Juhani Saukko, Turku/Finland, 12 Oct
Gottfried Schmalz, Regensburg/Germany, 13 Oct
Ekhard K.H.Salje, Cambridge/UK, 20 Oct
Alfons Labisch, Düsseldorf/Germany, 20 Oct
Rolf Kreienberg, Ulm, 27 Oct
Bernhard Kräutler, Innsbruck/Austria, 2 Nov
Walter Bär, Zurich/Switzerland, 7 Nov
Dieter Birnbacher, Düsseldorf/Germany, 21 Nov
Wolfgang Baumeister, Martinsried/Germany, 22 Nov
Reinhard Graf, Stolzalpe/Austria, 25 Nov

70th anniversary
Wolf Lepenies, Berlin/Germany, 11 Jan
Uzy Smilansky, Rehovot/Israel, 24 Jan
Irene Schulz-Hofer, Konstanz/Germany, 25 Jan
Ekkehart Tillmanns, Vienna/Austria, 29 Jan
Klaus Peter Sauer, Bonn/Germany, 2 Feb
Bodo Christ, Freiburg i.Br./Germany, 4 Feb
Günter Burg, Maur/Switzerland, 5 Feb
Bernard C. Rossier, Lausanne/Switzerland, 24 Feb
Peter Schuster, Vienna/Austria, 7 Mar
Fritz A. Henn, Upton, NY/USA, 26 Mar
Detlev Ganten, Berlin/Germany, 28 Mar
Martin Röllinghoff, Erlangen/Germany, 1 Apr
Jörn Thiede, Copenhagen/Denmark, 14 Apr
Jürgen Kocka, Berlin/Germany, 19 Apr
Dietrich von Engelhard, Lübeck/Germany, 5 Apr
Friedrich A. Seifert, Berlin/Germany, 8 May
Karl Sperling, Berlin/Germany, 11 May
Konrad Beyreuther, Heidelberg/Germany, 14 May
Lutz Nover, Oberursel-Weisskirchen/Germany, 16 May
Michel Eichelbaum, Stuttgart/Germany, 19 May
Hans Föllmer, Berlin/Germany, 20 May
Hermann Wagner, Munich/Germany, 20 May
Ernst Th. Rietschel, Berlin/Germany, 21 May
Uta Frith, Harrow/UK, 25 May
Heinz Saedler, Cologne/Germany, 3 June
Martyn M. Caldwell, Washington, DC/USA, 28 June
Karl O. Stetter, Regensburg/Germany, 16 July
Michael Stolleis, Kronberg/Germany, 20 July
D. Yves von Cramon, Munich, 21 July
Jürgen Baumert, Berlin/Germany, 29 July
Jules A. Hoffmann, Strasbourg/France, 26 July
Jules A. Hoffmann, Strasbourg, 2 Aug
István Klinghammer, Budapest/Hungary, 10 Aug
Gerd Assmann, Münster/Germany, 11 Aug
Onora O'Neill, London/UK, 23 Aug
Jürgen Knop, Rad Kreuznach/Germany, 21 Sept
Rolf Kinne, Dortmund/Germany, 27 Sept
Theodor W. Hänsch, Munich/Germany, 30 Oct
Jürgen Baumert, Berlin/Germany, 3 Nov
François Mathey, Singapore, 4 Nov
Pierre Albrecht, Strasbourg/France, 4 Nov
Hannes Flühler, Zurich/Switzerland, 4 Dec
Rüdiger Wolfrum, Heidelberg/Germany, 13 Dec
Michel Che, Paris/France, 29 Dec
75th anniversary:
Günter Schultz, Berlin/Germany, 23 Jan
Samuel C. C. Ting, Geneva/Switzerland, 27 Jan
Karlheinz Bauch, Chemnitz/Germany, 19 Feb
Harald zur Hausen, Heidelberg/Germany, 11 Mar
Jean-Pierre Changeux, Paris/France, 6 Apr
Peter Fulde, Dresden/Germany, 6 Apr
Enno Christophers, Kiel/Germany, 7 Apr
Detlef Petzoldt, Heidelberg/Germany, 21 Apr
Fritz Melchers, Dresden/Germany, 27 Apr
Volker Strassen, Dresden/Germany, 29 Apr
Dankwart Stillier, Halle (Saale)/Germany, 18 May
Günter Blobel, New York, NY/USA, 21 May
Paul Kleihues, Zurich/Switzerland, 21 May
Eckard Wimmer, East Setauket, NY/USA, 22 May
Per Brandtzaeg, Oslo/Norway, 9 June
Ulrich Pfeifer, Bonn/Germany, 11 June
Rudolf Klöti, Zurich/Switzerland, 3 June
Jürgen W. Spranger, Sinzheim/Germany, 1 Jan
Rolf Klötzer, Borsdorf/Germany, 11 Jan
Jacques Friedel, Paris/France, 11 Feb
Albert Herz, Munich/Germany, 5 June
Helmut Risse, Wernigerode/Germany, 12 June

80th anniversary:
Jürgen W. Spranger, Sinzheim/Germany, 1 Jan
Rolf Klötzer, Borsdorf/Germany, 11 Jan
Fritz Peter Schäfer, Göttingen/Germany, 15 Jan
Norbert Hilschmann, Göttingen/Germany, 8 Feb
Gisbert Frhr. zu Putlitz, Heidelberg/Germany, 14 Feb
Hubert E. Schroeder, Opfikon/Switzerland, 17 Feb
Elisabeth Ott, Saguaro/USA, 20 Feb
Eberhard Schnepf, Heidelberg/Germany, 4 Apr
Kurt Schaffner, Heidelberg/Germany, 9 Apr
Hans-Joachim Queisser, Stuttgart/Germany, 30 Apr
Malte E. Wigand, Nuremberg/Germany, 12 May
Meinhard Classen, Munich, 12 Aug
Klaus Rajewsky, Boston, MA/USA, 12 Nov

90th anniversary:
Jürgen W. Spranger, Sinzheim/Germany, 1 Jan
Jacques Friedel, Paris/France, 11 Feb
Theodor O. Diener, Beltsville, MD/USA, 28 Feb
Siegfried Hünig, Würzburg/Germany, 18 Apr
Heinz Fortak, Berlin/Germany, 11 Aug
Klaus Dransfeld, Ermatingen/Switzerland, 12 Aug
Gerhard Seifert, Hamburg/Germany, 9 Sept
Albert Herz, Munich/Germany, 5 June
Helmut Risse, Wernigerode/Germany, 12 June

91st anniversary:
Osamu Hayaishi, Osaka/Japan, 8 Jan
Wilhelm Oelßner, Leipzig/Germany, 3 Mar
Nicolaas Bloembergen, Tucson, AZ/USA, 11 Mar
Werner Janzarik, Heidelberg/Germany, 3 June
Rolf Huisgen, Munich/Germany, 13 June
Eduard Gitsch, Vienna/Austria, 3 Aug
Stefania Jablonska, Warsaw/Poland, 7 Sept
Leopold G. Koss, New York, NY/USA, 2 Oct
Saburo Nagakura, Kawasaki-shi/Japan, 3 Oct
Hugo L. Obwegeser, Schwerzenbach/Switzerland, 21 Oct
Otto Kandler, Munich, 23 Oct
Otto Mayrhofer, Vienna/Austria, 2 Nov
Egbert Schmiedt, Grünwald/Germany, 20 Nov
Paul Stevanovits, Budapest/Hungary, 24 Nov
Hans Haller, Dresden/Germany, 17 Dec
Yves Laporte, Paris/France, 17 Dec
Heinrich Köle, Graz/Austria, 24 Dec

92nd anniversary:
G. Roberto Burgio, Pavia/Italy, 30 Apr
Lubos Perek, Prague/Czech Republic, 26 July
Hans-Jürgen Eichhorn, Berlin/Germany, 13 Sept
Kurt Unger, Quedlinburg/Germany, 20 Sept
Wilhelm Künzer, Freiburg i.Br./Germany, 3 Nov
Simon N. Checinasvili, Tbilisi/Georgia, 26 Nov
Hans Kuhn, Troistorrents/Switzerland, 5 Dec

93rd anniversary:
Heinz Kliwe, Greifswald/Germany, 15 Jan
Maurice E. Müller, Bern/Switzerland, 28 Mar
Harold Henkes, Voorst/Netherlands, 18 Apr
Eugen Seibold, Freiburg i.Br./Germany, 11 May
Ole Wasz-Höckert, Fuengirola/Spain, 28 Aug
Jens Christian Skou, Risskov/Denmark, 8 Oct
Leonid S. Rosenstrauch-Ross, Stamford, CT/USA, 8 Dec
Siegfried Herzog, Greiz/Germany, 10 Dec

94th anniversary:
Fritz Kümmerle, Mainz/Germany, 14 Feb
Hilgard O’Reilly Sternberg, Berkeley, CA/USA, 5 July
Christian Duve, Nethen/Belgium, 2 Oct
Walter H. Munk, La Jolla, CA/USA, 19 Oct
Sir Andrew F. Huxley, Cambridge/UK, 22 Nov

95th anniversary:
Heinz Jagodzinski, Munich/Germany, 20 Apr
Hans-Werner Altmann, Würzburg/Germany, 7 June
Paul Schölmerich, Mainz/Germany, 27 June
Niilo Hallman, Helsinki/Finland, 15 July
Hisao Takayasu, Tokio/Japan, 26 Nov

96th anniversary:
Karl Maramorosch, New Brunswick, NJ/USA, 16 Jan
Sakari Timonen, Helsinki/Finland, 17 Mar
Shoji Shibata, Tokio/Japan, 23 Oct
Friedrich-Ernst Stieve, Munich/Germany, 5 Nov

97th anniversary:
Klaus Betke, Lochham/Germany, 30 Oct

98th anniversary:
Britton Chance, Philadelphia, PA/USA, 24 July

99th anniversary:
Vasilij V. Kuprijanov, Moscow/Russia, 1 June