



Leopoldina  
Nationale Akademie  
der Wissenschaften

# Leopoldina news

6 | 2017

Deutsche Akademie der Naturforscher Leopoldina –  
German National Academy of Sciences

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# Editorial

Dear members and friends  
of the Leopoldina,



The academy can look back on an eventful year with diverse topics. I would like to emphasise some of them as examples.

Statements and discussion papers covered fundamental questions that required in-depth scientific advice. For example, one statement called for a broader base for evolution biology in education.

The debate on responsible handling of new ways to change the genetic material was actively shaped by the Leopoldina through publications and events and was a key topic of this year's annual meeting. The recently published discussion paper "A reproductive medical act for Germany", whose authors believe that the legal provisions in this area are in urgent need of reform, has seen a strong and constant response (see the interview opposite).

How society changes with digitalisation was a key topic this year, as was whether science should make greater efforts to enter into a trusting dialogue with people, to promote the acceptance of scientific findings.

At an international level, the scientific academies of the G20 states, headed up by Leopoldina, brought improving the global healthcare provision onto the agenda at this year's G20 summit in Hamburg. Moreover, the international cooperation was enhanced with effective stimuli in the Western Balkan process and also with many symposia with partner academies.

Together with future questions, these topics will be a challenge and motivation for the academy in the next year.

*Y. J. R. L.*

## A reproductive medicine act for Germany

Interview with Claudia Wiesemann, German Ethics Council



*Claudia Wiesemann is the Director of the Institute for Ethics and History of Medicine at University Medical Center Göttingen, and Deputy Chairperson of the German Ethics Council. Her research interests include reproductive medicine in Germany.*

Photo: German Ethics Council, Fotografier: Reiner Zensen

*In October 2017, a group of experts from Leopoldina presented a discussion paper entitled "A reproductive medicine act for Germany" calling for a new legal regulation of reproductive medicine. Prof. Dr Claudia Wiesemann is one of the co-authors and explains the situation in an interview.*

*Ms Wiesemann, you co-wrote the Leopoldina discussion paper for a reproductive medicine act in Germany. What was the impetus for this?*

**Claudia Wiesemann:** We were repeatedly confronted with the fact that the current provisions of the reproductive medicine act are in need of reform, as the embryo protection act only incorporates some of the reproductive technologies that are now possible, and governs others insufficiently. Reproductive medical experts and the couples affected often operate in legal grey areas. That is highly unsatisfactory.

*The embryo protection act is from 1990.*

**Wiesemann:** The law is almost 30 years old, society has changed significantly since then. The views on what makes up a family have changed. Reproductive

medicine methods have changed. We have a better impression of the medical and social consequences of these technologies and evaluate them differently today than we did previously. The law is simply outdated in several aspects.

*Which major areas should the reproductive medicine act govern?*

**Wiesemann:** The definition of the embryo, on which the embryo protection act is based, should be updated, as it is based on obsolete concepts of cell biological and molecular genetic processes of fertilisation and the early embryonic development. Provisions intended to protect the embryo in vitro have an adverse effect on the embryo during the pregnancy. For example, there is a higher rate of multiple pregnancies in Germany, as two or three embryos are often transferred. That entails a higher risk of premature delivery. By contrast, countries like England or Sweden use the technology of transferring only one selected embryo, that which has developed best and can therefore significantly reduce the rate of multiple pregnancies.

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*Donating sperm cells is permitted, egg cell donation is prohibited. Why should that change?*

**Wiesemann:** It was suspected that the so-called split motherhood would result in special and significant identity problems for the child. However, according to empirical studies, that is not the case.

In this context, egg cell donation is not fundamentally different from sperm donation, which is permitted. This unequal treatment of women and men is no longer acceptable.

*The legal aspects for social freezing are virtually unclarified – a new trend in which egg cells are frozen in reproductive medical centres.*

**Wiesemann:** Social freezing is not currently subject to legal provisions. That is unsatisfactory, as certain standards must be complied with. In the interest of the woman, the couple and the future child, regulations are needed to govern how long these gametes can be frozen and what is to happen to the egg cells when the woman

no longer needs them.

*How was the discussion paper received by the public?*

**Wiesemann:** The response was great, the press took the topic very seriously. The interest groups also welcomed our initiative. That is important as childless couples are unwilling to go public. They do not want to share such intimate information on themselves, and protect their partner and child. People who turn to reproductive medicine are still stigmatised. They are sometimes assumed to be using such techniques unscrupulously, as it were. And yet most want ethically correct solutions.

*Politics has a problem with the topic. Why?*

**Wiesemann:** It is about two very fundamental questions: How do we handle the embryo in vitro? The topic of human dignity plays an important role. The other question is which forms of family are to be promoted in society. Both problems involve fundamental problems that must be

discussed openly.

*What are the next steps of the working group?*

**Wiesemann:** We are currently preparing a statement which goes into greater detail on the topics only mentioned in the discussion paper. It analyses the social and reproductive medical development in recent decades, reveals shocking deficits in regulation and describes the ethical and legal problems that result for the stakeholders. This will lead to the recommendations for a reproductive medicine act.

*What do you want from politics?*

**Wiesemann:** It would be important if the parties in the coalition agreement jointly undertook to tackle a reproductive medicine act to find a remedy for the cur-

■ DISCUSSION PAPER REPRODUCTIVE MEDICINE (GERMAN)

BENJAMIN HAERDL INTERVIEWED CLAUDIA WIESEMANN

## Global Young Academy plans activities

This GYA Executive Committee (EC) in early October at Leopoldina was about a mentoring programme for refugee and endangered young scientists, which the Global Young Academy (GYA) is currently developing based on the initiative of some of its members together with a series of partners. The Academy also plans to publish white papers on biodiversity and the availability of Open Research Software in the coming months. In addition, the GYA will also continue to support its constantly growing global network of national young academies and expand its Science Leadership Programmes in Asia and Africa, which have been very successful to date. And in the flagship project Global State of Young Scientists, the interview phase will start soon in 14 African countries. The two Co-Chairs of GYA and nine more EC members used this only personal meeting of their one-year term of office to consult the GYA Advisory Board virtually. At a Networking Dinner with representatives from state and national politics, initial ideas were developed for the anniversary meeting planned for 2019 in Halle (Saale). (amg)



*The Executive Committee of the Global Young Academy met at Leopoldina to discuss future activities.*

Photo: GYA

## Trust in sciences

### Leopoldina lecture and symposium of Class IV - Humanities, Social and Behavioural Sciences

This year's Class IV symposium in mid-November focused on the topic "Trust in the sciences". Prof. Dr Andreas Diekmann ML, Provisional Spokesman of Class IV, hosted the event together with the Secretary of Class IV, Prof. Dr Frank Rösler ML.

In the Leopoldina lecture on the previous evening, Prof. Dr Martin Weber ML (Mannheim/Germany) asked "Can we trust our own expectations for investments on the stock exchange? Financial perspectives on the decision-making behaviour of investors." Before an investor invests in an asset, they generally form an expectation of the development of its value. Studies prove that the formation of this expectation can be influenced. If we ask how the rate or return on an asset will develop, investors are more optimistic with regard to the profit development. By contrast, with visual information on the past value development, investors reacted more pessimistically to profit charts than to price charts. According to Weber, an understanding of the risk among investors is more difficult. Visual representations are more intuitive than descriptions. People should know that when reading up on investments. The investor's own personality profile is also relevant; people who make their decisions more intuitively appear to be at a disadvantage here.

The symposium on the following day opened with the presentation "Can we trust scientific findings blindly" by Prof. Dr Wolfgang Stroebe ML (Utrecht/Netherlands). The answer was a clear no, but for different reasons. Fraud rarely occurs, but more frequently in medicine than in other sectors. Manufacturer-financed studies demonstrably assess the effectiveness and safety of drugs four times more positively than neutrally financed studies. Certain indicators for evaluating scientific achievements can also favour questionable research practices.

In his presentation "Mistakes, manipulations, falsifications and what you can do to prevent a loss of trust", Prof. Dr Andreas Diekmann ML (Zurich/Switzerland) distinguished between systemic mistakes on the one hand and falsifications on the other hand. Systemic mistakes are the result of methodological errors. Typical



falsifications include image falsifications in biomedicine or manipulation of statistics in behavioural sciences, for example. Diekmann presented the Newcomb-Benford Law of numerical distribution as a method that makes it easier to discover data manipulation. However, replication tests are the most important tool for combating mistakes, as replication already reduces the error rate significantly.

In his presentation "Trust in science and control by science? Chemopolitics in modern industrial societies", Prof. Dr Carsten Reinhardt ML (Bielefeld/Germany) spoke about the interaction of science, politics and the industry in regulating chemicals. He presented the DFG Senate Commission which investigates harmful working materials, founded in 1955 and whose members represent science, industry and authorities, as a successful ex-

ample. The Commission has an advisory function and publishes thresholds based on which politicians can make decisions.

The symposium closed with a presentation on "Trust and legal sciences – Who believes legal experts?" by Prof. Dr Christine Windbichler ML (Berlin/Germany). There is a general trust in law, when it confirms everyday convictions. However, the law is sometimes overestimated, for example when it comes to the effect of the threat of punishment. Legal science only analyses, without the pressure of making a binding decision. For example, its success is measured based on whether its results played a role in producing laws or judgments. While the question of trust in legal science is therefore rarely posed, the trust in law largely depends on extra-legal circumstances.

(cbr)

## Research on IT technologies must consider potential risks

### Workshop of the Joint Committee of DFG and Leopoldina

At the end of October, a workshop of the Joint Committee on dealing with security-relevant research of the German Research Foundation (DFG) and Leopoldina, focused on the topic “Freedom and responsibility in the IT sciences”. The meeting in Darmstadt was intended in particular to raise awareness among the scientific community and its immediate environment.

Using the latest information technologies often appears to be the obvious choice. However, potential abuse, for example through targeted influencing of consumer behaviour or selective opinion formation, is not always immediately apparent.

But who bears the responsibility in the event of unintentionally harmful use or even intentional abuse? Must researchers be held accountable? Do any abuse risks have to be considered already when selecting research topics? Or can science and research funding reject the blame

for harmful use of their findings entirely? The workshop approached these questions from various perspectives.

The first session focused on various IT research areas. For example, Prof. Dr Wolfram Burgard ML (Freiburg/Germany) highlighted robotics and presented peaceful use of autonomous intelligent systems and risks of abuse in the military sector in detail. In the second session, Prof. Dr Petra Grimm (Stuttgart/Germany) spoke about social values, responsibility and privacy in the digital age. Prof. Dr Judith Simon (Hamburg/Germany) then outlined the pathways to ethics in information technology and broke them down based on the example of big data and artificial intelligence.

In the subsequent panel discussion, Prof. Dr Wolf-Dieter Lukas from the German Federal Ministry of Education and Research gave an insight into the set of values at a political and ministerial level.

(yb)

## Making science visible

For many years, Leopoldina has supported the STS Forum held annually in Kyoto with the objective of making the role of science and technology for the overall social development publicly visible. This year, Leopoldina President Jörg Hacker ML, who is also a member of the Advisory Board of the STS Forum, took part in a plenary session led by Nobel Prize winner Richard J. Roberts on “Delivering Health Care to the World”. In his presentation, he highlighted the significance of the political and social advisory work of academies on the example of increasing antimicrobial resistances and the spread of tropical diseases. He referred in particular to the advisory work of the Academies at the Summit of Heads of Government and State of the G7 States and the “Science20” initiative headed up by Leopoldina, whose recommendations are reflected in the final communiqué of the G20 summit. (rn)

## The biology of ageing

In the Leopoldina symposium “Molecular Biology of Ageing – Sino-German Perspectives” Chinese and German researchers discussed the latest findings of molecular biology ageing research in October in Berlin. Ulrich Hartl ML (Munich/Germany), Michael Hengartner ML (Zurich/Switzerland) and Ursula Staudinger ML (New York/USA) were responsible for the scientific concept. Representatives of the Chinese Academy of Sciences, the Chinese Academy of Technical Sciences and the Beijing Genomics Institute also spoke. The improved health in old age today gives people and societies new opportunities. In spite of this, age remains a risk factor for diseases. However, new analytical methods allow us to investigate the interaction between genetic composition and environmental influences. Whether a certain epigenetic adaptation is the cause or already a compensatory reaction to other influences is the subject of much discussion. (kp)

## New German-Russian roadmap for bilateral cooperation from 2018 to 2028

High-ranking representatives from German and Russian higher education, research and innovation met in Berlin in early November. The get-together was a milestone on the way to a common roadmap that is to be passed as a framework for the future bilateral cooperation in mid-2018.

The basic structure created for this in a bottom-up process, incorporates the development of research infrastructures, identification of a joint research agenda, investments in young scientists and higher bilateral mobility, and promotion of formats between society, science and innovation as its main focuses.

Leopoldina President Prof. Dr Jörg Hacker ML emphasised the necessity of

forward-looking steps, and named the combination of existing and the development of new mobility instruments under the umbrella of a programme like Erasmus as an example. Many voices from the German and Russian leadership level point out that a new generation of management personalities are working together in established formats and must create mutual trust.

As an initial activity, the foundation of a “German-Russian Coordination Council for Young Scientists and Innovators” was noted. Together with the Russian Academy of Sciences and the Presidential Administration of the Russian Federation, Leopoldina will start making specific plans this year. (lb)

# How machines learn

Common symposium in Seoul



Machine learning and artificial intelligence were the subject on the symposium organised by Leopoldina and the South Korean Academy of Sciences (KAST).

Photo: KAST

As part of the strategic partnership with the Korean Academy of Science and Technology (KAST), Leopoldina and KAST organised a symposium on machine learning and artificial intelligence on 19 and 20 October 2017. In preparation for the conference, KAST arranged visits to the Samsung Software Research Center and Naver, the Korean counterpart of Google, which is extremely successful in Asia. This was not just about company visits. Employees presented recent work based on machine learning and thus demonstrated the range of application options and discussed them with the German experts.

At the symposium, Korean and German scientists pre-

sented recent projects from fundamental research in this highly-interdisciplinary research area. Another focus was on the varied application options of “Modern

Machine Learning” and “Artificial Intelligence”, for example in the neurosciences, physics, biology or medicine.

A panel discussion on effects and consequences of rapid developments in both research areas on or for society and the industry closed the event, prepared under scientific leadership of Prof. Dr Klaus-Robert Müller ML (Berlin/Germany), Leopoldina Executive Committee Member Prof. Dr Thomas Lengauer ML (Saarbrücken/Germany) and KAST Vice-President Prof. Dr Sukhan Lee (Seoul/ South Korea).

(rn)

## MEMORANDUM EXTENDED

The cooperation of KAST and Leopoldina is based on a “Memorandum of Understanding”, concluded in 2012 for a period of five years. As part of an official ceremony at the end of the joint symposium in October 2017, Prof. Dr Sigmar Wittig ML signed an addendum to the existing cooperation on behalf of the Leopoldina President, agreeing to extend the cooperation by a further five years. In doing so, the two academies recognised the very fruitful and reliable cooperation that had developed in recent years. The annual shared symposia form the core of the cooperation. They take place alternately in Germany and Korea, and to date have covered a wide range of topics from regenerative therapies, “assistive robotics” right up to “bio-imaging” – whereby KAST and Leopoldina 2016 contributed to a Korean-German science weeks on the occasion of German President Gauck’s visit to Korea.

(rn)

## Consequences of climate change and raw material mining in the Arctic

7th “Human Rights and Science” symposium in Helsinki

Global warming has had tangible effects on the Arctic and its largely indigenous inhabitants. This is visible in the changes to its natural environment like melting ice caps and disappearing permafrost soil, and extended transport connections and increased flows of tourists to the region. In addition to this, the industrial mining of raw materials in the Arctic has increased in recent years.

These changes and the human rights of the inhabitants of the Arctic were the focus of the 7th “Human Rights and Science” symposium, which took place at the end of September in Helsinki. It was organised by the Human Rights Committee of the Leopoldina and its partner this year, the Council of Finnish Academies. During the symposium, representatives from science, politics and the Sami people who live in northern Finland shared their perspectives. The participants, including the President of the Finnish Sami Parliament, Tiina Sanila-Aikio and the former Finnish Foreign Minister Erkki Tuomioja also analysed the observance of human rights in empirical Arctic research.

The symposium was part of the celebrations of the “100 years of Finland” anniversary and was organised by Prof. Dr Jukka Kekkonen, Council of Finnish Academies, and Dr. Judith Miggelbrink, Leibniz Institute for Regional Geography. The



*Hans-Peter Zenner, Member of Leopoldina and Chairman of the Human Rights Committee of the Academy, opened the 7th symposium.*

Photo: Jari Loisa

next symposium “Human Rights and Science” is taking place in cooperation with the Académie des sciences 2019 in France. (jn)

## EASAC Statement on Homeopathy

Legislation in Europe is not regulated uniformly

In September 2017, the publication of a joint statement on homeopathy by the National Academies of Sciences of the EU Member States, Norway and Switzerland triggered intensive debates in multiple European countries. The central messages of the EASAC statement “Homeopathic Products and Practices: assessing the evidence and ensuring consistency in regulating medical claims in the EU” do not focus on the lack of a scientific base for homeopathy. Instead, it emphasised the inconsistency of European legislation

for medical and homeopathic products. This comes to bear in particular in precise information on contents and verifiability of statements on the effectiveness of products.

Reports were published on the statement in almost all of Europe. The media discussed the problem broadly in the Netherlands, France, Austria and Hungary in particular. (csd)

■ EASAC STATEMENT

## Security in genome editing

During a workshop in Herrenhausen Palace (Hanover/Germany) in early October, experts from over 20 nations discussed “Security aspects of genome editing”. 150 scientists and representatives from government authorities, departments, transnational organisations and civil groups were selected to participate from 450 applications, including representatives of the UN Biological Weapons Convention and the Strategy Department of the Commission President of the European Union. Together, they planned an in-depth evaluation of genome editing with regard to intentional abuse.

The workshop was organised by the Leopoldina, EASAC, InterAcademy Partnership and the US National Academies of Science, Engineering and Medicine with the support of the Volkswagen Foundation. Former President of Leopoldina, Prof. Dr Volker ter Meulen ML initiated the conference as President of IAP. The results will be published in early 2018.

## Leopoldina at the World Science Forum

The Leopoldina made a key contribution to the World Science Forum 2017. The world’s largest international series of conferences on global science policy came together in Jordan in early November. In cooperation with the InterAcademy Partnership IAP, the German Academy was responsible for presenting and discussing a project funded by the German Federal Ministry of Education and Research (BMBF) on global food safety. In turn, in the EASAC network, Leopoldina initiated a discussion on “Science-based political advice in times of alternative facts”.

The World Science Forum is supported by UNESCO and the Hungarian Academy of Sciences. EASAC, the coalition of the EU national academies, and IAP, the global network of over 130 national academies of science and medicine, are among the six other partner organisations of the forum.

(csd)

## People

**Antje Boetius ML** is the new Director of the Alfred Wegener Institute in Bremerhaven, Helmholtz Centre for Polar and Marine Research (AWI). The Marine biologist from the University of Bremen follows Katrin Luchte, who had headed up the Institute since 2007.

**Horst Bredekamp ML**, Professor of Art History at Humboldt University Berlin, was presented with the Schiller Award of the City of Marbach on the Neckar. The award, first presented on Friedrich Schiller's 200th birthday in 1959 recognises contributions in the field of regional studies of Württemberg. In particular, scientists whose work revolves around the ethically responsible definition of freedom of the poet Friedrich Schiller are considered for the award.

**Andreas von Deimling ML**, Medical Director of the Department of Neuropathology at Heidelberg University Medical Centre and Head of the Clinical Cooperation Unit for Neuropathology at the German Cancer Research Centre (DKFZ) was recognised with the Fred W. Stewart Award of the Memorial Sloan Kettering Cancer Center. The prize is presented for special services in the field of diagnosing and caring for cancer patients.

**Klaus Hentschel ML**, professor at the University of Stuttgart, was honoured by the International Union of History and Philosophy of Science and Technology with the Neu Withrow Award for his online database of scientific illustrators. The award is presented to scientists who develop research tools for documenting, managing and analysing sources of the history of science and technology.

Paleontologist **Volker Mosbrugger ML**, Director General of the Senckenberg Nature Research Society was honoured with the 2017 Cultural Award of Hesse. With prize money of € 45,000, the Cultural Award of Hesse, is presented for special achievements in arts, science and cultural education.

**Heiner Niemann ML**, Head of the Institute of Livestock Genetics (ING) of the Friedrich Loeffler Institute, is being honoured for his scientific achievements in modern biotechnology and animal genetics resources. The German Society for Breeding Science (DGfZ) presented Niemann with the Hermann von Nathusius Medal.

Historian **Jürgen Osterhammel ML** from Constance received the Braunschweig Abt Jerusalem Award 2017. The award is presented for outstanding scientific contributions on the dialogue of humanities, natural and technological sciences.

**Felix Otto ML**, Director of the Max Planck Institute for Mathematics in Natural Sciences, was honoured for his outstanding scientific achievements and his contribution to fostering outstanding research and education in Europe by the European Academy of Sciences with the 2017 Blaise Pascal Medal for Mathematics.

Neurophysiologist **Hans-Christian Pape ML** will be the new President of the Alexander von Humboldt foundation from January 2018. In this office, he is succeeding chemist **Helmut Schwarz ML**, who is stepping down after two terms office at the top of the foundation. Pape is Professor at the University of Münster and Chairman of the Scientific Commission of the Scientific Council, among other things.

Molecular biologist and paleogenetic researcher **Svante Pääbo ML**, Director of the Max Planck Institute for Evolutionary Anthropology in Leipzig, is receiving the 2018 Nakasone Award of the Human Frontier Science Program. The Swede is being honoured for his research on the genetic development of early humans.

The Academy of Sciences and Literature in Mainz added **Peter R. Schreiner ML**, Professor of Organic Chemistry at Justus Liebig University Gießen, and Pharmacist **Rolf Müller ML**, Professor of Phar-

maceutical Biotechnology at the University of the Saarland as new members.

The Board of Trustees of the Historical College in Munich awarded the Senior Fellowship for the 39th College Year 2018/19 to **Michael Stolberg ML**. Stolberg's research will be on the topic "Scholar doctors in the 16th century. The world of Georg Handsch (1529–1578)".

Potsdam-based geologist **Manfred Strecker ML** was honoured by the German Geological Society – Geological Association (DGGV) with the Gustav Steinmann Medal. The medal is presented each year to researchers who make special contributions to the geosciences.

Former President of Leopoldina, **Volker Ter Meulen ML**, was elected Co-President of the InterAcademy Partnership (IAP). Ter Meulen already serves as Co-Chairman of the IAP for Science sub-organisation. The IAP is coalition of 100 Academies of the Sciences from around the world, including Leopoldina.

**Ernst-Ludwig Winnacker ML**, Former President of the German Research Foundation (DFG) and Founding Secretary General of the European Research Council (ERC), was added to the Hall of Fame of German Research. Business magazine "Manager Magazin" has been recognising scientists who contribute to advancing research, and thus to making Germany internationally competitive in the future every year since 2009.

Mathematician **Günther M. Ziegler ML**, Professor at the Institute for Mathematics at the Free University of Berlin was recognised with the Berlin Science Award by the Governing Mayor. Among other things, Ziegler received the award for his work in geometry and topology.



## Deceased Members

### ■ Nicolaas Bloembergen ML 11/3/1920- 5/9/2017 | Tucson, USA Physics

Nicolaas Bloembergen was a leading physicist, who was considered a pioneer in particular in the field of laser technologies, and had a key influence on the development of the discipline. He first researched on nuclear resonance spectroscopy and lasers in the microwave range, before working in-depth on the theoretical fundamentals of laser spectroscopy and non-linear optics. For this fundamental work, Bloembergen received the Nobel Prize for Physics in 1981 together with Arthur Schawlow and Kai Siegbahn. Bloembergen lectured at Harvard University for almost 40 years and most recently at the University of Arizona. Nicolaas Bloembergen was named a member of Leopoldina in 1983.

### ■ Hugo Lorenz Obwegeser ML 21/10/1920 - 2/9/2017 | Schwerzenbach, Switzerland Ophthalmology, otorhinolaryngology, stomatology

Hugo Lorenz Obwegeser, a leading mouth, jaw and face surgeon in Europe, headed up the maxillofacial surgery clinic of the University Hospital of Zurich from 1970 to 1987. His pioneering research on corrective surgery in the field of jaw malpositions earned him great recognition, not just in Europe. The retromolar sagittal split method became routine worldwide. In this way, Obwegeser created the foundation for making operations without aesthetically problematic scars standard practice. Obwegeser was a member of Leopoldina since 1979.

### ■ Hellmuth Petsche ML 24/08/1923 - 14/10/2017 | Vienna, Austria Neurosciences

Hellmuth Petsche was a neurologist and neurophysiologist. He studied the creation of electrical brain activity and its relationship to the fine structure of the cerebral

cortex. Via animal experiments, he identified the travelling wave-like synchronisation of electroencephalography (EEG). Petsche then researched the use of EEGs to study and understand cognitive processes, specifically in conjunction with music. From 1963 to 1993 he lectured as a Professor at the University of Vienna and was elected a member of Leopoldina in 1981.

### Konrad Seige ML 27/10/1921 - 15/11/2017| Lieskau Internal medicine and dermatology

Physician Konrad Seige was held in high esteem for his achievements in the area of endocrinology and diabetology. In 1964 he was appointed to the Chair of Internal Medicine at Martin Luther University of Halle-Wittenberg, where he headed up the II Medical Clinic and Polyclinic until his retirement in 1987. With great commitment, he worked to achieve scientific understanding and cooperation worldwide, among other things as President of the International Society of Internal Medicine. Konrad Seige was elected a member of Leopoldina in 1976.

### Hans-Heinrich Voigt ML 18/4/1921- 17/11/2017| Göttingen Physics

Hans-Heinrich Voigt was an outstanding astronomer and astrophysicist, whose work had a great influence on the development of the disciplines. After working in Kiel, California and Hamburg, Voigt headed up the observatory of the University of Göttingen for 23 years. He wrote over 300 scientific publications, among which a memorandum for the German Research Foundation on the status of astronomy in Germany from 1962 was widely recognised, and inspired the foundation of many new research centres. Asteroid number 4378 was named Voigt after him. Hans-Heinrich Voigt became a member of the academy in 1974.

## Leopoldina employees

**Katrin Pulze** began working as a desk officer in the Project Funding Administration department in June.

**Anne Rohloff**, Scientific Coordination in the Young Academy, and **Jacob Schilling**, Project Team Member in the Study Centre, joined in September.

Since November, **Christina Hohlbein** has been part of the secretarial team in the Science-Politics-Society department and **Dr Aleksandra Loewenau** has been Project Coordinator in the Study Centre. **Ramona Oehring** has been working as an assistant in the Press and Public Relations department since November.



**Leopoldina**  
Nationale Akademie  
der Wissenschaften

## Imprint

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**Abbreviations:** ML = Member of the Leopoldina