



Leopoldina
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der Wissenschaften

Leopoldina news

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Deutsche Akademie der Naturforscher Leopoldina –
German National Academy of Sciences

Halle (Saale), 7 June 2019

Bundespressekonferenz



Prof. Dr. Lelieveld

Prof. Dr. Hennecke

Prof. Dr. Lohse

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Power of Science symposium in Berlin

Editorial

Dear Members and Friends
of the Leopoldina,



Environmental protection is health protection. This sounds like a simple message, but in some places it has only

recently been elevated to a guiding principle for political action. Nevertheless, the debate around the issue is making progress.

And the Leopoldina is playing its part. On a national level, it published its Clean Air statement at the start of April (see pages 3 and 4). On a European level, it has contributed to a new EASAC paper on the link between climate protection and health protection (see page 6). Finally, on an international level, the Leopoldina will join the US academies of sciences, the Brazilian Academy of Sciences and the Academy of Science of South Africa to present the statement "Air Pollution and Health" on 19 June at the United Nations in New York (page 7).

The response to these initiatives has been wonderful to see. The Clean Air statement alone has had a significant and lasting impact in politics, the media, and wider society. The subject matter is certainly complex and the authors of the statement presented a more comprehensive overview than was initially foreseen when the working group was created. This has contributed to the debate around the issue, and the paper is a prime example of one of the academies' strengths – the ability to bring together expertise from across the entire spectrum of scientific disciplines and feed this into science-based policy advice for the good of society as a whole. On that note, I hope you enjoy reading this new edition!

Sigmar Wittig

Academies of the G7 countries present statements

Recommendations passed to the French G7 Presidency



The academies of sciences of the G7 countries – the USA, France, Germany, the United Kingdom, Japan, Italy and Canada – prepare joint statements for each summit of the countries' heads of state and government.

Image: Rawf8 - Adobe Stock

In the run-up to the G7 summit in Biarritz, France, from 24 to 26 August, the national academies of sciences in Germany, France, the United Kingdom, Italy, Japan, Canada and the USA have once again prepared a set of joint recommendations for the heads of state and government of the G7 countries.

Following on from the Franco-German symposium held by the Leopoldina and the Académie des Sciences in September 2018, one of the academies' three G7 statements addresses the development and use of artificial intelligence (AI). It calls for a new approach that looks beyond the economic potential of AI to place greater value in particular on the benefits for society. For example, effects on the labour market or healthcare system should be identified at an early stage so that countermeasures can be taken if necessary.

"I hope that our position is met with approval at the summit," says Prof. Dr. Sigmar Wittig ML, who helped draft the G7 recommendations and is involved in the partnership with the Académie des Sciences. "For me, that has two parts – taking the impact on society into account, while ensuring that our economy and industry are able to develop and compete and that any problems are addressed through dialogue."

The two other G7 statements explore recent developments in the academic research system and their societal impact. One looks at the question of trust in science, while the other focuses on citizen science in the age of the internet. The Presidium Member Sigmar Wittig hopes that these two activities will "help counteract society's loss of trust in science." This involves, "for example, us as scientists setting out what a new finding means and what consequences it may have, and explaining that there are some questions that science can't yet definitively answer." The three recommendations drawn up under the leadership of the Académie des Sciences were finalised at the meeting of the G7 academies of sciences at the end of March in Paris, France. On 6 May, the documents were presented to politicians and the public before being passed on to the French G7 Presidency.

Providing advice for the annual summit of the G7 countries is a strategic responsibility that forms a core part of the Leopoldina's international policy advice work. Together with the other G7 academies, the Leopoldina identifies issues with scientific relevance that fit into the summit's agenda while also broadening the political focus. (cw, bh)

What can be done to keep reducing air pollution?

Leopoldina recommends integrated strategy for air quality management and transport transition

In light of the recent debate around air pollutants and driving bans, the National Academy of Sciences Leopoldina set up a working group in mid-February to look at limit values for levels of nitrogen oxides and particulate matter in respiratory air. On 9 April, members of the working group presented the “Clean Air” statement at the Federal Press Conference in Berlin. Prof. Dr. Martin Lohse ML, Vice President of the Leopoldina, worked with the President of the Leopoldina Prof. Dr. Jörg Hacker ML and the Presidium Member Prof. Dr. Sigmar Wittig ML to coordinate the preparation of the statement. He talked to Leopoldina news about the expert group’s methods and findings.

The Leopoldina was originally asked by German Chancellor Angela Merkel to produce a statement on nitrogen oxides. In the end, she received a much more comprehensive report. How did that come about?

Martin J. Lohse: We began by thinking about how broadly we wanted to address the issue. Especially as it was clear that the timeframe was quite limited. We quickly came to the conclusion that there was no point in considering the problem in isolation. That’s a mistake that we see a lot in the wider public debate – the problems associated with traffic are reduced to a single aspect, and conclusions are drawn that turn out not to make sense as soon as you look at the bigger picture.

How did you decide on this comprehensive approach? Whose idea was it?

Lohse: It was a gradual process. We didn’t take long to decide that we would have to include particulate matter. But it was only later on in our discussions that we saw how this shifted the focus towards carbon dioxide. Mr Edenhofer and Mr Renn (*Prof. Dr. Ottmar Edenhofer ML and Prof. Dr. Ortwin Renn ML – editor’s note*) played an important role. This is a topic that they have worked on in-depth. In the end, we all agreed on the stance we wanted to take. Carbon dioxide is the biggest problem, followed by particulate matter, and nitrogen dioxide comes in third. That was completely the opposite



Leopoldina Vice President Martin J. Lohse led the working group “Limit Values for Air Pollution”. For his research on the mechanisms behind signal processing in cells and the effects of medication on receptors, he has won awards including the Leibniz Prize from the German Research Foundation and the Ernst Jung Prize for Medicine, as well as two grants from the European Research Council. Prof. Dr. Lohse has worked at the Max Delbrück Centre for Molecular Medicine within the Helmholtz Association (MDC) since 2016.

Image: Christoph Rieken | Leopoldina

of the general public’s perception at that time. I remember that Mr Edenhofer and I were emailing each other one weekend and wondering – shouldn’t we be a little bolder? It helped that we were part of a large working group and we were able to stand together and say, yes, let’s be bolder.

What do you mean by “being bold”?

Lohse: Being bold means looking at the full extent of the problem and making it clear that small-scale measures won’t do the job. For example, it’s not enough to filter exhaust gases. That doesn’t solve the carbon dioxide problem. And being bold also means saying, very clearly, that it won’t be too hard to solve the problem of air quality management when it comes to cars, but that the problem of energy consumption and carbon dioxide emissions needs a much further-reaching approach.

Was it a routine statement in terms of workflow and organisation?

Lohse: Not quite. For one thing, we had to cover a very broad spectrum. We needed chemists who work on combustion and pollutants, as well as atmospheric chemists who know how these gases spread. We needed engineers who know about car engines. We needed medical experts, toxicologists and epidemiologists. And to consider the consequences, we needed economists, traffic experts, and environment and climate researchers. So we contacted specialists from this whole spectrum. In the end, the working group itself consisted of twenty researchers and we consulted a dozen or more external experts.

That’s no mean feat ...

Lohse: It was impressive to see how much the group put into their work. Even when we initially thought a particular section would be straightforward, we ended up with a whole range of different versions. That shows how diligently, even painstakingly, the group went about their tasks.

Where did this passion come from?

Lohse: Part of it is undoubtedly the fact that we were asked directly by Ms Merkel. Each one of us saw that as a challenge, I think. And because the group was so large, it was also quite diverse, with a wide range of different perspectives. We did have to fight a few things out.

But you managed to finish the statement very fast.

Lohse: Well, fast is relative. For politicians, a few weeks might almost be an eternity. Whereas for scientists that’s nothing at all. We wrote this statement in about six weeks. Usually, we can easily take two years for a statement.

How was it received?

Lohse: There was a lot of media coverage, although the statement itself is relatively small. But that shows how important it is for us to focus our statements on issues that really matter to the general public. And it’s then equally important to ensure our work is accessible to laypeople, so that everyone feels included and can work

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together to tackle the issues affecting us as a society.

What loose ends remain when it comes to the issue of clean air – what might the Leopoldina work on next?

Lohse: There are two major issues where we have offered to help work on a solution. Firstly, we're recommending an integrated air quality management strategy. It's clear that particulate matter is the primary health issue when we look at our air. And it's also clear that things have improved a lot in recent years – we should certainly emphasise that and give credit where credit is due. For example, modern cars generate less particulate matter in their exhaust gases than from tyres and brakes. However, this means that even electric cars can't solve the whole problem – they have tyres and brakes too, they wear away the road surface too.

So particulate matter remains the biggest problem?

Lohse: The biggest problem, as I mentioned, is carbon dioxide. But in terms of direct adverse effects, particulate matter is the most significant. It comes from many different sources. Chimneys, industry, tyres and brakes – including metro train brakes. Particulate matter is generated when nitrogen dioxide bonds with ammonia, so agriculture is also part of the problem.

This means that setting a limit value for immissions, i.e. for levels measured in the air, probably doesn't make much

sense. Instead, we need an integrated assessment that looks at what the sources are and how much each one contributes to pollution; which of these sources we can do something about by designing technical measures, how these could be implemented, and what they would cost the people affected and society as a whole. So air quality management is one central issue.

And the other is the transport transition?

Lohse: That's right. We have to ask ourselves: What kind of transport system do we want? What components will that system need? Obviously, these questions have major implications for the economy. In Germany, the car is king. If we end up manufacturing cars that nobody wants, that will have a ripple effect throughout our society. So we should all be thinking about

the future of mobility and about what we can do today to help us get there. I'd say there's a need for a lot more research and even more debate on this issue. More working groups are certainly on the horizon at the Leopoldina.

Finally, it would be interesting to organise a symposium on epidemiological methods and findings and to contrast these with controlled exposure methods such as those used in toxicology and occupational medicine. The sensational headlines we've been seeing about diesel killing thousands each year will cast a shadow over our work for a long time to come. I think it's important for us to communicate transparent parameters for epidemiological findings, including the uncertainties involved.

THE INTERVIEW WAS CONDUCTED BY KERSTIN HOPPENHAUS

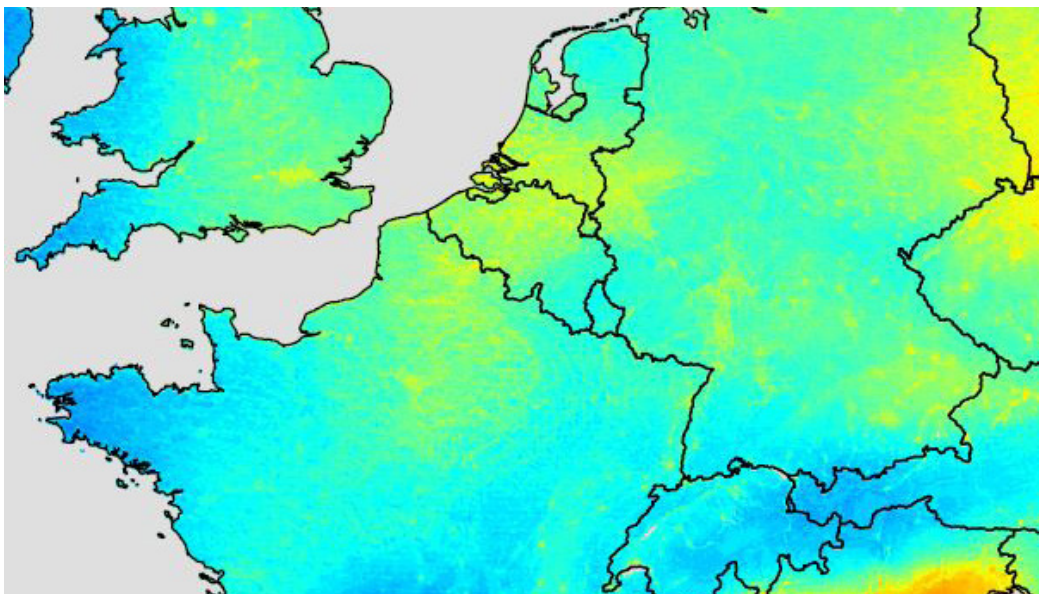
LEOPOLDINA STATEMENT "CLEAN AIR"

Clean air is a public good which is vital for life. Responsible environmental and health policy must make the fight against air pollution a priority. It is therefore a good sign that the right track to air quality management is being debated with such passion in a highly developed industrial society such as Germany. It will only be possible to reconcile our mobility needs and environmental protection in the long term through measures which are backed by as many stakeholders as possible.

The working group started out by looking at the limit values for air pollution from nitrogen oxides (particularly NO₂) and at methods for measuring air pollutants. It explored the-

se topics in conjunction with the much more harmful pollution of respiratory air by particulate matter. It also incorporated another important aspect: the emission of greenhouse gases, most notably carbon dioxide (CO₂). All of these aspects had to be considered in an integrated approach, as measures which appear wise from one perspective may nonetheless turn out to cause net harm. This ad hoc statement presents the results of the discussions in the working group. It includes information on the latest scientific knowledge as well as recommendations for the next steps to achieving cleaner air.

■ STATEMENT ON CLEAN AIR
(ONLY GERMAN)



This image shows particulate matter levels across Germany and neighbouring countries based on satellite data. The more intense the yellow/orange colour, the higher the concentration.

Time for a new reproductive medicine law

Egg cell donation, embryo donation, surrogacy: the Leopoldina and the Union of German Academies present a joint statement with proposals for reform

For the last 40 years, German couples who are unable to have children have been able to turn to reproductive medicine. For around 30 years, the use of these treatments has primarily been regulated by the German Embryo Protection Act. The decades since this law was passed have seen enormous changes in medical science and in society. Now, a joint working group set up by the National Academy of Sciences Leopoldina and the Union of the German Academies of Sciences and Humanities has drawn up recommendations for a new, modern reproductive medicine law.

PROF. DR. JOCHEN TAUPITZ ML
PROF. DR. CLAUDIA WIESEMANN
PROF. DR. HERIBERT KENTENICH

Starting a family of their own is one of the most important parts of life for many people. It's also vital for our future as a society. But some people can only have children with the help of reproductive medicine. The legal situation in Germany has long been unsatisfactory. The Embryo Protection Act was passed in 1990, making it almost 30 years old. It doesn't cover the many advances in reproductive medicine that have been made since then.

As a result, doctors are frequently forced to use methods that no longer meet international standards and that expose mother and child to unnecessary risks. Nor has the Embryo Protection Act kept pace with societal change; it doesn't reflect the many different kinds of families that can be found today. Practitioners in the field are growing increasingly exasperated with legislators' failure to act. More recently, the courts seem to feel the same, and sometimes find themselves compelled to openly intervene in political issues.

The need for regulation is particularly pressing in the following areas:

- Medical practitioners in many different countries follow guidance based on the latest international research findings and only implant the single most viable of the embryos available. This elective single embryo transfer avoids multiple pregnancies, which are risky for both mother and babies, without appreciably reducing the individual's chance of becoming pregnant.



New legislation is needed to regulate reproductive medicine.

Image: fotolia.com - Dmytro Sukharevskiyt

However, the procedure is punishable by law in Germany.

- Sperm donation is permitted in Germany, but egg cell donation is not. This means that infertile men can start a family with the help of a donor, but the same possibility is withheld from women who are unable to use their own egg cells, for example after having cancer. It is difficult to imagine a legal justification for this double standard.

- The legal situation in Germany means that many couples resort to egg cell donation abroad. In other countries, anonymous donation is often the norm. This means that the child is denied its constitutional right to knowledge of its birth parents. In this respect, the ban on egg cell donation in Germany indirectly damages the welfare of the child.

- Surrogacy, which is prohibited in Germany, throws up particularly complex ethical and legal issues. There is an urgent need for regulations to clarify the situation of children growing up in Germany who were born to a surrogate mother abroad.

- In Germany, as elsewhere, many reproductive medicine centres offer egg freezing. In some cases this is done for medical reasons – for example, before a patient undergoes chemotherapy. The storage, fertilisation and transfer of these

eggs should be regulated in the interests of the women and couples involved as well as their future children.

- There is little medical or societal justification for restricting funding for reproductive medicine treatment, for couples with statutory rather than private health insurance, to married couples or those within a narrow age range.

The statement takes a comprehensive look at current practice in reproductive medicine and the associated medical, ethical and legal challenges. It builds on this broad picture to set out the fundamental premise and central pillars of an envisaged future legal framework. It also makes concrete proposals for regulation of common procedures in reproductive medicine, including egg cell, sperm and embryo donation as well as preimplantation genetic diagnosis.

For surrogacy, the statement highlights the urgent need for regulation as well as long-term regulation options. The authors focus in particular on the provision of education and advice for the couples affected, including psychosocial counselling, as well as on the organisation and financing of reproductive medicine.

■ STATEMENT ON REPRODUCTIVE MEDICINE LAW (ONLY GERMAN)

How and where are memories encoded in the brain?

Class II meets for the annual Life Science Symposium and elects new members

We all have episodic memories of particular life experiences, stretching from our childhood to our recent everyday life. But how and where are these memories created in the brain? Prof. Dr. May-Britt Moser ML of the Kavli Institute for Systems Neuroscience (Trondheim, Norway) presented her research into this question at the recent Leopoldina Lecture.

On the eve of the Class II Life Science Symposium, the neuroscientist talked about the structures in the brain that encode the 'where', 'when' and 'what' of a memory. She and Prof. Dr. Edvard Moser ML discovered these structures, known as grid cells, in 2005. After countless experiments, the Mosers were able to demonstrate that many different cell types work together within grid cells. The different types encode different categories of information, such as speed and direction of movement, direction and distance of an object, exact location, or time. By combining all of this information, our brain then creates an episodic memory in the entorhinal cortex.

These findings are particularly significant for our understanding of neurodegenerative disease. In Alzheimer's patients, for example, these cells die off and episodic memories are gradually lost. May-Britt and Edvard Moser, together with Prof. John O'Keefe PhD, won the Nobel Prize in Physiology or Medicine 2014 for their research.

The symposium the next day brought

The new members of Class II



On 22 May, the new members of Class II received their membership certificates. From left: Prof. Dr. Matin Qaim ML (Göttingen, Germany), Prof. Dr. Garret A. FitzGerald ML (Philadelphia, USA), Leopoldina Secretary-General Prof. Dr. Jutta Schnitzer-Ungefug (Halle, Germany), Prof. Dr. Heinz Feldmann ML (Hamilton, USA), Prof. Dr. Manajit Hayer-Hartl ML (Martinsried, Germany), Prof. Dr. Michael Brunner ML (Heidelberg, Germany), Prof. Mandyam V. Srinivasan PhD ML (St Lucia, Australia), Prof. Dr. Holger Stark ML (Göttingen), Prof. Dr. Claudia Köhler ML (Uppsala, Sweden), Prof. Dr. Jan Ellenberg ML (Heidelberg), President of the Leopoldina Prof. Dr. Jörg Hacker ML (Halle), Prof. Dr. Carmen Birchmeier ML (Berlin, Germany), Prof. Dr. Wolf-Dietrich Hardt ML (Zurich, Switzerland), Prof. Dr. Roland Eils ML (Berlin), Prof. Dr. Maïke Sander ML (San Diego, USA), Prof. Dr. Chris-Carolin Schön ML (Munich, Germany) and Prof. Dr. Johannes Lehmann ML (Ithaca, USA).

Image: Leopoldina | Markus Scholz

together scientists from a broad range of disciplines within life sciences. The talks covered topics from developments in

structural biology to digitalisation in medicine to sustainable agriculture and food security. (hst)

Reducing carbon dioxide in traffic

On 20 March, the European Academies' Science Advisory Council (EASAC) presented its latest investigation into reducing carbon dioxide emissions generated by road traffic, which make up 72 percent of all greenhouse gas emissions in the European Union (EU). The report calls for more rigorous political measures to reduce emissions far enough that global warming will not exceed two degrees Celsius.

It recommends combining transitio-

nal measures with long-term action by reducing and avoiding road transport, shifting to low-emission means of transport for passengers and freight, and improving the performance of the means of transport used.

The report was welcomed by the attendees representing the European Parliament and Commission, global transport and sustainability networks, and the transport industry, who praised its solid scientific basis and suitably pragmatic

approach. It concludes that achieving climate protection goals requires fast, innovative decisions.

The necessary changes in behaviour can be encouraged through targeted funding of public transport, appropriate taxation on all means of transport, and development of the necessary infrastructure for carbon-neutral transport. (nh)

■ EASAC STATEMENT
ON DECARBONISATION

The Power of Science

Accompanying Alexander von Humboldt to Russia and Central Asia



The celebratory symposium in honour of the naturalist Alexander von Humboldt was held at the Akademie der Künste (Academy of Arts) in Berlin.

Images: Leopoldina | Markus Scholz

The Leopoldina paid tribute to the work of the naturalist Alexander von Humboldt in Eurasia and Central Asia with the celebratory symposium “The Power of Science in Times of Change” on 14 May at the Akademie der Künste (Academy of Arts) and the Russian embassy in Berlin. Humboldt became a Member of the Leopoldina at the age of 24 and was later made an honorary member of the Russian Academy of Sciences.



The symposium was opened by Jörg Hacker, President of the Leopoldina.

The symposium was based on Humboldt’s expedition to Imperial Russia in 1829 – his last major trip. At the request of Nicholas I, Emperor of Russia, he travelled from the Baltic via St Petersburg into the Urals and Altai Mountains as far as the Chinese border, and from there across the steppes of Central Asia to the Caspian Sea and along the Volga back to St Petersburg, the capital of Imperial Russia. He recorded his findings from the expedition in the 1844 book “Asie Centrale”, which laid the groundwork for scientific exploration of Eurasia and Central Asia.

Three specialist lectures bridged the gap between 19th-century and modern

studies of Eurasia and Central Asia. Prof. Dr. Jörg Stadelbauer (Freiburg, Germany) explained how the Russia expedition unfolded, analysed excerpts of Humboldt’s travel correspondence and explored his legacy in the post-Soviet countries up until today. Prof. Dr. Maria Sukhova (Gorno-Altai, Russia) spoke about biodiversity and climate change in the Altai as well as economic development in the mountainous cross-border region. Prof. Dr. Iskandar Abdullaev (Almaty, Kazakhstan) described the status of water as a vital resource in Central Asia and highlighted the economic and political implications of water access.

The panel discussion with guests from Russia, Kazakhstan and Tajikistan covered the role of education from early childhood to university, and the importance of research and innovation for social and economic development. The panel also explored the ‘soft power’ of science as a mediator in international relations, reflections on the future role of science and knowledge sharing, and the influence of social media on how people form opinions and make decisions. (lb)

Recognising air pollution as a global challenge



Germany’s Permanent Representative to the UN, Ambassador Dr. Christoph Heusgen, took part in the discussions of the statement. One central focus was the UN’s agreements and diplomatic processes.

Image: BringIntoBeing.com/Jonas Gustavsson

Air pollution is among the most significant environmental risks for human health and represents a global challenge. It is primarily caused by industry, the transport sector, agriculture and private households. The Leopoldina and its partner academies from Brazil, South Africa and the USA took up this issue when they hosted the workshop Air Pollution and Health from 20 to 21 March in New York. Their aim was to discuss the final version of a joint statement providing recommendations for political action to reduce the health risks associated with air pollution.

The workshop was attended by 20 scientists from Germany, South Africa, Brazil and the USA as well as experts from the United Nations (UN) and civil society. One highlight was the appearance of Germany’s Permanent Representative to the UN, Ambassador Dr. Christoph Heusgen. He discussed the workshop’s key findings with attendees including the head of the Leopoldina delegation, Prof. Dr. Jean Krutmann ML (Düsseldorf, Germany).

Also on 21 March, the German Research Foundation held a session on research funding for the scientists attending the workshop. The academies’ statement will be handed over to high-ranking UN representatives as well as diplomats from the countries involved on 19 June in New York. (jn)

Re-enlightenment? Truth, reason and science in a global world

Annual Assembly of the Global Young Academy at the Leopoldina



Over 200 outstanding young scientists from around the world took part at the 2019 GYA International Conference of Young Scientists 'Re-Enlightenment? Truth, reason and science in a global world'.

Image: Global Young Academy | Markus Scholz

'Re-enlightenment? Truth, reason and science in a global world' was the topic of the Global Young Academy (GYA) Anniversary International Conference. The five-day event from 29 April to 3 May brought together over 200 outstanding scientists from around the world to explore the relationship between science and society as well as the role and limits of science in today's globalised society and in the world. The conference was held at the German National Academy of Sciences Leopoldina in Halle (Germany).

A number of workshops were held in the run-up to the conference together with various local and international partners. One such workshop was dedicated to scientific policy advice. Held at the Halle Institute for Economic Research (IWH) – Member of the Leibniz Association in co-operation with the International Network for Government Science Advice and the GYA, the session used roleplay to help attendees better understand the role of scientific understanding in political decision making.

At the opening of the Annual Assembly on 30 April, GYA members and guests were welcomed by the President of the

Leopoldina Prof. Dr. Jörg Hacker ML and the state secretary at Saxony-Anhalt's Ministry for Economy, Science and Digitalisation, Thomas Wunsch. Both men emphasised the importance of the next generation of scientists and of international co-operation for solving global problems which have a trickle-down effect at local and regional level. At a reception with Halle town councillors and representatives from the municipal authorities, a GYA working group presented the interdisciplinary volume *Responsibility for Refugee and Migrant Integration*.

The keynote speeches by Vladimír Šucha (Director-General of the European Union's Joint Research Centre), Martin Frick (Senior Director for Policy and Programme Coordination at the United Nations secretariat for climate change UNFCCC), and Ismail Serageldin (founder of the Bibliotheca Alexandrina) were extremely well received. Finally, the GYA members and alumni from 67 countries who took part in the event used it as an opportunity to support the movement of the national Young Academies. This year, there was a particular focus on Latin America. Interdisciplinary working groups explored topics such as trust in science, biodiversity, global health and migration. (jp)

People

New Class II members

Ingrid Daubechies ML, Durham, North Carolina, USA, Duke University, Department of Mathematics (Mathematics Section)

Ben L. Feringa ML, Groningen, Netherlands, University of Groningen, Faculty of Science and Engineering, Stratingh Institute for Chemistry (Chemistry Section)

Kai-Uwe Hinrichs ML, Bremen, Germany, University of Bremen, MARUM – Center for Marine Environmental Sciences (Earth Sciences Section)

Joachim Maier ML, Stuttgart, Germany, Max Planck Society, Max Planck Institute for Solid State Research (Chemistry Section)

Christof Paar ML, Bochum, Germany, Ruhr-Universität Bochum, Faculty of Electrical Engineering and Information Technology (Informatics Section)

Stefano Passerini ML, Ulm, Germany, Helmholtz Institute Ulm, Karlsruhe Institute of Technology, Electrochemical Energy Storage (Engineering Sciences Section)

Monika Ritsch-Marte ML, Innsbruck, Austria, Medical University of Innsbruck, Department of Physiology and Medical Physics, Biomedical Physics Division (Physics Section)

Thomas Stocker ML, Bern, Switzerland, University of Bern, Physics Institute (Earth Sciences Section)

László Székelyhidi ML, Leipzig, Germany, Leipzig University, Faculty of Mathematics & Computer Science, Institute of Mathematics (Mathematics Section)

Leopoldina Fellowship Programme

New fellows

Dr. Martin Bohmann from the Institute of Physics at the University of Rostock is spending two years working at the research centre Quantum Science and Technology in Arcetri (QSTAR) in Italy, in the group led by Prof. Dr. Augusto Smerzi.

Dr. Andreas Geißler from the Institute for Theoretical Physics at Goethe University Frankfurt plans to spend a total of 24 months at the Institut de Science et d'Ingénierie Supramoléculaires (I.S.I.S.) at the University of Strasbourg (France) working under Prof. Dr. Guido Pupillo, and at the School of Physics & Astronomy at the University of Nottingham (UK) under Prof. Dr. Juan P. Garrahan.

Dr. Cornelius Gropp from the Laboratory of Organic Chemistry (LOC) at the Swiss Federal Institute of Technology Zürich (ETH Zürich) will spend 18 months working under Prof. Dr. Omar M. Yaghi in the Department of Chemistry at the University of California, Berkeley (USA).

Dr. Philip Kohlmeier from the Institute of Molecular Biology at Johannes Gutenberg University Mainz is moving to the Groningen Institute for Evolutionary Life Sciences (GELIFES) at the University of Groningen (Netherlands) for 24 months to work with Prof. Dr. Jean-Christophe Billeter.

Dr. Anne Urai from the Department of Neurophysiology and Pathophysiology at the Medical Center Hamburg-Eppendorf (UKE) plans to spend 24 months working at Cold Spring Harbor Laboratory (New York, USA) with Prof. Dr. Anne K. Churchland.

Dr. Mario Wiesenfeldt from the Organisch-Chemisches Institut at the University of Münster will use the 24-month grant to carry out research at the Frick Chemistry Laboratory in the Department of Chemistry at Princeton University (New Jersey, USA) with Prof. Dr. David W. C. MacMillan.

Former fellows

PD Dr. Steffen Pauls, a Leopoldina fellow from 2007 to 2009 who has been working at the Senckenberg Research Institute and Nature Museum in Frankfurt since 2015, has now been appointed Professor of General Entomology at Justus Liebig University Giessen.

Prof. Dr. Katharina Anna Zweig, a Leopoldina fellow from 2008 to 2009 who has been a professor at the University of Kaiserslautern since 2012, has received the German Research Foundation's Communicator Award – Science Award of the Donors' Association for the Promotion of Sciences and Humanities in Germany. The award honours her dedicated work in communicating information on the development, use and societal impact of algorithms.



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