



Leopoldina  
Nationale Akademie  
der Wissenschaften

# Leopoldina news

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Deutsche Akademie der Naturforscher Leopoldina –  
German National Academy of Sciences

Halle (Saale), 2 June 2023

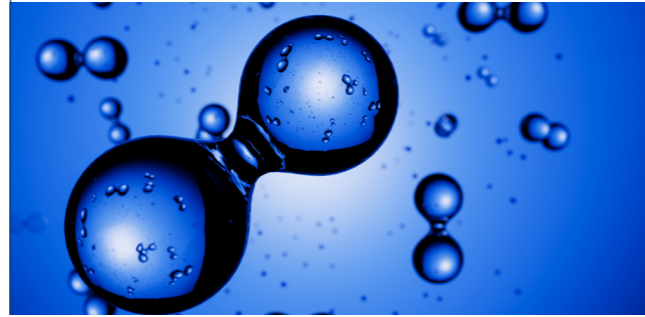
Robert Schlögl and Veronika Grimm in conversation

## Key ideas for transforming the energy system

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### The Leopoldina on Social Media



## Editorial

Dear Members, Dear Friends of Leopoldina,

In the previous newsletter we introduced the focus groups at Leopoldina, established to identify the need for advice in their respective specialist areas. In this issue we report on the first publication of the new focus group “Climate and Energy” (see p. 4f.). The group addresses the subject of energy transition: In the fight against climate change, it is crucial that the transition to renewable energies takes place quickly. Unfortunately, the current pace of change is not fast enough. Therefore, the focus group outlined key ideas for transforming the energy system in a discussion paper in March. According to the paper, important aspects include reliable framework conditions for investments in renewable energy plants and infrastructure, expanding the use of energy sources such as hydrogen, and sustainable carbon cycle management.



Professor (ETHZ) Dr. Gerald Haug, President of the Leopoldina

Image: David Ausserhofer | Leopoldina

The discussion paper was published in preparation for this year’s Research Summit in Berlin/Germany on 28 March, where it was presented and discussed by Leopoldina Vice-President Robert Schlögl. Each year the Research Summit brings together high-ranking representatives from business, science, civil society and politics to try and find answers to current problems and the challenges faced by research and innovation policy in Germany.

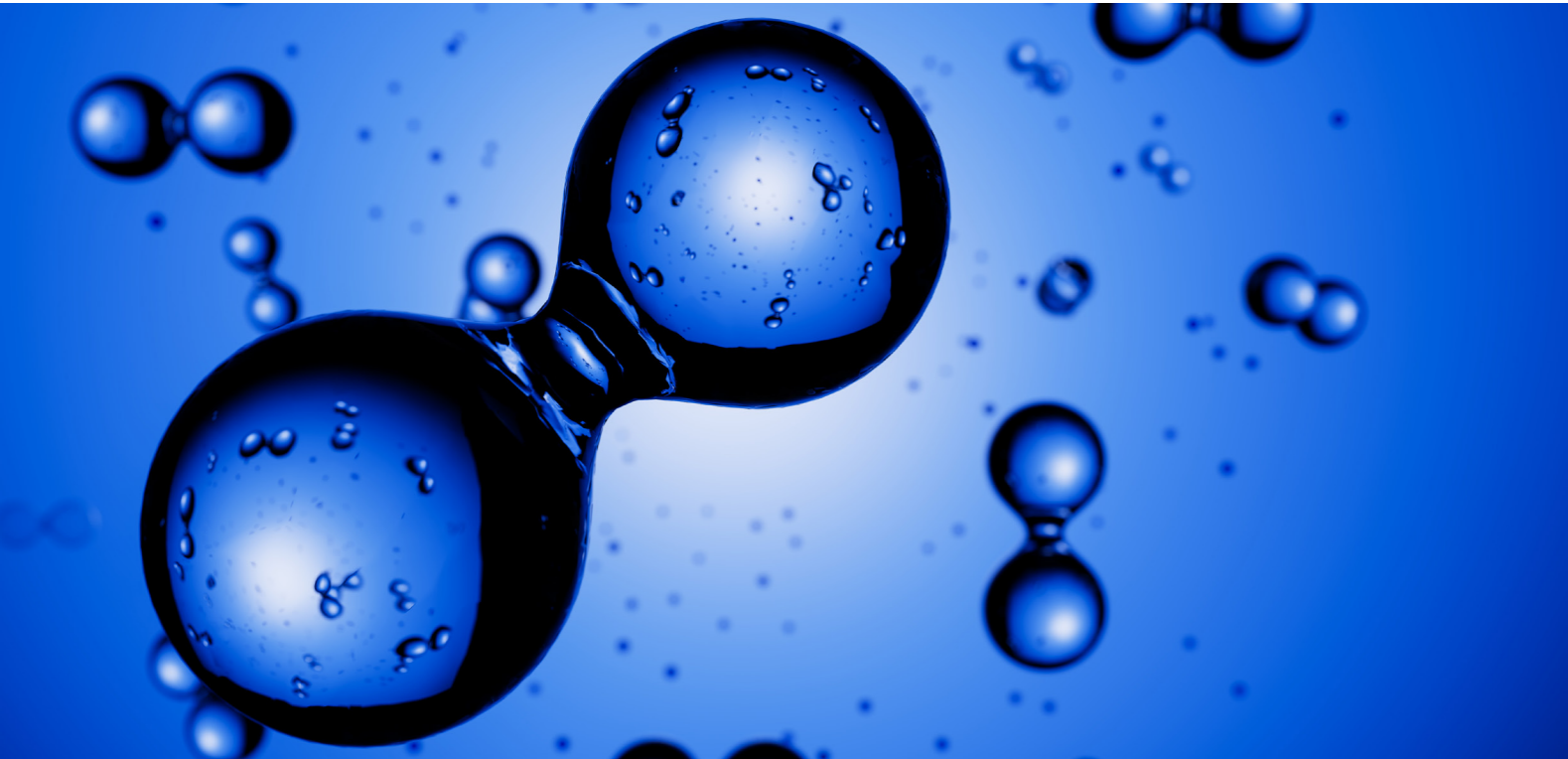
The key ideas formulated in the paper will also be an important part of Leopoldina’s discussion during the Long Night of Sciences in Halle/Germany. Every year thousands of visitors from the area attend the Leopoldina Night to learn about topics relating to science-based policy advice. Entertaining formats such as the Leopoldina Science Slam, the Lower House Debate and the Science Puppet Theatre help to explain complex scientific subjects, such as climate change, biodiversity and the energy transition, in an accessible way. This year the public is invited to discuss the main ideas of the discussion paper in the Lower House Debate.

We hope you enjoy this issue!



# “In times of crisis, policy advice does make an enormous difference”

Robert Schlögl and Veronika Grimm on the need to transform the energy system



Hydrogen – here an artistic representation of the molecules – is an indispensable energy source for the energy transition

Image: Andreas Prott | Adobe Stock

At the beginning of March the Leopoldina focus group “Climate and Energy” published the discussion paper “Key ideas for transforming the energy system”. Leopoldina Vice-President Robert Schlögl ML and Veronika Grimm, Member of the German Council of Economic Experts, discuss the response and the purpose of policy advice.

The discussion paper was written by nine scientists from different disciplines. Was it difficult to find common ground?

**Robert Schlögl:** Actually it wasn’t that difficult, as restructuring the energy supply is a systemic task that involves everyone. When you look at all the various options, without taking an ideological standpoint, you find that everyone has a similar view of the situation. Of course,

there are always different ways of looking at and approaching things in different disciplines, such as in the natural and social sciences. However, fundamental differences tend to exist more in society and not at the Academy.

**Veronika Grimm:** This interdisciplinary approach is extremely important for the credibility of such a paper in terms of politics and with the public. As an individual scientist or an economist for example you are often accused of not understanding technology. Engineers on the other hand are accused of not having the necessary economic expertise.

**Schlögl:** We are all linked to the Academy and see each other in many different settings. So it doesn’t make much sense to give more weight to certain opinions. In this case we were primarily concerned

with finding the right way forward to achieve the energy transition. Even though the goal is clear, there are still many different ways to get there.

*Veronika Grimm, you are an economist. In your opinion what are the most important considerations with regard to transforming the energy system?*

**Grimm:** We can’t look at the transformation from the standpoint of only one nation, we need to think of it in global terms. There is no point trying to achieve a climate goal just for Germany. Instead, Germany needs to use its position wisely. We need to show that climate protection and prosperity can be compatible, promote climate protection in international negotiations, and create global options for climate-friendly growth through tech-

nological development. The big challenge is how to explain this properly.

We are using this paper to draw attention to the urgent need for action. In some areas we are running out of time, for example in the expansion of renewable energies and power grids or in the construction of hydrogen gas power plants. If Germany phases out nuclear power and coal, it will need a rapid expansion of renewable energies and gas-fired power stations to compensate. We also discuss issues we need to push forward with but are not getting enough attention currently, such as negative emissions technologies.

*And for you as a chemist, Mr Schlögl?*

**Schlögl:** The most important thing is the determination to make the necessary changes. Negotiations are difficult for the current government because everyone is focused on their own image. The fact that the right infrastructure is now critical for the energy transition gets lost by the wayside. We need gas, hydrogen and power lines and sites for gas-fired power stations.

*The discussion paper was published at the beginning of March, just in time for the government cabinet meeting in Meseberg. Have its recommendations been taken on board?*

**Schlögl:** The impact of such a goal-oriented strategy paper cannot be verified on a point-by-point basis. It is only effective if it moves those involved in a way that the public doesn’t notice. At least some of the things decided in Meseberg are not in contradiction to our recommendations. That is indeed a great success.

**Grimm:** In times of crisis such as these, policy advice does make an enormous difference. Be it the pandemic, inflation or geopolitical uncertainties – scientists are often consulted because politicians are responsible for defining the new framework for action and seek direction in doing so.

*Do politicians implement the advice of scientists?*

**Schlögl:** Politicians take note of our advice and also request it. However, po-

litical negotiations often take a different track, and we do not have any part in this. But this is not important, as the purpose of scientific policy advice is not to make political decisions.

**Grimm:** Scientists provide a forecast, develop scenarios and courses of action, but it sometimes feels like it takes an eternity for things to get through to politicians and society. Particularly in the case of energy transformation, many things that we recommend in our paper have already been discussed widely in the scientific community. We have been discussing the role of hydrogen in the energy system for decades. In the past we were considered delusional, but nowadays hydrogen strategies are mainstream. The same is true for methods of climate protection for emissions trading.

*Are you already working on the next discussion paper?*

**Schlögl:** Yes, we are preparing a paper on the topic of carbon cycles. If fossil fuel cycles no longer exist at some point, then CO<sub>2</sub> will become a valuable material. Therefore, we already need to be thinking about what the rules and economically viable framework conditions could look like and what technology is required.

■ THE INTERVIEW WAS CONDUCTED BY BENJAMIN HAERDLE

## DISCUSSION PAPER “TRANSFORMATION OF THE ENERGY SYSTEM”

The energy system needs to be transformed if the Paris climate goals are to be achieved in Germany and Europe. It is important to provide technologies that also make this possible around the world. There is a great need for action, because international crises, such as the Russian war of aggression against Ukraine, exacerbate conflicts of interest and make global cooperation more difficult. The Leopoldina discussion paper “Key ideas for transforming the energy system” discusses approaches for an effective and sustainable energy transition.

Transformation strategies should be developed in consideration of the goals to be

achieved, and should therefore be fully open to technology and increase the attractiveness of private investment in the transformation as much as possible. In this case the clarification and reliability of the conditions for investment are essential. At the same time, incentives and targets can lead to a more efficient use of energy.

The discussion paper sets out six key ideas: climate policy should be developed on a European and cross-sectoral level. For this purpose European emissions trading should be expanded in the form of a uniform, transparent, sustainable framework including all emissions. In addition to reducing emissions

it is essential to establish a system of carbon cycle management in order to remove unavoidable emissions from the atmosphere. Furthermore, a hydrogen energy economy needs to be established and there is an urgent need to authorise the import of hydrogen. A further key idea is the expansion of the grid for energy sources and electricity. At the same time, the role of gas-fired power stations needs to be increased in the transition phase.

■ EDS

Discussion paper “Transformation of the energy system” (German only)



# Multiple crises, health of the elderly and ocean biodiversity

G7 Science academies present statements to Japan's Prime Minister at G7 summit



On 7 March 2023 the Japanese Prime Minister, Fumio Kishida, (centre) received representatives of the G7 Academies at his official residence. During this visit they presented three joint statements to the Prime Minister, which were jointly prepared by the National Academies of Sciences. The main topics addressed included multiple crises, the health of the elderly and ocean biodiversity.

Image: Japan Prime Minister's Office

**At the Science7 Summit in Tokyo, Japan on 7 and 8 March, G7 Academies presented three joint statements to the Japanese Prime Minister, Fumio Kishida. The recommendations for the G7 summit of Heads of State and Government in Hiroshima, Japan on 19 to 21 May focus on multiple crises, health of an ageing society and ocean biodiversity. Leopoldina was represented by its President Gerald Haug ML.**

The G7 Academies, which, in addition to Leopoldina, include the national Academies of Sciences of France, the United Kingdom, Italy, Japan, Canada and the USA, have joined forces in the Science7 format to develop science-based statements on urgent global challenges. Leopoldina members have played a key role in this process which included an online conference of experts. The presentation of statements to the G7 President laid the founda-

tions for as many scientific findings and evidence-based recommendations as possible to flow into the political decision-making of the G7.

As a result of climate change, the COVID-19 pandemic and Russia's war of aggression against Ukraine we are in a situation where there have been multiple crises at the same time or in quick succession, which have exacerbated one another. In one of their three statements, the G7 Academies emphasise the urgent need for a coordinated and long-term approach to this cluster of crises.

Another important topic is the health of an ageing society. The G7 Academies are asking for more attention to be paid to the health of elderly people. Health systems need to be better adapted to the needs of increasingly ageing populations. Future challenges will relate to the fact that the proportion of people over 60 years of age is increasing in many countries.

Climate change is having a considerable impact on the oceans – Leopoldina President Gerald Haug addressed this problem in his speech at the Science7 Summit. Warming, acidification and changing ocean currents are increasingly threatening the biodiversity of the world's oceans. The G7 Academies recommend establishing protected marine areas to protect sensitive ecosystems and endangered species, as well as rapidly reducing greenhouse gas emissions to slow climate change and limit its impact on the oceans. ■ KK, CHW

## S7 Statements

- ▶ “Addressing systemic risks in a changing climate”
- ▶ “Better health and well-being of older people”
- ▶ “The ocean and its biodiversity”

## NEW CLASS II MEMBERS – LIFE SCIENCES



The newly elected Class II Members for Life Sciences in 2019, 2020, 2021 and 2022 received their certificates in April. The photo shows Leopoldina President Gerald Haug ML (centre front) and the new Members (from left to right): Anna Köttgen ML, Jörn Piel ML, Tina Romeis ML, Michael Boutros ML, Andreas Peschel ML, Patrick Baeuerle ML, Kai-Uwe Eckardt ML, Hans-Georg Rammensee ML, Robert Grosse ML, Charlotte Förster ML, Sonja-Verena Albers ML, Claudia Höbartner ML, Ulrich Technau ML, Katalin Karikó ML, Ivo Feußner ML, Johannes Hermann ML, Christian Fankhauser ML and Wulf Amelung ML.

Image: Markus Scholz | Leopoldina

## Franz-Ulrich Hartl awarded the Schleiden Medal

Leopoldina honour for fundamental insights into the function and effect of chaperones

**Biochemist Franz-Ulrich Hartl ML has been awarded the Schleiden Medal by the German National Academy of Sciences. The Managing Director of the Max Planck Institute for Biochemistry in Martinsried, Germany received the award for his work of describing the function of chaperones.**

Chaperones are a class of proteins which act as molecular “chaperones” of the cell. This means that they help other proteins to fold correctly when they are exposed to fever or stress. This is why they are also referred to as heat shock proteins. Such unfavourable conditions often lead to misfolding. Chaperones in the eye lens ensure that the protein mix in the lens remains clear and translucent. If this mechanism fails, the lens becomes cloudy. As a result, people develop cataracts. “Protein folding is the last step of transferring information to a functioning molecule”, said Hartl in his speech at the awards ceremony.

Misfolding is a significant factor in



Franz-Ulrich Hartl talks about chaperones.  
Image: Markus Scholz | Leopoldina

ageing and the development of age-related diseases. Hartl and his research group are investigating the influence of chaperones in neurodegenerative diseases such as Chorea Huntington's and Parkinson's disease. It has already been shown in lab experiments that chaperones “can reverse the potentially dangerous clumping of proteins or prevent their formation.”

Before Franz-Ulrich Hartl was appointed Director of the Max Planck Institute for Biochemistry in Martinsried/Germany in 2002, he was an Associate Investigator at the Howard Hughes Medical Institute (Chevy Chase/USA). He has received several awards for his research, including the Gottfried Wilhelm Leibniz Prize in 2002, the Otto Warburg Medal in 2009, and the Lasker Award in 2011. Since 2022 he has directed the Advanced Grant Project “INSITUFOLD – In situ analysis of chaperone mediated protein folding and stability” of the European Research Council (ERC). His insights into chaperones and protein folding are currently taken as standard in biology textbooks. Franz-Ulrich Hartl has been a Member of Leopoldina since 2002 in the Section: Genetics/Molecular Biology and Cell Biology. ■ OK

▶ Schleiden Medal



## EUROPEAN CLIMATE CONFERENCE CONCLUDES WITH OFFICIAL STATEMENT



The first European Climate Conference in Warsaw, organised by the Leopoldina and the Polish Academy of Sciences, focused on the regional signs of climate change, how to mitigate its negative impact and adjust to changing climate conditions. Their recommendations have been set out in the Warsaw Communiqué. The paper describes the increasingly negative impacts of climate change and proposes cross-sectoral strategies and measures. It recommends accelerating efforts to transform energy use and achieve climate neutrality by implementing a systemic and sequenced approach. The diversity of continental

Europe is seen as a strength in that the potential of different regions can be harnessed more boldly than before. In addition, it recommends coordinating regulatory as well as market and financial instruments – such as consistent CO2 pricing and openness to green technologies. The conference brought together 90 experts from 45 European and Eurasian countries, including Leopoldina President Gerald Haug, and will be a biennial event.

■ SWE, LB / Image: Marcin Kmieciński

► Warsaw Communiqué

## IHRN

## Human Rights and Equality

The International Human Rights Network of Academies and Scholarly Societies (IHRN) invites you to its 14th Biennial Meeting in Pretoria, South Africa from 6 to 8 June. Led by the Academy of Science of South Africa (ASSAf), the conference will include a symposium on the role of academies of science in fostering human rights and equality. In addition, the meeting on “Building and developing capacity for young STEM students” will give young researchers from disciplines such as science, technology and health a forum to discuss human rights violations. Jutta Gärtner ML, Chairperson of the Human Rights Committee, will participate on behalf of Leopoldina. ■ TP

► Human Rights Committee

## Statement

## Brain organoids as a model system

Brain organoids are tissue structures derived from stem cells, which grow three-dimensionally in vitro, i.e. outside the human body, and imitate certain functions of the brain. As a simplified model system, they enable experimental access to questions surrounding the development and function of the human brain. In the statement “Brain organoids – model systems of the human brain”, published by the German National Academy of Sciences Leopoldina, scientists examine the opportunities to be found in this research area and whether it should be more strictly regulated for ethical or legal reasons. The paper is now available in English. ■ EDS

► Statement “Brain organoids”

## Alliance

## Science-based discussions on animal testing

Due to the current debate on the European citizens’ initiative “Save cruelty-free cosmetics - Commit to a Europe without animal testing”, the Alliance of Science Organisations in Germany calls for a science-based discussion on animal and non-animal approaches in research. While non-animal methods are becoming increasingly powerful for specific applications, for many fields in research and testing suitable non-animal methods are currently not available. A hasty exit from animal research would have considerable effects on health research and healthcare. It would be irresponsible to impede medical advancements by banning methods that are still essential. ■ EDS

► Alliance publication on animal testing

## Infectious diseases beyond COVID-19

Pan-African-German Workshop on future pandemic preparedness



The Pan-African-German workshop on pandemics beyond Corona was characterised by lively discussions and an intensive exchange. Image: Markus Scholz | Leopoldina

Everyone agrees that the COVID-19 pandemic is not the last one of its kind. Therefore, we need to make sure we learn the right lessons so that we can achieve more integrated pandemic preparedness. On the other hand, the focus on COVID-19 has also meant that there has been a reduction in the disease control measures for HIV/AIDS, tuberculosis and malaria – and thus a significant increase in the number of infections and deaths from these diseases.

Both of these aspects were discussed at the Pan-African-German Symposium on 23 and 24 May. The workshop was organised by the Academy of Science of South Africa (ASSAf) and the National Academy of Sciences Leopoldina together with the National Academy of Science and Technology of Senegal (ANSTS) and the Ethiopian Academy of Sciences (EAS).

The latest research results on infectious diseases, pandemic preparedness and One Health were presented and debated at the Max Planck Institute for Infectious Diseases Berlin/Germany. All of the participants agreed on the importance of a cross-sectoral and multidimen-

sional approach to combating pandemics.

A highlight of the two-day symposium was a roundtable discussion at the South African Embassy which included representatives of the German Ministry of Health, the South African pharmaceutical company, The Biovac Institute, and the scientific community, including the microbiologist Ndeye Coumba Toure Kane (Kaolack/Senegal) and the paediatrician Workeabeba Abebe Taye (Addis Ababa/Ethiopia). The public discussion focused on integrated pandemic preparedness on an equal international footing. Here, the ASSAf and Leopoldina also renewed their strategic partnership.

The fourth event in the series on infectious diseases was coordinated for Leopoldina by the immunologist Stefan H. E. Kaufmann ML and the infectious disease epidemiologist Quarraisha Abdool Karim for ASSAf. The event was supported by the German Alliance for Global Health Research (GLOHRA). ■ TP

► Workshop “Infectious Diseases beyond COVID-19”

## In memory of Johann Lorenz Bausch

Friends of the Leopoldina award two fellowships

This year the Johann Lorenz Bausch fellowship will be awarded to two doctoral students: Jin-Woo Choi, graduate student at Princeton University/USA, and Konradin Eigler, doctoral student at the University of Oxford/UK. They are both able to access sources from the Leopoldina archive and library and work at the Center for Science Studies (ZfW).



Jin-Woo Choi.

Image: Markus Scholz | Friends of the Leopoldina Academy

The historian Jin-Woo Choi was a visiting student from March to May. He focused his studies on the cold European winter of January 1709, which is etched into the collective memory. Choi is investigating what made this particular winter, which was neither the first nor the last of its kind during the “Brief Ice Age” between 1400 and 1800, so unique that it fascinated painters, poets and scientists alike. He was also interested in how this period was regarded in scientific terms, such as in the Leopoldina Journal “Miscellanea curiosa”.



Konradin Eigler.

Image: private

Konradin Eigler will come to the ZfW in the autumn. His research is focused on the history of science in Germany and France between 1780 and 1810. ■ LBE

► Johann Lorenz Bausch Fellowship

## People

### Awards and Honours

■ **Sonja-Verena Albers** ML, Member of the Biochemistry and Biophysics Section, has been admitted to the American Academy of Microbiology (AAM) of the American Society for Microbiology (ASM) (Washington D.C./USA).

■ **Ulrich Christensen** ML, Member of the Earth Sciences Section, has been admitted to the National Academy of Sciences (NAS) (Washington D.C./USA).

■ **Donald B. Dingwell** ML, Member of the Earth Sciences Section, has been admitted as a corresponding Member of the Mexican Academy of Sciences (Academia Mexicana de Ciencias, AMC) (Mexico City/Mexico).

■ **Ben L. Feringa** ML, Member of the Chemistry Section, has been admitted to the National Academy of Sciences (NAS) (Washington D.C./USA).

■ **Huajian Gao** ML, Member of the Engineering Sciences Section, has been admitted as a Member of the Royal Society (London/UK).

■ **Susan M. Gasser** ML, Member of the Human Genetics and Molecular Medicine Section, has been admitted to the National Academy of Sciences (NAS) (Washington D.C./USA).

■ **Sara Anna van de Geer** ML, Member of the Mathematics Section, has been admitted to the National Academy of Sciences (NAS) (Washington D.C./USA).

■ **Gerald H. Haug** ML, Member of the Earth Sciences Section and President of Leopoldina, has been awarded an Honorary Doctorate by the Faculty of Mathematics, Engineering and Science of the University of Heidelberg/Germany. He has also been admitted as a foreign Member of the Royal Society (London/UK).

■ **Peter Hegemann** ML, Member of the Biochemistry and Biophysics Section, has been admitted to the National Academy of Sciences (NAS) (Washington D.C./USA).

■ **Jürgen Janek** ML, Member of the Chemistry Section, has been awarded the IBA Research Award 2023 of the International Battery Materials Association (IBA) (Strongs-

ville/USA).

■ **Jürgen Jost** ML, Member of the Mathematics Section, has been awarded an Honorary Doctorate by the Vietnam Academy of Science and Technology (Ho Chi Minh City/Vietnam).

■ **Frank Jülicher** ML, Member of the Physics Section, has been awarded the “IUPAP Medal for the Physics of Life” by the International Union of Pure and Applied Physics (IUPAP) (Trieste/Italy).

■ **Katalin Karikó** ML, Member of the Human Genetics and Molecular Medicine Section, has been admitted to the National Academy of Medicine (NAM) (Washington D.C./USA). She has also been awarded the Meyenburg Prize 2020/21 by the Meyenburg Foundation at the German Cancer Research Center (DKFZ) (Heidelberg/Germany).

■ **Maria Leptin** ML, Member of the Biochemistry and Biophysics Section, has been admitted to the National Academy of Sciences (NAS) (Washington D.C./USA).

■ **Matthias Mann** ML, Member of the Biochemistry and Biophysics Section, has been awarded the Otto Warburg Medal by the Society for Biochemistry and Molecular Biology (GBM) (Frankfurt am Main/Germany).

■ **Volker Mosbrugger** ML, Member of the Earth Sciences Section, has been awarded the Goethe Plaque by the City of Frankfurt am Main/Germany.

■ **Edvard Moser** ML, Member of the Organismic and Evolutionary Biology Section, has been admitted as a foreign Member of the Royal Society (London/UK).

■ **May-Britt Moser** ML, Member of the Organismic and Evolutionary Biology Section, has been admitted as a foreign Member of the Royal Society (London/UK).

■ **Jane Parker** ML, Member of the Organismic and Evolutionary Biology Section, has been admitted as a Member of the Royal Society (London/UK) and the National Academy of Sciences (NAS) (Washington D.C./USA).

■ **Marina V. Rodnina** ML, Member of the Biochemistry and Biophysics Section, has been admitted to the National Academy of Sciences (NAS) (Washington D.C./USA).

■ **Uğur Şahin** ML, Member of the Human Genetics and Molecular Medicine Section, has been awarded the Meyenburg Prize 2020/21 by the Meyenburg Foundation at the German Cancer Research Center (DKFZ) (Heidelberg/Germany).

■ **Federica Sallusto** ML, Member of the Microbiology and Immunology Section, has been admitted to the National Academy of Sciences (NAS) (Washington D.C./USA).

■ **Bernhard Schölkopf** ML, Member of the Informatics Section, has been awarded the “ACM - AAAI Allen Newell Award” of the Association for Computing Machinery (ACM) (New York City/USA) and the Association for the Advancement of Artificial Intelligence (AAAI) (Washington D.C./USA).

■ **Nicola A. Spaldin** ML, Member of the Chemistry Section, has been awarded the “Gothenburg Lise Meitner Award” of the Gothenburg Physics Centre (GPC) of the Chalmers University of Technology (Gothenburg/Sweden).

■ **Klement Tockner** ML, Member of the Earth Sciences Section, has been awarded the “Frontiers Planet Prize” as “National Champion” by the Frontiers Research Foundation (Lausanne/Switzerland).

■ **Özlem Türeci** ML, Member of the Human Genetics and Molecular Medicine Section, has been awarded the Meyenburg Prize 2020/21 by the Meyenburg Foundation at the German Cancer Research Center (DKFZ) (Heidelberg/Germany).

■ **Rajeev Kumar Varshney** ML, Member of the Agricultural and Nutritional Sciences Section, has been admitted as a Member of the Royal Society (London/UK).

### Deceased members

■ **Kurt Binder** ML | 10 February 1944 to 27 September 2022 | Mainz/Germany | Section: Physics

■ **Hans-Georg Borst** ML | 17 October 1927 to 08 September 2022 | Munich/Germany | Section: Surgery, Orthopaedics and Anaesthesiology

■ **Harald zur Hausen** ML | 11 March 1936 to 18 May 2023 | Heidelberg/Germany | Section: Human Genetics and Molecular Medicine

■ **William Winn Hay** ML | 12 October 1934 to 27 October 2022 | Estes Park/USA | Section: Earth Sciences

■ **Theodor Hiepe** ML | 03 July 1929 to 02 September 2022 | Berlin/Germany | Section: Veterinary Medicine

■ **Johannes Klammt** ML | 27 June 1936 to 14 November 2022 | Schwerin/Germany | Section: Ophthalmology, Oto-Rhino-Laryngology, Stomatology

■ **Helmut Moritz** ML | 01 November 1933 to 21 October 2022 | Graz/Austria | Section: Earth Sciences

■ **Lars-Göran Nilsson** ML | 14 July 1944 to 27 November 2022 | Stockholm/Sweden | Section: Psychology and Cognitive Sciences

■ **Dieter Oesterhelt** ML | 10 November 1940 to 28 November 2022 | Martinsried/Germany | Section: Biochemistry and Biophysics

■ **Martin Röllinghoff** ML | 01 April 1941 to 22 November 2022 | Erlangen/Germany | Section: Microbiology and Immunology

■ **Peter J. Roquette** ML | 08 October 1927 to 24 February 2023 | Heidelberg/Germany | Section: Mathematics

■ **Vladimir A. Shuvalov** ML | 13 October 1943 to 08 January 2022 | Pushchino-na-Oka/Russia | Section: Organismic and Evolutionary Biology

■ **Lucas Andrew Staehelin** ML | 10 February 1939 to 28 September 2022 | Boulder/USA | Section: Genetics/Molecular Biology and Cell Biology

■ **Dieter Stöfler** ML | 23 May 1939 to 05 April 2023 | Berlin/Germany | Section: Earth Sciences

■ **Jacques Tits** ML | 12 August 1930 to 05 December 2021 | Paris/France | Section: Mathematics

■ **Malte E. Wigand** ML | 18 August 1931 to 22 February 2023 | Nuremberg/Germany | Section: Ophthalmology, Oto-Rhino-Laryngology, Stomatology

### New class II members

■ **Martin Beck** ML, Frankfurt am Main/Germany, Max Planck Institute for Biophysics, Section: Biochemistry and Biophysics



■ **Agnieszka Chacinska** ML, Warsaw/Poland, International Institute of Molecular Mechanisms and Machines, Polish Academy of Sciences, Section: Biochemistry and Biophysics

■ **Petra Dersch** ML, Münster/Germany, Westphalian Wilhelm University of Münster, Section: Microbiology and Immunology

■ **Karl-Josef Dietz** ML, Bielefeld/Germany, University of Bielefeld, Section: Organismic and Evolutionary Biology

■ **Nico Eisenhauer** ML, Leipzig/Germany, German Centre for Integrative Biodiversity Research (iDiv) Halle-Jena-Leipzig, Section: Agricultural and Nutritional Sciences

■ **Tobias J. Erb** ML, Marburg/Germany, Max Planck Institute for Terrestrial Microbiology, Section: Microbiology and Immunology

■ **Christa E. Müller** ML, Bonn/Germany, Rhenish Friedrich Wilhelm University of Bonn, Section: Physiology and Pharmacology/Toxicology

■ **Andrea Musacchio** ML, Dortmund/Germany, Max Planck Institute for Molecular Physiology, Section: Biochemistry and Biophysics

■ **Annette Oxenius** ML, Zurich/Switzerland, Swiss Federal Institute of Technology Zurich, Section: Microbiology and Immunology

■ **Linda Partridge** ML, Cologne/Germany, Max Planck Institute for Biology of Ageing, Section: Genetics/Molecular Biology and Cell Biology

■ **Uta Paszkowski** ML, Cambridge/UK, University of Cambridge, Section: Organismic and Evolutionary Biology

■ **Christoph Plass** ML, Heidelberg/Germany, German Cancer Research Center at the Helmholtz Association, Section: Human Genetics and Molecular Medicine

■ **Mikael Simons** ML, Munich/Germany, Technical University of Munich, Section: Human Genetics and Molecular Medicine

■ **Tanja Stadler** ML, Basel/Switzerland, Swiss Federal Institute of Technology Zurich: Section Organismic and Evolutionary Biology

■ **Maria-Elena Torres-Padilla** Munich/Germany,

Helmholtz Center Munich, Section: Human Genetics and Molecular Medicine

■ **Eric J. Warrant** ML, Lund/Sweden, Lund University, Section: Organismic and Evolutionary Biology

■ **Christian Wolfrum** ML, Schwerzenbach/Switzerland, Swiss Federal Institute of Technology Zurich, Section: Physiology and Pharmacology/Toxicology

#### New class IV members

■ **Xuetao Li** ML, Peking/China, Beijing Foreign Studies University, Section: History of Science and Medicine

## Imprint

**German National Academy of Sciences Leopoldina**  
 Jägerberg 1  
 06108 Halle (Saale)  
 phone: +49-345/4 72 39 – 800  
 telefax: +49-345/4 72 39 – 809  
 e-Mail: presse@leopoldina.org

#### Editing (EDS):

Caroline Wichmann (responsible for the content pursuant to § 55 Para. 2 RStV)  
 PD Dr Stefan Artmann  
 Daniela Weber  
 Julia Klabuhn  
 Lisa Osterburg

#### Other editors of this issue:

Luise Beddies, Assistant of the Centre for Science Studies (LBE)  
 Lucian Brujan, Senior Officer, Department International Relations (LB)  
 Benjamin Haerdle, Freelance Writer, Leipzig (BJH)  
 Dr Kathrin Kraller, Scientific Officer, Department International Relations (KK)  
 Olga Kühn, Trainee, Department Press and Public Relations (OK)  
 Dr Thomas Plötze, Scientific Officer, Department International Relations (TP)  
 Christian Weidlich, Scientific Officer, Department International Relations (CHW)  
 Dr Sebastian Wetterich, Scientific Officer, Department International Relations (SWE)

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#### Abbreviations:

ML = Member of the Leopoldina