



Toward a European exposure science strategy

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PROGRAM

TY-SY-C1: Towards a European Exposure Science Strategy – Developing a roadmap 2020-2025-2030

TH-SY-C1-13

Goals and key thematic areas of ISES Europe

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European legislations create unique demands for the European exposure science community. Human and environmental exposure assessments for chemicals are required as part of the risk assessments undertaken in the context of various legislations. In addition, regulations on general product safety, classification, labelling and packaging, control of air quality and major-accident hazards require input on exposure. Moreover, security-driven exposure assessments are being increasingly requested related to the misuse of chemical, biological, radiological and nuclear materials. Knowledge gaps, method and tool limitations, new needs together with longer-term EU strategies and several new trends all add additional challenges to the field of exposure science calling for the development of a European Strategy for Exposure Science. As a first step of strategy building, ISES Europe organized its first workshop in Germany aiming at (1) to design the backbone of The European Exposure Science Strategy with a roadmap 2020-2030; (2) to create working groups with their own goals and agenda in alignment with the overall strategy; (3) to identify actions for further research and policy needs in Europe; and (4) to attract new ISES Europe members. The workshop was structured around six thematic areas identified via two stakeholder surveys on needs for exposure science in Europe being 1. Data repositories and analytics, 2. Regulatory exposure assessment, 3. Exposure data production and monitoring, 4. Building partnerships and collaboration, 5. Exposure assessment methods and tools, and 6. Exposure science education and communication. In July 2019 ISES Europe organizes its second workshop to develop thematic action plans with roadmaps until 2030. The themes overarch the classical silos of occupational, consumer and environmental exposure and stimulates discussion and cooperation among ISES Europe members. This presentation will give an overview of the key thematic areas of ISES Europe and how ISES Europe intends to shape exposure science in Europe.

Keywords: exposure factors, exposure models

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Toward a European Exposure Science Strategy

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In Europe, exposure science is closely related to various regulations. However, recent scientific advances face difficulties in finding their way into regulatory common practices. This is a major driver for the European Chapter of the International Society of Exposure Science (ISES Europe) to initiate developing an urgently needed «European Exposure Science Strategy» by soliciting exposure scientists from all relevant stakeholder communities. In building this European strategy for exposure science, we will focus on the following set of six overarching objectives: (i) To build a European Programme and related infrastructure to generate, assess, exchange, and communicate experimental and model-based exposure information; (ii) To advance exposure science with focus on closing existing knowledge gaps, building science-based and operational data and methods, fostering integration and interaction of disciplines involved in exposure science; (iii) To provide guidance and recommendations for exposure assessment in science and policy; (iv) To foster the inclusion of realistic exposure

information in various regulatory and non-regulatory assessment and management frameworks and related decision-making processes; (v) To strengthen the impact of exposure science on human health and environmental policies; and (vi) To support trans-agency and trans-institutional coordination, education, and engaging a broader European stakeholder community including triggering. These objectives will be addressed through establishing dedicated working groups from the wider European exposure science community to foster a focused and consolidated effort that will ultimately provide guidance for improving and increasing the use of exposure science in European regulation and practice. Initial focus will be on objectives with highest priority and capacity within the related stakeholder community.

Keywords: aggregate exposure, chemical prioritization, cumulative exposure, environmental regulation, exposure models

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Establishing exposure science in education

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Exposure science provides fundamental knowledge at the interface between chemicals and other stressors in the environment including workplaces and consumer goods, and their negative effects on humans and ecosystems. This knowledge is crucial for our understanding of the complex human-environment-stressor interactions in support of a safe and sustainable future. Education and training of the various exposure science topics yields important expertise required for regulatory risk assessment, for product evaluations and for scientific advances essential for health and environmental science, as well as market and societal demands. The European Chapter of the International Society of Exposure Science (ISES Europe) has initiated and reported on exposure science requirements as input for building a European Exposure Science Strategy, collated from all relevant stakeholders and the scientific community. In support of building this strategy, various topics to strengthen exposure science in Europe were discussed at the first ISES Europe workshop in 2018 along a set of thematic themes addressing: 1. data repositories and analytics, 2. regulatory exposure assessment, 3. exposure data production and monitoring, 4. building partnerships and collaboration, 5. exposure assessment methods and tools and 6. exposure science education and communication. To contribute to ISES Europe's objectives, a working group focusing on exposure science in education, training and communication was established, with an overarching aim to anchor exposure science in academic research and education, and to establish a defined career pathway for graduates. An important building block in the European Exposure Science Strategy is to develop a tiered education/training scheme with ECTS equivalent points/certificates, and to identify ways to support and promote existing courses with focus on exposure science. The preliminary analysis, objectives and expected outcomes will be presented in this talk, alongside the action plan to achieve these outcomes.

Keywords: other (specify)

TH-SY-C1-16

Exposure models for Europe: Towards harmonization and standardization of exposure modelling across regulatory sectors in Europe

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A number of exposure models and tools are available in Europe and elsewhere representing a valuable exposure science component in various assessment contexts. However, the diversity and complexity, as well as the lack of transparency and documentation for many of the existing exposure modelling approaches limit a consistent and harmonised use in regulation and elsewhere. This leaves important synergies from the different available