Thursday, October 16

Keynote Lecture

October 16 | 08:30–09:15 | Guobin Hall

KL01: 50 Years of Immunotoxicology: Past, Present and Future

- *Marc Pallardy, Department of Toxicology, Faculty of Pharmacy, University of Paris-Saclay, France*

Abstract:

Immunotoxicology is a discipline that studies the interactions between chemical, physical or biological substances and the immune system. Where does the term "Immunotoxicology" come from? It is commonly accepted that the origin of taking-into-account the effects on the immune system linked to exposure to environmental products is a publication from the RIVM at the end of the 1970s (Vos JG. CRC Crit Rev Toxicol. 1977). This publication primarily concerned immunosuppression and its possible consequences on human health. As a result, the bulk of research for many years concerned understanding the mechanisms of immunosuppression to environmental pollutants (dioxin, PCB, HPA, etc.) and developing assessment models. However, it is only very recently that exposure to environmental products has been linked to measurable effects on human health with PFAS and upper airborne infections but also the recent classification of PFOA in Group 1 of the IARC classification of carcinogens, partly linked to its immunosuppressive mechanisms.

But the understanding of immunity, the discovery of cytokines/chemokines and their production in recombinant form, the culture of immune cells, and the identification of numerous immune cells using monoclonal antibodies have made possible to address other aspects of immunotoxicology. This is the case for allergy mechanisms with the emergence of the pi-concept developed by W. Pichler and the identification of T lymphocytes recognizing small molecules such as beta-lactams. But understanding immunotoxic effects over time is also achieved through accidents or side effects linked to the use of products that modulate immunity: therapeutic antibodies and "cytokine release" "immune checkpoint inhibitors" and "autoimmune" diseases. Recent advances in research have finally made possible to identify the “Key Characteristics” that allow the identification of an immunotoxic product and also to define an AOP (Adverse Outcome Pathway) for skin allergy following exposure to chemical products.

October 16 | 09:15–10:00 | Guobin Hall

KL02: Nanotoxicology: Expanding the Cognitive Boundaries of Classical Toxicology

- *Yuliang Zhao, Institute of Nanotechnology And Intelligence (inAI), Jinan University, Guangzhou, China*

Abstract:

Nanotoxicology integrates fundamental chemical principles with biological insights to elucidate the mechanisms underlying the toxicological effects of materials at the nanoscale. As a rapidly evolving frontier in toxicology, nanotoxicology has reshaped our understanding of toxicity, with broad implications across toxicology, biomaterials, medicine, and drug delivery. Over the past two decades, our research has uncovered pivotal phenomena—including size-dependent toxicity, protein corona formation, the stealth effect, and the far-reaching effect—that have redefined the paradigms of nanomaterial safety assessment and the rational design of functional nanomaterials. This presentation aims to expand the boundaries of classical toxicology by addressing the mechanisms underlying nanotoxicological phenomena, with a focus on how nano-factors such as nano-sizes, nano-shapes, nano-surface (like surface defects electron transfer dynamics at nano–bio interfaces), AI-assisted theoretical modeling,

proposing and experimentally validating a comprehensive theoretical framework for nanotoxicology. This work seeks to redefine nanotoxicological principles, fostering safer biomedical nanomaterials by rational design to advance next-generation nanomedicines and biomedical applications.

October 16 | 10:30–11:15 | Guobin Hall

KL03: A 40-Year Journey on the Neurotoxicity of Heavy Metals: From Worms to Humans

- *Michael Aschner, Department of Molecular Pharmacology, Albert Einstein College of Medicine, USA*

Abstract:
Over the past four decades, research led by Dr. Michael Aschner has fundamentally advanced our understanding of heavy metal neurotoxicity across biological systems—from simple invertebrate models to complex mammalian brains. This body of work has elucidated the molecular, cellular, and systemic effects of metals such as methylmercury, lead, manganese, and arsenic, leveraging a multidisciplinary toolkit spanning C. elegans, rodents, and human studies. Pioneering use of C. elegans enabled high-throughput insights into metal-induced oxidative stress, mitochondrial dysfunction, and dopaminergic neurodegeneration, offering mechanistic parallels to human neuropathologies such as Parkinson's disease. In parallel, translational investigations have characterized critical windows of susceptibility, neurodevelopmental impacts, and gene-environment interactions in mammalian and human populations. Through integration of molecular neurobiology, toxicogenomics, and epidemiology, this research continuum has informed risk assessment, therapeutic targeting, and public health policy. Dr. Aschner's work exemplifies the power of model organisms in uncovering conserved neurotoxic pathways, laying the foundation for precision neurotoxicology in the era of environmental health.

October 16 | 11:15–12:00 | Guobin Hall

KL04: Avoiding a Reproducibility Crisis in Regulatory Toxicology – On the Fundamental Role of Standardisation and Ring Trials

- *Robert Landsiedel, BASF; German Toxicology Society, Germany*

Abstract:
The ongoing transition from chemical hazard and risk assessment based on animal studies to assessment relying mostly on non-animal data, requires a multitude of novel experimental methods, and this means that guidance on the validation and standardization of test methods intended for international applicability and acceptance needs to be updated. These so-called new approach methodologies (NAMs) must be applicable to the chemical regulatory domain and provide reliable data which are relevant to hazard and risk assessment. Confidence in and use of NAMs will depend on their reliability and relevance, and both are thoroughly assessed by validation. Validation demands, however, time and resources. As updates on validation guidance are conducted, the valuable components must be kept: Reliable data are and will remain fundamental. In 2016 the scientific community was made aware of the general crisis in scientific reproducibility - validated methods must not fall into this. In this commentary, we emphasize the central importance of ring trials in the validation of experimental methods. Ring trials are sometimes considered to be a major hold-up with little value added to the validation. Here we clarify that ring trials are indispensable to demonstrate the robustness and reproducibility of a new method. Further, that methods do fail in method transfer and ring trials due to different stumbling blocks, but these provide learnings to ensure the robustness of new methods. At the same time, we identify what it

would take to perform ring trials more efficiently, and how ring trials fit into the much-needed update to the guidance on the validation of NAMs.

Poster Viewing Session 01

October 16 | 12:30–13:30 | Poster Display Area

Poster #001 – #160

Symposium

October 16 | 13:30–15:30 | Guobin Hall-1

S01: The Serious Issue of Interference in Nanotoxicology

Chair: *Mary Gulumian, North-West University, South Africa*

Summary:
Nanotoxicology is defined as the study of the adverse effects of nanomaterials on living organisms and the ecosystems. In vivo and in vitro test systems are implemented to characterize nanomaterial induced toxicity and elucidate mode of action involved with the aim of prevention and amelioration of such adverse effects. To this end, validated test methods that are developed for conventional chemicals are required to further be validated if they are to be used for nanomaterials. In the literature, numerous publications investigating the toxicity of nanomaterials have implemented these test systems without giving due consideration to the possibility of nanomaterials interfering with these test systems. There are different ways that nanomaterials interfere with these assay systems which include absorption, adsorption, or by interacting with the substrate and/or product. They may also enhance or quench the intensity of fluorophores or have catalytic activity. Ignoring this aspect in nanotoxicology may lead to the production of erroneous results and in turn hinder the elucidating mechanisms of toxicity to help in the prevention and amelioration of the observed adverse effects. For these reasons, time has come for scientific journals to reject work that still use assay systems that are known to produce interference by nanomaterials.

Schedule:

13:30–13:50 **In Vitro Toxicity Assays: Potential Assay Interferences by Nanomaterials**
Naouale El Yamani, The Climate and Environmental Research Institute, Department for Environmental Chemistry and Health, Health Effects Laboratory, NILU, Norway

13:50–14:10 **In Vitro Toxicity Assays: Potential Assay Interferences by Carbon-Based Nanomaterials**
José María Navas Antón, Instituto Nacional de Investigación y Tecnología Agraria y Alimentaria (INIA), CSIC, Department of Environment and Agronomy, Spain

14:10–14:30 **Necessity of Accurate Assessment of the Rate Limiting Step in Initiation of Inflammation**
Mary Gulumian, North-West University, South Africa

14:30–14:50 **Serious Concern with Big Data: Criteria for Journals to Accept Publications Using Assay Systems with Interference**
Kailen Boodhia, North-West University, South Africa

October 16 | 13:30–15:00 | Guobin Hall-2

S02: Toxicity of Opioids: New Insights to Understand and Face the Progressing Threat

Chair: *Bruno Mégarbane, Paris Cité University, France*

Summary:
Opioid abuse and misuse are serious problems in developing countries. The increasing availability of analgesic opioids, recreational opioid-like drugs, and maintenance treatments for heroin addiction represents sources of abuse. Postmortem clinical findings and toxicological analysis in opioid-attributed deaths are very helpful to inform about the exact mechanisms of death, including the roles of tolerance, abstinence, drug abuse and drug–drug interactions. Experimental studies and clinical observations in human poisonings are able to identify possible mechanisms of toxicity, some of them being common to the different opioids, while others are specific to each marketed opioid molecule like codeine, methadone, buprenorphine and tramadol. Opioid-induced glial activation opposes opioid analgesia and enhances opioid tolerance, dependence, reward and respiratory depression. Such effects can occur, not via classical opioid receptors, but rather via non-stereoselective activation of toll-like receptor 4 (TLR4), a recently recognized key glial receptor participating in neuropathic pain as well. One recent strategy to increase opioid-related antinociceptive properties and overcome major side-effects involves the creation of multifunctional compounds which contain hybridized structures, including the combination of opioids with other bioactive neurotransmitters and peptide hormones involved in pain perception.

Schedule:

13:30–14:00 **Toxicological and Pathological Findings in Opioid-Related Deaths**
Lydia Bennedich Kahn, Department of Oncology–Pathology, Karolinska Institute & Swedish National Board of Forensic Medicine, Sweden

14:00–14:30 **Opioid-Related Mechanisms of Neuro-Respiratory Toxicity: Interindividual Variability and Drug-Drug Interactions**
Bruno Mégarbane, Paris Cité University, Department of Medical and Toxicological Critical Care, Lariboisière Hospital, France

14:30–15:00 **Engineering Hybrid Peptidomimetics for Improved Pain Treatments**
Steven Ballet, Vrije Universiteit Brussel, Belgium

October 16 | 13:30–15:30 | Guocui Hall

S03: Systemic and Next Generation Toxic Effects of Inhaled Carbonaceous Ultrafine Particles

Chair: *Flemming R. Cassee, Utrecht University, The Netherlands*

Summary:
The World Health Organization has called for more research on the implications of exposure to ultrafine particles (UFP) on human health, defined as particle < 100 nanometers. Due to the lack of air quality monitoring of UFP, hardly any epidemiological studies have been performed. UFP has been a topic for particle toxicologist since the beginning of the century with recently also more interest in other emission sources than road traffic. In addition, due to the evidence that ultrafine particles can more easily be transported across biological barriers such as the lung–blood and blood–brain barrier, the focus has shifted toward effects on other organs than those that form the port of entry (lung, gastrointestinal tract). For example, Miller et al (2017) showed that particles in the nanometer size range can accumulate at sites of vascular disease and also have a very long half time based on urinary analyses. Bongaerts et al reported carbon ultrafine particles can reach the fetus. In this session the latest findings on system effects of ultrafine particles on secondary organs after inhalation will be presented.

Schedule:

13:30–14:00 **Investigation of the Priming Effect of Inhaled Carbon Nanoparticles on the Lung**
Roel P.F. Schins, Department of Pharmacology and Toxicology, NUTRIM, Maastricht University, The Netherlands

14:00–14:30 **Small Particles, Big Impact: Neurotoxic Effects of Early-Life Exposure to Ultrafine Carbonaceous Particles**
Kenneth Vanbrabant, Centre for Environmental Sciences, Hasselt University, Belgium

14:30–15:00 **Early-Life Exposure to Ultrafine Particles from Air Pollution Affects Proximal Tubular Epithelial Cells Development and Resilience**
Alessandra Tammaro, Department of Pathology; Amsterdam Cardiovascular Sciences; Amsterdam Infection and Immunity
Amsterdam UMC, University of Amsterdam, The Netherlands

15:00–15:30 **Aircraft Cabin Air Quality Assessment of Pulmonary and Neurological Effects of Contaminants Including Ultrafine Particles**
Flemming R. Cassee, Institute for Risk Assessment Sciences, Utrecht University & National Institute for Public Health and the Environment (RIVM), The Netherlands

October 16 | 13:30–15:30 | Guohua Hall

S04: Modernising Approaches to Safety Assessment Through Use of In Silico Approaches in Decision-Making

Chair: *Fiona Sewell, UK National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs), UK*

Summary:
In silico/computational approaches can provide useful information to inform chemical safety assessment. These methods are being increasingly used across all sectors for internal decision-making and there are moves towards application within a regulatory context. These approaches have the potential to decrease the current reliance on traditional toxicity testing in animals (e.g. through use for screening and/or prioritization) but can also be used to inform and/or improve studies that may still need to be conducted in animals (e.g. to inform dose or species selection). In silico approaches are higher-throughput and less resource-intensive and therefore are associated with reduced animal use. They can also increase testing and predictive capacity to improve safety assessments. This session will showcase collaborative examples of how developers and industry-users have worked together to increase confidence in, and acceptance of, in silico-based approaches for safety assessment.

Schedule:

13:30–14:00 **Opportunities for the Use of In Silico NAMs Within Next Generation Risk Assessment of Cosmetic Ingredients**
Bruno Campos, Unilever Safety & Environmental Assurance Centre, UK

14:00–14:30 **Development of In Silico Tools Based on Curated Toxicological Databases**
Sylvia E. Escher, Fraunhofer Institute for Toxicology and Experimental Medicine, Germany

14:30–15:00 **An End-User Perspective on Supporting the Development of a QSAR Model to Predict Human Respiratory Irritancy of Single Compounds and Mixtures**
Chantal Smulders, Shell

15:00–15:30 **Drug Safety and Efficacy Evaluation Using AI-Informed Modelling & Simulation**
Blanca Rodriguez, Department of Computer Science, University of Oxford, UK

October 16 | 13:30–15:30 | Guobin Hall-1

S05: Unlocking the Future of Safety: NAMs and MPS

Chairs: ● *Paul L. Carmichael, Unilever Safety & Environmental Assurance Centre (SEAC), UK*
● *Jose Manautou, University of Connecticut, USA*

Summary:
New approach methodologies (NAMs) can provide the necessary information for chemical risk assessment without using animal tests. Significant advancements have been made in developing tools like computational models, microphysiological systems, and 'omics' technologies. However, there is often a lack of confidence in applying these methods within a regulatory setting. This symposium aims to raise awareness of NAMs and explore how their regulatory application can be accelerated by overcoming significant barriers. Key objectives include showcasing current uses of NAMs, identifying barriers and scientific gaps, and exploring ways to speed up validation and qualification. Many guidelines exist for developing and adopting new in vitro toxicological test methods, which are now routinely used to evaluate drug and chemical safety. Microphysiological systems (MPS) or tissue chips may address shortcomings in drug development by improving clinical efficacy and eliminating the need for animal-to-human extrapolation. Despite their promise, the complexity and cost of these models' present adoption challenges. This symposium will bring together experts to discuss building confidence in using microphysiological systems as decision-informing tools in regulatory science.

Schedule:

13:30–14:00 **Fit for Purpose Evaluation of a NAM-Based Systemic Toxicity Toolbox**
Paul Carmichael, Unilever Safety & Environmental Assurance Centre (SEAC), UK

14:00–14:30 **The Significance of Mechanistic Evidence in NGRA: Is Key Characteristics-Structuralized NAMs a Reasonable Approach?**
Jingbo PI, China Medical University, China

14:30–15:00 **A Pharma Perspective on the Use and Utility of MPS for Drug Safety Assessment**
Remi Villenave, Pharma Research and Early Development, Switzerland

15:00–15:30 **Perspective on Qualification of the Microphysiological Systems for Regulatory Use**
Yoko Hirabayashi, National Institute of Health Sciences, Japan

October 16 | 13:30–15:30 | Guoxing Hall

S06: Safety Assessments for Dietary Supplements and Herbal Products

Chairs: ● *Ayşe Nurşen Başaran, Başkent University, Turkey*
● *Nan Mei, United States Food and Drug Administration (FDA), USA*

Summary:
According to the WHO report, Traditional and Complementary Medicine (T&CM) is an important health resource in many countries, especially in Asian countries. T&CM products include herbs, herbal preparations, and herbal products. There is an increasing global interest in the use of botanicals or derivative products because people believe that such products as "natural" may be beneficial to health. However, the complex chemical nature of herbal dietary supplements makes it difficult to evaluate their efficacy and safety. The reported adverse effects have raised concerns of public health risks regarding the concentration, composition, and individual contaminants of herbal supplements. The WHO Traditional Medicine Strategy has announced to strengthen quality assurance, safety, proper use, and effectiveness of T&CM; and the International Agency for Research on Cancer (IARC) has assessed the carcinogenicity

of some herbal products, and part of them are classified as Group 2B (possibly carcinogenic to humans). Since little has been done to determine the potential risks associated with prolonged or high-dose use of herbal products, toxicological profiles of many herbal products that are currently on the market need to be scientifically evaluated. In this proposed symposium, safety issues about the herbal products will be discussed by scientists from different countries.

Schedule:

13:30–14:00 **The Serious Adverse Reactions Due to the Adulteration of Herbal Products with Chemicals and Synthetic Drugs**
Ayşe Nurşen Başaran, Başkent University, Turkey

14:00–14:30 **ecNGS Reveals Increased Hepatocarcinogenic Risk of Aristolochic Acid Under Steatohepatitis Inflammation**
Yang Luan, Shanghai Jiao Tong University, China

14:30–15:00 **The Balance Between Safety and Efficacy for the Approvement of Dietary Supplements in Korea**
Mihi Yang, Sookmyung Women's University, Republic of Korea

15:00–15:30 **Malaysia's Safety Framework for Herbal and Dietary Products**
Ami Fazlin Binti Syed Mohamed, National Institutes of Health (NIH), Ministry of Health Malaysia, Malaysia

October 16 | 16:00–17:40 | Guobin Hall-1

S07: Organoids and Organ-on-a-Chip in Toxicology

Chair: *Zhongze Gu, Southeast University, China*

Summary:

This session is dedicated to presenting reports on the technological advancements and applications of cutting-edge analytical platforms in the field of toxicology, with a particular emphasis on organoid and microphysiological system (MPS) platforms, as well as integrations with AI technology. Microphysiological systems, recognized as one of the World's Top 10 Emerging Technologies at the Davos Forum in 2016 and endorsed by the FDA 2.0 and FDA 3.0 frameworks, represent the forefront of in vitro toxicological research systems. This forum aims to assemble a distinguished panel of experts in MPS research, comprising Prof. Dan Tagle, the director of the US MPS Consortium, Prof. Uwe Marx, the chief scientist at TissUse, a pioneering German organ-on-a-chip enterprise, Prof. Thomas Hartung from Johns Hopkins University, Professor Jay Hickman affiliated with both Cornell University and Hesperos Inc., Prof. Seiichi Ishida from NIEH in Japan, and Dean and Prof. Gu Zhongze from Southeast University in China. These esteemed scholars will introduce novel technological paradigms for toxicological research and application, encompassing various microphysiological systems that mimic different human organs and spanning multiple model frameworks.

Schedule:

16:00–16:20 **The Innovation of Organ-on-a-Chip in Toxicology Research**
Zhongze Gu, Dean of State Key Laboratory of Digital Medical Engineering, Southeast University, China

16:20–16:40 **MPS: Looking Forward to Regulatory Acceptance**
James Hickman, Hesperos, Inc., USA

16:40–17:00 **Introduction of the Development of MPS in Japan and Their Way to the Regulatory Acceptance**
Seiichi Ishida, National Institute of Health Sciences, Japan

17:00–17:20 **Human Multi-Organ-Chips Advancing from Toxicology Testing Toward Preclinical**

"Safficacy" Evaluation In Vitro
Uwe Marx, CEO & CSO, TissUse GmbH, Germany

17:20–17:40 **Qualifying the Soluble and Mechanical Environments of Microphysiological Systems for Enhanced Regulatory Utility**
Alastair Stewart, ARC Training Centre for Personalised Therapeutics Technologies, Department of Biochemistry and Pharmacology, School of Biomedical Sciences, University of Melbourne, Australia

October 16 | 16:00–18:00 | Guobin Hall-2

S08: Pesticide and Herbicide Exposure: From Risk Assessment to Morbi-Mortality Reduction

Chairs: ● *Martin F. Wilks, University of Basel, Switzerland*
● *Bruno Mégarbane, Paris Cité University, France*

Summary:
The use of pesticides/herbicides still seems necessary to feed humanity, especially in overcrowded or developing countries. In the developing countries, pesticide-free agriculture has also failed to prevail. The use of these chemicals is associated with vital risks in acute exposure and a health hazard in chronic exposure, particularly in exposed workers. The whole toxicological scientific community tries by multiple approaches to understand the mechanisms of toxicity involved and to limit their scope by regulatory measures, risk assessment and monitoring, and measures to improve intoxicated patient management. The objective of this symposium is to make an updated inventory of the scientific progress in each of these areas and to verify its effectiveness on morbidity and mortality possibly induced by pesticide/herbicide exposure.

Schedule:

16:00–16:30 **Mixed Organophosphate Poisoning: An Emerging Toxicological Crisis in LMICs**
Fazle Rabbi Chowdhury, Centre for Cardiovascular Science, University of Edinburgh, UK

16:30–17:00 **Acute Pesticide Exposure & Antidote Therapy**
Bruno Mégarbane, Paris Cité University, Department of Medical and Toxicological Critical Care, Lariboisière Hospital, France

17:00–17:30 **Glyphosate: Toxicity, Cancer Risk and the Role of the Formulation**
Martin F. Wilks, University of Basel, Switzerland

17:30–18:00 **Pesticide Regulations & Impact on Mortality by Suicide**
Michael Eddleston, Centre for Pesticide Suicide Prevention, Centre for Cardiovascular Science, University of Edinburgh, UK

October 16 | 16:00–18:05 | Guocui Hall

S09: Interdepartmental Alternatives, Reductions, and Optimizations of Acute Toxicity Tests

Chair: ● *Fiona Sewell, UK National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs), UK*

Summary:
Acute toxicity tests are conducted as part of global regulatory risk assessment and hazard classification packages for industrial chemicals and agrochemicals. Often referred to as the acute toxicity 'six-pack', tests address the following endpoints: acute oral toxicity, acute dermal toxicity, acute inhalation toxicity, eye irritation/corrosion, skin irritation/corrosion and skin sensitization. These tests are carried out in

vertebrates for the assessment of ecological safety (where fish and birds are largely used), and effects on human health (using rodents). Historically, the aim of acute toxicity tests has been to determine the dose/concentration, which is lethal to 50% of the animals treated, therefore associated with suffering. Large numbers of animals can be used for this purpose and there is great scope to apply 3Rs principles – reduction, refinement and replacement of animals – in this area of testing. This symposium brings together toxicologists from different sectors and geographies to share experience of applying the 3Rs within acute toxicity testing.

Schedule:

16:00–16:30 **Refining and Removing Global Requirements for Mammalian Acute Toxicity Testing Across Sectors**
Mark Blee, UK National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3Rs), UK

16:30–17:00 **Applying the 3Rs in Fish Acute Toxicity Tests for Chemicals Safety Assessments**
Adam Lillicrap, Norwegian Institute for Water Research (NIVA), Norway

17:00–17:30 **Case Studies for Assessing Acute Oral Toxicity Without Animal Testing for Cosmetic Ingredients**
Hajime Kojima, Sanyo-Onoda City University, Japan

17:30–18:00 **Progress with Assuring Consumer Safety of Cosmetics Without Animal Testing**
Carl Westmoreland, Independent & the Former Director of Science & Technology Science, Unilever, UK

October 16 | 16:00–18:00 | Guohua Hall

S10: PARC – New Approaches to Model Kinetic Properties

Chair: *Doris Marko, University of Vienna, Austria*

Summary:

The PARC project (Partnership for the Assessment of Risks from Chemicals) aims to close data and knowledge gaps for priority compounds by developing NAM based assessments. The understanding of the absorption, distribution, metabolism and excretion of xenobiotic compounds a central assessment element in vitro to in vivo extrapolation and therefore of high importance for next generation risk assessment. Organised in four presentations, the symposium will provide insights into physiological based kinetic modelling approaches, which will evaluate the kinetic properties of Alternaria toxins and enniatins. To date, there are no PBK models for these emerging mycotoxins in any species. The talk will present a first modelling attempt using in vitro and in silico data (NAMS). It will discuss how bottom-up PBK modelling, as presented here, will facilitate the scientific community to adopt alternative ways to improve the assessment of ADME, whether common or specific to each of these toxins.
-Develop a tiered testing strategy for volatile compounds. Different in vitro barrier models will be compared to model their absorption within the different regions of the respiratory tract.
-Assess the impact of the human microbiome on the biotransformation of chemicals and their uptake into the systemic circulation.

Schedule:

16:00–16:30 **A Tiered Testing Strategy to Assess Absorption of Volatile Compounds**
Sylvia Escher, Fraunhofer ITEM, Germany

16:30–17:00 **First Physiologically Based Modeling of Alternaria Toxins**
Doris Marko, University of Vienna, Austria

17:00–17:30 **Quantifying the Gut Microbiome's Impact on Toxicokinetics by Physiologically Based**

Kinetic (PBK) Modeling
Georg Aichinger, Laboratory of Toxicology, Department of Health Science and Technology, ETH Zürich, Switzerland

17:30–18:00 **PBK Model-Based QIVIVE for a NAMs Based Assessment of Emerging Mycotoxins**
Nynke Kramer, Toxicology Chair Group, Wageningen University, The Netherlands

October 16 | 16:00–18:00 | Guobin Hall-1

S11: The Westward Movement of Botanicals

Chairs: ● *Kelly Magurany, NSF International, USA*
● *Shannon Cousineau, NSF International, USA*

Summary:
Humans have been looking after their health for thousands of years. From ensuring the balance of 'humors' to cold-water therapy, our understanding of health continues to evolve. While health and ill health were initially "dictated by the Gods", the ancient Greeks were the first to look at human biology. Eastern medicine refers to various organically integrated practices encompassing spiritual, social, and temporal health determinants and underscores illness prevention. Standardized formulations of botanical mixtures and herbal extracts, informed by centuries of use, are adjusted to novel indications and to respond to specific patient characteristics and lifestyles. Here, the future may lie in the improved recapitulation of ancient Eastern approaches married to modern Western technology informed by ancient experience. This session aims to provide an overview of the westward movement and the scope of key botanicals being promoted for improved health. In addition, safety considerations and regulatory pathways that allow for premarket approval in the European Union and North America, including US FDA GRAS (generally recognized as safe) and NDI (new dietary ingredient) paradigms, will be discussed.

Schedule:

16:00–16:30 **The Western Movement**
Sakan Warinhomhoun, Rangsit University, Thailand

16:30–17:00 **Generally Recognized as Safe/New Dietary Ingredients**
Shannon Cousineau, NSF, USA

17:00–17:30 **Regulatory Perspectives**
A. Wallace Hayes, University of South Florida, USA

17:30–18:00 **Botanicals and Herbal Medicines**
Peter Pressman, University of Maine, USA

October 16 | 16:00–18:30 | Guoxing Hall

S12: The Science, Application and Management in Risk Assessment

Chair: ● *Ying Wang, Procter & Gamble Technologies (Beijing) Ltd., China*

Summary:
In the past several years, many new regulations and standards have been issued for the safety/risk assessment of chemicals and consumer goods in China, such as multiple guidelines for cosmetic safety assessment issued by the National Medical Products Administration (NMPA), the technical guidelines for environmental and health hazard assessment of chemical substances (trial) issued by the Ministry of Environmental Protection, etc. Meanwhile, new approaches like NAMs, NGRA and IATA have been developed and gradually transformed for safety assessment. From regulatory agencies, higher attention

has been paid to the safety of chemicals and products, and higher requirements have been put forward for safety assessors. Therefore, to advance science and better enable the practice of risk assessment in China, we will conduct a symposium plus roundtable discussion afterwards for theme of “the science, application and management in risk assessment”, which will invite both international and domestic speakers to share and exchange the challenge and opportunity together. Hopefully this will strengthen the confidence of risk assessment practice in China.

Schedule:

16:00–16:25 **The Future Is Now: Implementing Animal-Free Safety Assessment for Cosmetics**
David Allen, International Collaboration on Cosmetics Safety (ICCS), USA

16:25–16:50 **The Development, Challenge and Opportunity of Risk Assessment in China**
Xingfen Yang, Southern Medical University, China

16:50–17:15 **Use of NAMs to Refine and Strengthen SAR Read-Across**
Corie Ellison, The Procter & Gamble Company, USA

17:15–17:40 **Discussion on the Practice of Safety Assessment for Cosmetics Under Regulatory Framework in China**
Ni Lin, National Institutes for Food and Drug Control (NIFDC), China

17:40–18:30 **Roundtable Discussion**