



Leopoldina
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Leopoldina news

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Deutsche Akademie der Naturforscher Leopoldina –
German National Academy Of Sciences

Halle (Saale), 5 June 2014

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Editorial

Dear Members
and friends of the Leopoldina,



universities, research institutes and companies all over the world are competing for the most talented young researchers.

When looking for a position, these up-and-coming scientists are primarily concerned with what kind of research conditions and equipment are available, and whether renowned researchers work at the institution in question. But career prospects are becoming an increasingly important consideration, too.

In future, universities must offer more reliable career-planning possibilities if they wish to harvest the best minds. Young researchers need the kind of working conditions that allow them to make the most of their abilities. They are quite rightly asking for clearly defined options for shaping their careers within the scientific system in Germany.

The Leopoldina's Fellowship Programme is committed to helping these young people further their careers. The programme offers a Postdoc Scholarship to outstanding scientists from Germany, Austria and Switzerland, usually with the goal of allowing them to spend time researching abroad. In this issue of Leopoldina news, we learn about one scholarship holder, Jasper Hasenkamp, and his work at New York University's Center for Cosmology and Particle Physics. But the Leopoldina Fellowship Programme does not only send young scientists abroad; it also ensures they can come back and integrate fully in the scientific system in Germany. Scholarship holders can apply for a Returning Fellow Scholarship. This was designed to encourage talented individuals to continue their careers back home in Germany by offering them an easier route back into the system. The universities also benefit from this scheme as it helps them attract the best young talent. We wish you a thought-provoking read!

Jörg Hacker



The Internet of Things allows everyday objects to communicate with each other and with their users.

Photo: Fotolia - MimiPotter

How the Internet of Things affects our lives

The Leopoldina invites visitors to the Long Night of Sciences

The Leopoldina Night has become a firm fixture on the event calendar in Halle, and this year once again, thousands of visitors are expected to flock to the Leopoldina headquarters on Friday 4 July. The aim is to bring science alive for citizens, to encourage them to discuss current science-related topics, and to give them the opportunity to ask questions. Leopoldina President Prof. Jörg Hacker ML will open the event at 5 p.m.

For the first time, a “night-time science café” will also be taking place at this year's Leopoldina Night. It starts at 9 p.m. in the Auditorium. The discussion event, organised in collaboration with Wissenschaft im Dialog (see additional information), will allow visitors to talk to one another and with experts in a relaxed café atmosphere. The topic under discussion will be the “Internet of Things” – i.e. the connecting up of everyday devices with the internet and users. The Internet of Things should make our lives much easier. For example, in a “smart home”, heating thermostats can learn over time what ambient temper-

ature the inhabitants prefer; the fridge can automatically decide what groceries need to be bought; and the washing machine will run when electricity is cheapest. But this “networked living” can also have its downsides, such as technical problems, hacker attacks, or undesired data collection.

Experts in the field, Prof. Anja Feldmann ML of TU Berlin and science journalist Volker Sollarz, will give the keynotes. Afterwards, visitors will have the opportunity to discuss the issues involved, first in groups around small café-style tables and then all together. This night-time café is part of the Leopoldina's contribution to Science Year 2014, which focuses on the “digital society”.

The Leopoldina has also invited puppet theatre „Die Umweltbühne“ to perform a piece on this topic. At 5:15 p.m., 6:30 p.m. and 7:45 p.m. in the Auditorium, the puppet company will premiere its tale of Pixel, who is fascinated by the networked world. Not even his best friend Pepa can entice him away from his computer. The play is suitable for children

aged four and above.

Presenting an area of research in an entertaining, informative and understandable way in just ten minutes will be a challenge taken up by three young scientists during the Science Slam at this year's Leopoldina Night (7 p.m., banquet room). The scientists who will be attempting to win over the audience this year are Dr Felix Büsching, a computer scientist at Technische Universität Braunschweig, Thien Ngoc Tran Nguyen, a medical student at the University of Tübingen, and Dr Christian Stern, an immunologist at the Helmholtz Centre for Infection Research in Braunschweig.

At 11 p.m. in the banquet room, Leopoldina Secretary-General Prof. Jutta Schnitzer-Ungeweg will inform visitors about the work of the Leopoldina. Her

speech will focus on the Leopoldina's dual role as a scholarly society and a provider of policy advice. The exhibition MenschMikrobe (HumanMicrobe), presented by the Robert Koch Institute and the German Research Foundation, is open throughout

the night, offering entertaining insights into microorganisms. (jk)

■ FURTHER INFORMATION IS AVAILABLE HERE.

PARTNERSHIP WITH SCIENCE IN DIALOGUE

The Leopoldina has signed an agreement to collaborate more closely with Science in Dialogue (Wissenschaft im Dialog, WiD), an initiative of German scientists dedicated to promoting exchange on research topics and findings within Germany. This partnership with the Leopoldina

focuses primarily on encouraging dialogue with ordinary citizens about current scientific topics, with the goal of promoting debate on controversial social issues such as how to deal with demographic change or the consequences of our increasingly digitised society. (jk)

■ FOR FURTHER INFORMATION, PLEASE VISIT: www.w-i-d.de

Resistance threatens progress

European academies host conference in Herrenhausen

From 6 to 8 March 2014, the Leopoldina and the Royal Netherlands Academy of Arts and Sciences (KNAW), in collaboration with the European Academies Science Advisory Council (EASAC), hosted a specialist conference entitled "Antimicrobial drug discovery, greater steps ahead". The event was held at the Schloss Herrenhausen conference centre with the support of the Volkswagen Foundation.

British Chief Medical Officer Dame Sally Davies and Nobel laureate Prof. Ada Yonath ML were among the participants, alongside other leading European and international researchers.

Leopoldina President Prof. Jörg Hacker ML and former President Prof. Volker ter Meulen ML represented the Leopoldina at the event.

The goal of the conference was to develop joint science-based recommendations for policymakers and society, for EASAC to communicate at EU level, for the Leopoldina to disseminate in Germany, and for KNAW to share in the Netherlands. The discussions centred around the threat to decades of progress in the field of infectious diseases resulting from antimicrobial resistance and a lack of innovation in discovering and researching new antimicrobial agents. (csd)



The Leopoldina and EASAC welcome participants to the "Antimicrobial drug discovery, greater steps ahead" conference, held at the Schloss Herrenhausen conference centre in Hannover with the support of the Volkswagen Foundation.

Photo: Volkswagen Foundation

Round table Research on anti- biotics is proceeding

Workshops in Hamburg and Halle (Saale)

Antibiotic resistance and a lack of new antibiotics are among the most pressing problems facing modern medicine. In 2013, the Academy of Sciences in Hamburg and the Leopoldina published the statement "Antibiotic Research: Problems and Perspectives" with the goal of tackling this important issue.

The subsequent round table on antibiotic research jointly initiated by the two academies has now been followed by two workshops. On 14 March, experts in human and veterinary medicine met in Hamburg to discuss whether and to what extent the use of antibiotics in veterinary medicine contributes to the prevalence of antibiotic resistance in human medicine. There was a broad consensus in favour of developing joint strategies.

On 15 April, representatives of science, the pharmaceutical industry and politics gathered in Halle in collaboration with the consortium InfectControl 2020 to explore the reasons behind the lack of development of new anti-infectives. The results of both workshops will be included in future round-table discussions. (kh/es)

Taking on the universe in the Big Apple

Leopoldina scholarship holder Jasper Hasenkamp is investigating the origins of the universe

What is the universe made of? New York is one of the best places in the world to try and find out. This is because the city is home to the Center for Cosmology and Particle Physics (CCPP), one of the leading research institutes looking into this question. Physicist Jasper Hasenkamp (30) is conducting research at CCPP on a Postdoc Scholarship from the Leopoldina Fellowship Programme. Ines Godazgar gives us insight into the Fellowship Programme and Hasenkamp's research.

Jasper Hasenkamp only turned 30 a few weeks ago. Although he was about 8,000 km away from his home town of Hamburg, enough people came over to celebrate the occasion: "When you live in New York, you're never short of visitors," says the young north German, who has been working at New York University for almost a year. He will conduct research as a postdoc at CCPP for two years in total. CCPP is a world-leading research centre in the field of particle cosmology, and Hasenkamp specifically sought out a chance to work there. It was while conducting research at Harvard on a three-month scholarship back in 2011 that he was first invited to the institute to give a talk. He immediately clicked with Professor Neal Weiner, the head of the working group that he is now involved with – another reason why Hasenkamp is pleased to have made it into this exciting field for a longer period of time.

Cosmology, the core research area of CCPP, and the fundamental questions posed by this highly theoretical area of physics have always held a special appeal for Hasenkamp. What is the universe made of? What is dark energy? What is dark matter? "These are exciting questions, and I've been fascinated with investigating them ever since my undergraduate days," says Hasenkamp. That is why he chose to do a doctorate in particle cosmology back in Hamburg.

Hasenkamp's research period at New York University would not have been possible without the Leopoldina Fellowship Programme. "Without the programme, I wouldn't have been able to afford a stay here," says Hasenkamp. As well as provi-



Dark energy is one of Jasper Hasenkamp's main areas of research. He has been working in New York for a year on a Leopoldina scholarship.

Photos: Leopoldina, Fotolia - agsandrew

ding an excellent working environment, the programme has ensured him a pleasant home environment here in the Big Apple. The university offered him an apartment right on the university campus in Greenwich Village – a real perk, not just because it is anything but easy to find a good apartment in New York, but also because this particular one is right in the middle of a lively and appealing neighbourhood.

„The Leopoldina programme is bringing me closer to my goal“

Hasenkamp does not yet know what he will do after his stay in New York. But with top grades in both his physics degree and his doctorate, and now with this research period under his belt, he will be on the right track. For the next step in his career, he would like to get a permanent research position in Germany, but he knows that competition is fierce. "That's why I'm happy to have come across the Leopoldina Fellowship Programme. It's bringing me that bit closer to my goal."

Some former Leopoldina scholarship holders have achieved this goal. The numbers are impressive: Since the Postdoc Scholarships were launched in 1997, the

programme has supported almost 300 researchers, and although not all have maintained contact with their host organisations, the records show that more than 30 have now been given a professorship or a permanent research position.

"The programme's scholarships are now in great demand," says Dr Andreas Clausung, who coordinates the programme at the Leopoldina. Both the quantity and the quality of applications are consistently high – showing, he says, that the scholarships have gained a reputation as a good source of funding for outstanding postdoctoral researchers. Each year, up to 20 young postdocs are accepted into the programme from a vast number of applicants. Most of them are still using their scholarship to fund a research period in the US, with the UK also being a very popular choice.

The past ten years in particular have seen a rise in the number of former scholarship holders obtaining a post as a junior professor or even a permanent professorship. "This means that the academy's goal of using the scholarship programme to foster the next generation of academics in Germany is becoming more and more a reality," says Clausung.

New trends in science communication

For the second year running, science communication professionals convened at Gut Siggen, a manor house in Schleswig-Holstein, to discuss trends in the field. In an interview with Caroline Wichmann, the event's initiators Dr Elisabeth Hoffmann, Chairwoman of the Bundesverband Hochschulkommunikation and Markus Weisskopf, Director of the Science in Dialogue initiative (WiD), discuss the insights that were gained.

Who or what is the "Siggenger Kreis"?

Weisskopf: The Siggenger Kreis is an ideas workshop that brings together about 25 science communicators, science journalists, research communications officers from industry, ministry representatives and freelancers. The Siggenger Kreis met for the first time in 2013 at Gut Siggen manor house in Schleswig-Holstein, which is where the name comes from. This was after Science in Dialogue (WiD) and Bundesverband Hochschulkommunikation (the federal association of communication in higher education) won an opportunity offered by the Alfred Toepfer Foundation and Die Zeit newspaper to hold "Eine Woche ZEIT" (One week of time/ZEIT) at Gut Siggen – the start of what is hopefully now a regular series of conferences.

Hoffmann: Through sharing their own perspectives, the participants give diverse insights into the topic of science communication that allow them to generate a collective view. In Siggen they have a number of days to share their thoughts, exchange their experiences and predictions, and really take a look forward into the future.

And this year they met again?

Weisskopf: Yes, for the second time. Last year, discussions were considerably freer, while this year they were more concrete, resulting in our call for action, to which we have added quality criteria for good science communication. This was put online a few days ago.

The Siggenger Kreis wants to effect change. Why is this necessary?

Weisskopf: We are observing new trends in science communication, for example in the digital media, which are transforming science journalism. This is creating new challenges. Do we want to continue to strengthen science journalism



Sharing their thoughts: Press officers, journalists and other professionals discussed the future of science communication at Gut Siggen manor house in Schleswig-Holstein.

Photo: Caroline Wichmann

or do we also need to find different ways of reaching the public in future?

Hoffmann: Society's demands have changed. Society no longer views science as sacrosanct, and people expect to join in discussions and have their say about important technologies and their consequences – not as academics, but as neighbours, consumers or simply concerned observers. At the same time, some members of society have been distancing themselves further and further from science and no longer understand the complex ways in which the issues interrelate. We want to – and need to – use science communication to counteract this and prevent society from developing a distrust of science.

Weisskopf: There is now a great deal of discussion on blogs and social media, and these allow individuals to give direct feedback and sometimes to even contribute directly to what is being written. There are other approaches too, for example the idea of Citizen Science, which involves members of the public contributing to research, making observations themselves, and passing on findings. When it comes to controversial subjects such as fracking,

geothermal energy and synthetic biology, moral and ethical issues can be discussed openly in dialogue with the public. Perhaps in this way the scientific community will be able to overcome the public's qualms.

Dr Hoffmann, as the press officer at the Technische Universität Braunschweig, what changes are you hoping to see in German higher education communication?

Hoffmann: Something I am particularly noticing in university press offices is that workloads are getting more and more demanding and competition is growing ever fiercer. Many of my colleagues are being put under enormous pressure. They are inundated with all sorts of tasks and are also facing very high expectations when it comes to the media presence of their institutions. Trying to meet these expectations puts them at risk of making oversights or of overdoing things. I hope that the Siggen quality criteria will help to put the focus back on important communications standards that our colleagues can use to assist them in their work.

STATEMENT ON SCIENCE COMMUNICATION

"The relationship between science, the public and the media" is the title of the statement being presented by the National Academy of Science and Engineering, the Union of the German Academies of Sciences and the Leopoldina on Tuesday 17

June at the Reinhardstraßen-Höfe in Berlin. The topic will be put under the spotlight in a fishbowl discussion between various experts including Elisabeth Hoffmann and Markus Weisskopf. (cw)

■ FOR FURTHER INFORMATION PLEASE CLICK HERE.



Wildflower meadows: Tropical rainforests are not the only places that are home to undiscovered life forms – researchers in Central Europe are also describing new species.

Photo: Fotolia - rsester

How does science-based policy advice work?

New guidelines published

As Germany's National Academy of Sciences, the Leopoldina has the task of addressing key issues of particular significance for the future of society from a scientific perspective, independently of economic or political interests, and of sharing its findings with policymakers and the public.

How do the Leopoldina working groups function? How does the Leopoldina identify socially relevant topics? Which criteria are used to select members of the working groups? And how is the independence of a working group ensured? These and other questions are answered in the new guidelines for advising policymakers and society that the Leopoldina has now published.

As well as outlining the general principles of advising policymakers and society, the guidelines explain the seven phases in the working group process from the idea to publication and beyond: 1) Idea and Concept, 2) Discussion and Decision to Set Up a Working Group, 3) Detailed Planning, 4) Work Phase, 5) External Reviews, 6) Publication and 7) Follow-up Activities.

The guidelines also present various publication formats. Answers to frequently asked questions about the provision of science-based advice to policymakers and society can be found in the final pages of the guidelines. (kh)

The potential of taxonomy

The Leopoldina presents four new statements

Taxonomy, the science of discovering, describing and classifying life forms, is currently enjoying a technological revolution. The rapid development of Omics methods for sequencing and analysing genetic information, proteins and metabolic products has enormous potential for taxonomic research. However, the advances have also created new structural requirements. This is why the German National Academy of Sciences Leopoldina has compiled a statement on "Integrative taxonomy: Challenges and opportunities for research and society". The paper will be presented to the public on 25 June in Berlin.

The Leopoldina will be publishing three other statements, produced in collaboration with various partners, before the summer break. The paper „The relationship between science, the public and the media“ will be presented on Tuesday, 17 June (see also page 5). The statement on

“Handling security-relevant research findings”, which the Leopoldina produced in collaboration with the German Research Foundation, will be presented on Thursday 26 June in Berlin. It looks at how research findings, which in and of themselves are neutral or useful, could be misused and cause harm if they fell into the wrong hands.

The statement entitled “Neurobiological and psychological factors in socialisation” will be presented to politicians and members of the media on Thursday 3 July. The publication is the result of a collaboration between the Leopoldina, acatech and the Union of the German Academies of Sciences and Humanities. It focuses on the lifelong importance of “successful” early childhood development. (jk)

■ FURTHER INFORMATION IS AVAILABLE HERE.

■ VIEW THE GUIDELINES HERE.

Medical, legal and ethical issues in genetic testing

Leopoldina discussion on reproductive medicine is published

Are we heading towards perfect “rationalisation of reproduction”? Leading experts in reproductive medicine tackled this question during a Leopoldina discussion entitled “Auf dem Weg zur perfekten Rationalisierung der Fortpflanzung” in Halle (Saale) on 16 and 17 February 2013. A report of the lectures and discussions has

now been published. Developments in the field of genetic diagnostics from recent months have been included in the book in order to give an updated picture of the state of research at the time of going to press.

The book was edited by human geneticist Prof. Peter Propping ML and medical historian Prof. Heinz Schott ML. The

lectures and discussions contained in the book address the legal, ethical and social aspects of prenatal and pre-conception genetic testing, and explore the issue's historical context. (jk)

■ A SUMMARY OF THE REPORT IS AVAILABLE HERE.

Stardust, recycling and catalysis

Class I symposium / Leopoldina Lecture by Reinhard Wilhelm

Prof. Cynthia Volkert ML (Göttingen) opened the Class I symposium on 27 March in Halle with a call for increased efforts in the field of recycling. She said that, while natural systems use elements such as carbon, nitrogen and oxygen sparingly, modern industrialised countries consume them in vast quantities. Nature recycles all its materials, but key resources (e.g. minerals) take longer than a human lifetime to regenerate. Volkert said that life-cycle analyses should be at the heart of any recycling project. She pointed out that a great deal of effort is being invested in finding intelligent ways of combining materials. With that in mind, increasing research into recycling would almost certainly boost the reuse of materials and thereby ease the strain on our environment.

Prof. Ewine van Dishoeck ML (Leiden) followed with a talk on the birth of stars. Van Dishoeck, an astronomer, uses astrochemistry to investigate how dust forms into new stars. Her work requires regular visits to the Atacama Desert in Chile, where she uses the famed ALMA telescope. She ended her presentation on an optimistic note, saying that this will be the year that the Rosetta probe puts a lander on the comet 67P. Her hope is that this will give us new insight into the matter that formed our solar system.

Geothermal energy has enormous potential in Germany

Prof. Christoph Clauser ML (Aachen) used his presentation to promote the cause of geothermal energy. He began by explaining the methods used for harnessing this kind of energy. Fracking, he said, has been used in the field of geothermal energy for many years. It involves forcing water into rock at high pressure. The sheer forces that this produces in the rock create cavities in which the water can then circulate and warm up. Clauser says that, while geothermal energy has enormous potential in Germany, it has suffered repeated setbacks. For instance, the minor Basel earthquake of 2006, which occurred next to a series of boreholes, brought an entire branch of the research to its knees – even though relatively little damage was done. Clauser also pointed out that the public debate

The new Members of Class I



The new members of Class I are presented with their membership certificates: Prof. Wolfgang Marquardt ML (Aachen), Prof. Marc Burger ML (Zurich), Prof. Reinhard Wilhelm ML (Saarbrücken), Prof. Klara Nahrstedt ML (Urbana), Prof. Christof Wöll ML (Karlsruhe), Secretary-General of the Leopoldina Prof. Jutta Schnitzer-Ungfug, Prof. Michael Struwe ML (Zurich), Prof. Ewine van Dishoeck ML (Leiden), Prof. Peter Bäuerle ML (Ulm), Prof. Martin Bossert ML (Ulm), President of the Leopoldina Prof. Jörg Hacker ML, Prof. Paul Biran ML (Zurich), Prof. Dr Manfred Curbach ML (Dresden), Prof. Peter Schreiner ML (Gießen), Prof. Frank Neese ML (Mülheim).

Photo: Markus Scholz

about fracking repeatedly, and wrongly, equates groundwater with drinking water. “There is no sense of proportion in the debate,” he concluded.

Prof. Paul Biran ML (Zurich) opened his presentation with a quote from Johann Wolfgang von Goethe, who was himself a member of the Leopoldina: “Mathematicians are like Frenchmen: Whatever you say to them they translate into their own language and forthwith it means something entirely different.” Biran went on to outline current mathematical problems in the space between Newtonian mechanics and Hamiltonian dynamics. He illustrated his points with the qualitative properties of flow models used in meteorology.

Prof. Matthias Drieß ML used his talk to highlight the importance of catalysis. He explained that 90 percent of the materials we encounter every day have come into contact with a catalyser. To put that

into a specific context, he talked about efforts to find chemical storage solutions for solar energy. Conventional methods, such as electrolysis, require more precious metals than are available. Drieß explained that catalysers and new processes could help by boosting efficiency.

On the evening before the symposium, Prof. Reinhard Wilhelm ML (Saarland University) gave a Leopoldina Lecture in which he treated over 100 audience members to an enthralling exploration of aircraft safety systems. He explained that the software systems used to monitor aircraft have to be able to reach correct conclusions within the blink of an eye. “Flutter” systems that oversee the movement of the wings, for instance, deliver readings every five milliseconds. Wilhelm said that the main challenge is to make sure the systems can analyse huge data streams and interpret them correctly in real time. (can)

Leading the field in biomedical research

First “Total immersion into Science” programme comes to an end in Boston

The first “Total immersion into Science” seminar programme for journalists, organised jointly by the Leopoldina and the Robert Bosch Stiftung, came to an end after the fourth and final seminar event in Boston, Massachusetts from 1 to 3 May 2014. As part of a two-year project entitled “The patient of the future: how genetic engineering and Age Research are changing medicine”, 15 journalists gained insight into the latest medical developments.

During the final seminar event “Cutting edge in biomedical science”, participants were invited to visit some of the world’s most prestigious institutions in the fields of medicine and life sciences, including the Whitehead Institute, Broad Institute and Massachusetts General Hospital. Nobel laureates Prof. Phillip A. Sharp of the Koch Institute at the Massachusetts Institute of Technology and Prof. Jack Szostak from Harvard Medical School were among the speakers at the event.

(mik)



Participants in the “Total immersion into Science” seminar programme experienced the “cutting edge in biomedical science” over a period of three days.

Photos: Karsten Möbius



Nobel laureate Jack Szostak held a lecture that offered insight into synthetic biology and the origins of life.



Leopoldina President Jörg Hacker and Ingrid Wüning Tschol of the Robert Bosch Stiftung thanked the journalists for participating.



During a tour of the Broad Institute, the participants were able to glimpse behind the scenes of leading research projects.

Solving problems in the water sector

Symposium on „Water Issues and Ecological Sustainability in Areas of Urbanization“

The German National Academy of Sciences Leopoldina, the Young Academy and the Brazilian Academy of Sciences organised a symposium entitled “Water Issues and Ecological Sustainability in Areas of Urbanization” from 5 to 8 May 2014 in the city of São Carlos, Brazil.

Prof. Peter Fritz ML coordinated the project on behalf of the Leopoldina. The

interdisciplinary event for young scientists from Germany and Brazil was hosted as part of the “Germany + Brazil 2013-2014” year – an initiative of the Federal Foreign Office.

Addressing the issue “How do we want to live tomorrow?”, the 26 participants worked in groups and held plenary sessions to discuss future-orientated research

questions and approaches to solving problems in the water sector.

They highlighted issues surrounding health, ecosystem services and land use. The outcomes of the symposium are to be published in a policy paper. A field trip to a wetland situated near São Carlos and a public panel discussion rounded off the event.

(jn)

Wall mosaic revealed at Georg-Forster-Haus



A wall mosaic designed by students of the Burg Giebichenstein University of Art and Design was unveiled at the Georg-Forster-Haus in Halle (Saale) on 24 April 2014. The competition to design an artwork for a wall in the building's foyer and the creation of the winning design was funded by the Friends of the Leopoldina. Georg-Forster-Haus is a place of intercultural exchange run by Martin-Luther-Universität Halle Wittenberg and the German National Academy of Sciences Leopoldina. It also offers accommodation to visiting researchers. The photograph shows (from left to right) Leopoldina Secretary-General Jutta Schnitzer-Ungewig, Leopoldina President Jörg Hacker, and Minister-President of Saxony-Anhalt Reiner Haseloff.

(jk)/Photo: Markus Scholz

The future of synthetic biology

IAP publishes statement on Scientific Opportunities and Good Governance

IAP, the global network of science academies, published a statement on synthetic biology in early May.

The report entitled "Realising Global Potential in Synthetic Biology: Scientific Opportunities and Good Governance" addresses issues surrounding biosecurity

and synthetic biology's contributions to medicine, energy supply and food security, as well as technical challenges facing the future development of the research field. Prof. Volker ter Meulen ML, co-chairman of the IAP, explained that the factors that might prevent us from exhausting all the

possibilities of synthetic biology also form part of the statement, which was drawn up on the basis of the work of the IAP member academies. (jk)

■ THE STATEMENT IS AVAILABLE HERE.

People

Deceased Members

■ Hans-Peter Dürr ML

7 October 1929 - 18 May 2014 | Munich

Physics

Hans-Peter Dürr became a member of the Leopoldina in 1975. His work focused on nuclear and elementary particle physics. As Werner Heisenberg's assistant, Dürr learned a great deal from the renowned physicist and was able to build on his hypotheses. In so doing, he made major contributions to Heisenberg's spinor field theory and was later appointed his succes-

sor at the Max Planck Institute for Physics in Munich. Dürr believed that he had a responsibility to society as a scientist. He was actively involved in the peace movement and efforts to bring about disarmament. His work in these areas earned him the Right Livelihood Award in 1987.

■ Ernst Kern ML

13 January 1923 - 14 May 2014 | Surgery, Orthopaedics, Anaesthesiology

Ernst Kern's professional interests ranged from cardiovascular and sensory physiology, through pancreatic and bile

duct systems, to emergency surgery. He researched early postoperative complications, how to treat them and how to prevent them. In so doing, he made pathophysiology a key focus of hospital teaching for the first time. The Leopoldina made him a member in 1977.

■ Fritz Kümmerle ML

14. February 1917 - 6 May 2014 | Bretzenheim Surgery, Orthopaedics, Anaesthesiology

Fritz Kümmerle, a physician, focused on surgery of the pancreas, bile ducts and

small intestine. He was one of the first surgeons to perform a partial and total pancreatectomy, which earned him recognition throughout Germany and abroad. He also brought new technology into heart surgery, using heart-lung machines to take over the job of both the heart and the lungs during an operation. He was elected to the Leopoldina in 1982.

■ **Gerhard Seifert ML**
9 September 1921 - 17 April 2014 |
Hamburg

Pathology and Forensic Medicine

Gerhard Seifert spent most of his professional life in the fields of oral pathology and endocrine pathology. He was particularly interested in the structure of the salivary glands and the surrounding tissue, and in the pancreas, which is responsible for regulating blood sugar levels. His achievements earned him membership of the Leopoldina in 1981.

Newly elected members, March 2014

■ **Wolfram Burgard ML**, Freiburg, Albert-Ludwigs-University Freiburg, Head of the research lab for Autonomous Intelligent Systems (Informatics Section)

■ **Joachim Cuntz ML**, Münster, University of Münster, Mathematical Institute (Mathematics Section)

■ **Luisa De Cola ML**, Strasbourg, I.S.I.S Institut de Science et d'Ingénierie Supramoléculaires, University of Strasbourg (Chemistry Section)

■ **Michael Grätzel ML**, Lausanne, École polytechnique fédérale de Lausanne, Laboratory of photonics and interfaces (Chemistry Section)

■ **Detlef Günther ML**, Zürich, Swiss Federal Institute of Technology in Zurich (ETHZ), Laboratory of Inorganic Chemistry (Chemistry Section)

■ **Monika Henzinger ML**, Vienna, University of Vienna, Theory and Applications of Algorithms research group (Informatics Section)

■ **Ulrike Lohmann ML**, Zurich, Swiss Federal Institute of Technology in Zurich (ETHZ), Institute for Atmospheric and Climate Science (Earth Sciences Section)

■ **Daniel Loss ML**, Basel, University of Basel, Department of Physics (Physics Section)

■ **Reimund Neugebauer ML**, President, Fraunhofer-Gesellschaft, Munich (Engineering Sciences Section)

■ **Ulrich Platt ML**, Heidelberg, Heidelberg University, Institute of Environmental Physics (Earth Sciences Section)

■ **Manfred Strecker ML**, Potsdam, University of Potsdam, Institute of Earth and Environmental Science (Earth Sciences Section)

Publications

The Acta Historica Leopoldina series has recently published:

„Carl Friedrich von Weizsäcker: Physik - Philosophie - Friedensforschung“, edited by Klaus Hentschel (Stuttgart) and Dieter Hoffmann (Berlin), Leopoldina-Symposium of 20-22 June 2012 in Halle (Saale) Nr. 63, 2014, ISBN: 978-3-8047-3244-5, € 29,95



Leopoldina

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