

## Registration

Please register via e-mail to [events@leibniz-association.eu](mailto:events@leibniz-association.eu) by 21 October 2022.

As a follow-up to the event, scientific experts will be available for one-on-one discussions.

If you would like to meet scientists for one-on-one discussions, please send an e-mail to [events@leibniz-association.eu](mailto:events@leibniz-association.eu). We will be happy to arrange an individual session for you.

Science in dialogue  
“The future of Life Science  
research in Europe –  
how animal and non-animal  
approaches can contribute”

25 Oct 2022  
09:30–12:00  
Webex video conference

The event is endorsed by



Hosted by

Allianz der  
Wissenschaftsorganisationen



# Programme

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Welcome note

**André LE BIVIC**

Vice President of AVIESAN

## Introductory talks

**“Development of the normal and pathological brain in a dish and animal models”**

**Alessandra PIERANI**

Institute of Psychiatry and Neuroscience of Paris, Imagine Institute, CNRS-INSERM-Université Paris Cité

**“Transitioning to animal-free innovations in toxicology”**

**Juliette LEGLER**

Division of Toxicology at the Institute for Risk Assessment Sciences, Utrecht University

**“Why we need animal models to combat a pandemic”**

**Ulrike PROTZER**

Institute of Virology, Technical University Munich and Helmholtz Munich

## Science in dialogue

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Panel discussion in exchange with audience

**Johannes BECKERS**

Institute of Experimental Genetics, Helmholtz Munich

**Herwig GRIMM**

Unit of Ethics and Human-Animal Studies, University of Veterinary Medicine, Vienna and Medical University, Vienna and University Vienna

**Serge PICAUD**

Vision Institute, Sorbonne Université-INSERM-CNRS, Paris

**Jan Bas PRINS**

Biological Research Facility, The Francis Crick Institute and Leiden University

Moderator

**Maryline FIASCHI**

Science | Business



## Johannes BECKERS

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Institute of Experimental Genetics, Helmholtz Munich

### Short Bio

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Understanding the conditions and mechanisms that allow us to reverse the epigenetic inheritance of acquired diabetes and obesity from one generation to the next is at the core of the research that is done in Johannes Beckers' group. To address this question, he uses the mouse as model system for metabolic diseases in man. Studying of intergenerational inheritance, so far, requires organismal work that cannot be replaced by in vitro or in silico models. His finding that obesity and diabetes due to over-feeding impacts on the metabolic health of the progeny, has opened the very recent field of epigenetic intergenerational epigenetics. Johannes' research is driven by the aim to understand how this inheritance contributes to the worldwide pandemic of diabetes and obesity and how it can be reversed by applying specific treatments.

Johannes joined Helmholtz Munich as group leader in 2000 and a few years later he also became Professor at the Technical University Munich. He teaches genetics and developmental biology of animals. Before he came to Helmholtz Munich, he was postdoc at the Jackson Laboratory where he worked on the Delta1 gene and its function during embryonic development in the group of Prof. Achim Gossler. He received his PhD in biology from the University of Geneva where he studied gene regulation in the HOXD complex in the institute of Prof. Denis Duboule. Before that he studied biology at the Ruprecht-Karls University Heidelberg and received his diploma for his work on the regulation of the human C-reactive protein in transgenic mice in the group of Prof. Ulrich Rütger at the EMBL Heidelberg.

Recently he also got a degree as Executive MBA in communication and leadership by the Technical University Munich.



Communicating to the public about the conditions under which animal experiments are performed in research is of great concern for him. Knowledge we have from animals still changes our conception of the world and saves the lives of millions of people every year.

### Personal Key Statement

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Basic research also using animals has shaped and still continues to change our conception of the world. From the understanding that every human being is created from sperm and egg just about 200 years ago, the use of analgesics and anaesthetics in medicine, to the recent development of Covid-19 vaccines, we have always built upon knowledge from animal research. A recent example for the impact of basic animal research on our world-view is the observation that environmental factors like trauma and nutrition affect the health of our offspring via epigenetic mechanisms.

## Herwig GRIMM

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Unit of Ethics and Human-Animal Studies, University of Veterinary Medicine, Vienna and Medical University, Vienna and University Vienna

### Short Bio

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Herwig Grimm studied philosophy at the Universities of Salzburg, Zurich and Munich, main emphasis on ethics and applied ethics. In 2004 he earned his Master's degree in Salzburg. From 2004 to 2011 he was a scientific assistant at the interdisciplinary Institute for Technology, Theology and Natural sciences in Munich. He took his doctoral degree at the Munich School of Philosophy.

From 2011 he has been a professor and the head of the unit "Ethics and Human-Animal-Studies" at the Messerli Research Institute of the University of Veterinary Medicine, Vienna, the Medical University of Vienna and the University of Vienna and Honorary Professor for "Ethics and Human-Animal Relations" at the University Vienna.

Since 2021 he has been president of the steering committee of the National Research Programm 79 "Advancing 3Rs: Research, Animals and Society" of the Swiss National Science Fund.

His main research interests are: Applied animal ethics, veterinary ethics, animal research ethics, methods in applied moral philosophy.



### Personal Key Statement

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Animal research ethics provides an important basis for reflecting the value of knowledge and knowledge production in our societies. Particularly, gaining knowledge at the cost of animals' harm raises questions regarding our responsibility towards animals on the one side and academic freedom on the other. Finding ways to balance the value of animal protection and knowledge will be key to the future of life sciences.

## Juliette LEGLER

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Division of Toxicology at the Institute for Risk Assessment Sciences, Utrecht University

### Short Bio

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Juliette Legler is Chair of Toxicology at the Institute for Risk Assessment Sciences, and Head of the Department of Population Health Sciences, Faculty of Veterinary Medicine, Utrecht University.

Prof. Legler is a European Registered Toxicologist and was President of the Netherlands Society of Toxicology from 2019-2022. From 2016-2017, she led the Environment and Health Theme within the Institute for Environment, Health and Societies at Brunel University London. From 2001-2015, she was employed at the Institute for Environmental Studies, VU University Amsterdam, where she was appointed full professor in 2013.

Her research focusses on understanding how exposure to environmental contaminants affects human and environmental health, and she develops innovative, alternative methodologies to predict and prevent harmful exposures. Prof. Legler is also a dedicated educator, and has developed and coordinated educational activities in (environmental) toxicology, chemistry and development biology at the undergraduate and (post)graduate level. Since 2018, she is director of Utrecht University's Graduate School of Life Sciences 'Toxicology and Environmental Health' programme. In 2018 she was awarded the Poulsson Award from the Norwegian Society of Pharmacology and Toxicology. Her detailed CV and list of publications can be found at <https://www.uu.nl/staff/JLegler>.



### Personal Key Statement

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A major focus of toxicology is to unravel potential adverse effects of exposure to chemicals on human health, to ensure the safe use of chemicals and a 'toxic-free environment'. Toxicity testing uses about one third of all laboratory animals world-wide. A transition is underway in toxicology, the so-called 'next generation risk assessment' which moves away from animal data as the 'gold standard' towards a mechanism-based approach using human biology as a starting point. The ongoing scientific challenge is to harvest the promise of technological innovations in data science and human disease modelling to better predict toxicity, and to move away from our animal-centric chemical assessment paradigm while ensuring safety and acceptance by all stakeholders in society.

## Serge PICAUD

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Vision Institute, Sorbonne Université-INSERM-CNRS, Paris

### Short Bio

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Serge Picaud is the Director of the Paris Vision Institute since January 1st, 2021. His team has developed ex vivo models from the porcine retina such as purified and cultured cone photoreceptors or retinal explants respecting the tissue architecture. However, his translational research has also required animal experimentation on rodents and non-human primates.

After investigating the mechanisms of vision and understanding the retinal toxicity of the antiepileptic drug vigabatrin, his research focus has moved the last ten years on the restoration of vision for blind patients. This objective has included the test of novel materials for electrodes like Graphene and Diamond or modelling the retinal information processing taking advantages of event-based camera. In a successful translation to the clinic, his team has validated a photovoltaic and wireless retinal prosthesis both ex vivo and in vivo on the primate retina, paving the way for clinical trials in patients affected by age-related macular degeneration. As an alternative to retinal prosthesis, optogenetic therapy was evaluated on rodents and primates, opening the path toward clinical trials on blind patients affected by retinitis pigmentosa with a recovery of some visual performances.

The team is now moving toward visual restoration at the level of the visual cortex for patients with optic neuropathies like glaucoma, the second cause of blindness, or diabetic retinopathy, the first cause of blindness before the age of 50.



### Personal Key Statement

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At the Paris Vision Institute, we investigate how we see, we search to prevent ocular diseases leading to impaired vision and/or blindness, and finally, we develop strategies to restore some sight in blind patients. Several therapies and strategies for restoring vision are in clinical trials with very impressive results for gene therapy, cell therapy, retinal prosthesis and optogenetic therapy. These successes relies on a continuum of techniques from screening on cell cultures, induced pluripotent stem cells or disease modeling in animals.

## Alessandra PIERANI

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Imagine Institute and Institute of Psychiatry and Neurosciences of Paris, France

### Short Bio

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Alessandra Pierani is Director of Research at the National Center for Scientific Research (CNRS). She heads the team "Genetics and Development of the Cerebral Cortex" with a dual affiliation at the Imagine Institute (Hôpital Necker, Paris) and the Institute of Psychiatry and Neurosciences of Paris (Hôpital St Anne, Paris) (France). Her research focuses on the role of transient neurons in cerebral cortex development, evolution and pathology.

She obtained two PhDs in Biology at the Univ. of Florence (1986) and Univ. of Paris XI (1994) and trained first as a molecular biologist and biochemist at the Rockefeller Univ. (New York). She then began her work on neural development at the Institut Curie (Orsay) and pursued it at Columbia Univ. (New York) and the Ecole Normale Supérieure (Paris). 2006- 2017 she was a group leader at the Institut Jacques Monod in Paris. She was awarded the Foulon Prize of the French Academy of Science (2012).



### Personal Key Statement

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Abnormal brain development is the cause of multiple pathologies in humans. I will discuss how in vitro and in vivo scientific studies can contribute to the understanding of the molecular mechanisms underlying the construction of a functional and dysfunctional brain, their advantages and limitations. In vitro studies can at their best recapitulate aspects of what a brick can do independently on others, however not complex interactions with their neighbors that is the essence of living organisms.

## Jan Bas PRINS

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Biological Research Facility, The Francis Crick Institute and Leiden University

### Short Bio

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Jan-Bas Prins is the Director of the Biological Research Facility of the Francis Crick Institute, London, and Professor of Laboratory Animal Science at Leiden University in the Netherlands and Honorary Professor of University College London. He did his PhD in Laboratory Animal Science with Professor Van Zutphen at the University of Utrecht. After post-doctoral projects at the University of Oxford, UK, and the Erasmus University, Rotterdam, The Netherlands, he became the head of the pre-clinical division of the Department of Pulmonary Medicine at the Erasmus Medical Centre. In 2002, he moved on taking the position of Director of the Central Animal Facility of the Leiden University Medical Centre in the Netherlands. In 2018, he took up the position at the Francis Crick Institute. He is a former President of FELASA.

He is a member of the Netherlands National Committee for the protection of animals used for scientific purposes, Chairman of Laboratory Animals Ltd, member of the Scientific Committee of the Fondazione Guido Bernardini on Education and Training in Laboratory Animal Science, Vice-President of the Institute of Animal Technology, and an AAALAC ad hoc specialist.



### Personal Key Statement

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Towards animal free research: dare to be bold and ambitious, be realistic and factual, don't overpromise.



## Ulrike PROTZER

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Institute of Virology, Technical University Munich  
and Helmholtz Munich

### Short Bio

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Ulrike Protzer is an expert virologist with many years of research in molecular virology, virus-host interaction and immunology. Ulrike studied medicine in Germany, South Africa and Switzerland. She has a strong background in infectious diseases, hepatology and medical virology obtained during her clinical training, and has passed board exams in Internal Medicine as well as in Microbiology and Virology.

Since 2007, Ulrike Protzer is director of the Institutes of Virology at Helmholtz Munich and at the Technical University of Munich (TUM) and holds the Chair of Virology. Focusing on the promotion of young scientists, she serves as vice dean of the School of Medicine.

2011-2018 she was member of the founding executive board of the German Center for Infection Research. Currently, she is leading several national and international research consortia and serves in numerous advisory and supervisory boards.

Her scientific efforts focus on understanding the interaction between viruses and their human hosts and on translating this knowledge into novel therapeutic approaches. Hereby, she focusses on the hepatitis B virus killing >880.000 humans every year and most recently on the new SARS-Coronavirus. Her group is exploiting vaccines and immune therapies to reconstitute HBV-specific immunity and finally cure HBV, and performs a number of clinical studies on the effect of SARS-CoV-2 infection and COVID-19 vaccines.



### Personal Key Statement

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- Animal experiments need to be strictly justified
- But animal models are needed to understand processes in our body involving complex interactions such as an immune response or how our brain is working
- And animal models are essential to develop new drugs and vaccines