NORTHTOX 2023

April 20-21, 2023 | Stockholm.

Welcome to NorthTox in Stockholm,

Aula Magna, Stockholm University on April 20-21, 2023. This hybrid meeting is a new Nordic collaboration that aims to catalyze the interactions between Nordic toxicologists, and strengthen the field of toxicology in the Nordic region.

Toxicology in the Anthropocene

The scientific theme of this first NorthTox meeting is Toxicology in the Anthropocene and the program focuses on the multifaceted links between planetary health, biodiversity and human health, and describe the important role of toxicology in the work needed for the successful transformation to a safe and sustainable society. The meeting has four sessions, which include both invited speakers and oral presentations selected among the submitted abstracts. We have session chairs, speakers, and meeting participants from all neighboring countries. There will also be a poster session, poster awards, and other activities specifically for Early Career Toxicologists. We look forward to experiencing the first NorthTox meeting with you all.

Sincerely,

Oskar Karlsson
Chairman Swedish Society of Toxicology

Alexandre Antonelli
University of Gothenburg
Sweden

Keynote speaker is Alexandre Antonelli, Professor of Biodiversity at the University of Gothenburg and Head of Research at the Royal Botanic Gardens, Kew in Great Britain. Dr. Antonelli has studied the biodiversity of the tropics and worked on mapping the threats from environmental destruction. He also had a popular summer talk on Sveriges Radio, which was about the great species extinction – and that there is actually hope.

Scientific Sessions

1: New challenges for ecotoxicology

Chairs: Joachim Sturve, University of Gothenburg, and Jussi Kukkonen, University of Eastern Finland

2: Safe and sustainable by design. Toxicology's pivotal place in the development of green and sustainable chemistry and processes

Chairs: Ian Cotgreave, Research Institutes of Sweden (RISE), and Penny Nymark, Karolinska Institutet

3: New toxicological issues in the transition to a sustainable society

Chairs: Klara Midander, IVL Swedish Environmental Research Institute, and Hubert Dirven, Norwegian Institute of Public Health

4: Strategies and emerging methods for testing in toxicology

Chairs: Oskar Karlsson, Stockholm University, and Terje Svingen, Technical University of Denmark

General program

Thursday 20 April

Time		Activity	
09.00-12.00	09.30-11.00	Early career toxicologist activities Högbomsalen, Geovetenskapens hus U, SU	SFT annual meeting negotiations, DeGeer-salen, Geovetenskapens hus Y, SU

Registration at Aula Magna, SU + hanging of posters in exhibition area

13.00-14.00	Opening of NorthTox + **keynote**	Alexandre Antonelli (SE)
14.00-15.00	Session 1 (part I) New challenges for ecotoxicology	Chairs: Joachim Sturve (SE), Jussi Kukkonen (FI)
15.00-15.30	Coffee break	Poster exhibition
15.30-16.30	Session 1 (part II)	
16.30-17.30	Poster exhibition and mingle	
Evening	Dinner	Stora Skuggans Värdshus

Friday 21 April

Time		Activity	
8.30-10.30		Session 2 Safe and sustainable by design. Toxicology's pivotal place in the development of green and sustainable chemistry and processes	Chairs: Ian Cotgreave (SE), Penny Nymark (SE)
10.30-11.00		Coffee break	Poster exhibition
11.00-13.00		Session 3 New toxicological issues in the transition to a sustainable society	Charis: Klara Midander (SE), Hubert Dirven (NO)
13.00-14.00		Lunch break	Poster exhibition
14.00-16.00		Session 4 Strategies and emerging methods for testing in toxicology	Chairs: Oskar Karlsson (SE), Terje Svingen (DK)
16.00-16.15		Closing of NorthTox + poster award	
16.15-16.30		Coffee break	
	16.30-18.00	Take down posters	Early career toxicologist activities

Session 1 program:

New challenges for ecotoxicology

Chairs: Joachim Sturve, University of Gothenburg, and Jussi Kukkonen, University of Eastern Finland

A substantial amount of chemicals and polymers utilized in our society will eventually find their way into the environment, impacting both terrestrial and aquatic ecosystems. Not only are new classes of contaminants of emerging concern (CECs) being introduced into the environment, but there are also significant amounts of legacy chemicals already present in various parts of the environment, such as in sediments. Thus, it is crucial to monitor the impacts of these chemicals on ecosystems. To achieve this, we must enhance current monitoring methods and develop novel biological effect markers, so called biomarkers. Additionally, we need to better understand how CECs affect key organisms within the ecosystem. This session will address ecotoxicological monitoring strategies, development of new biomarkers and ecotoxicological effects of CECs.

Session 1 – Thursday 20 April – 14:00-16:30

14:00 Welcome and introduction
Linking research and biological effect monitoring to understand sediment toxicity in the Baltic Sea
Elena Gorokhova – Professor – Stockholm University, Sweden.

14:30 Environmental fate of microplastics
Jussi Kukkonen – Professor – University of Eastern Finland.

14:45 Effects of PFAS on the thyroid system of fish
Joachim Sturve – Professor – University of Gothenburg, Sweden.

15:00 COFFEE BREAK

15:30 Image-based High-Content Screening of Mitochondrial Membrane Potential in Daphnia magna
Cedric Abele – PhD Student – Stockholm University, Sweden.

15:50 The new Water Framework Directive and Groundwater Directive: an ecotoxicologist's perspective
Thomas Backhaus – Professor – University of Gothenburg, Sweden.

16:10 Male-transmitted transgenerational effects of the herbicide linuron on the DNA methylome in testis and brain of Xenopus tropicalis frogs
Mauricio Roza – PhD Student – Stockholm University, Sweden.

Session 2 program:

Safe and sustainable by design. Toxicology's pivotal place in the development of green and sustainable chemistry and processes

Chairs: Ian Cotgreave, Research Institutes of Sweden (RISE), and Penny Nymark, Karolinska Institutet

Safe and Sustainable by Design (SSbD) is a bedding concept aimed at fostering the transition towards earlier assessment of potential hazards and risks of chemicals and materials, i.e. during innovation. The European Commission has recently adopted the Joint Research Centre-developed framework for SSbD, which sets the basis for formulation of criteria and policies supporting operationalization of the concept. This session will cover different elements of the concept, including the pivotal role of toxicology and new methods, life cycle assessment aspects and challenges facing industry and the regulator. A panel discussion will explore how joint Nordic action by research institutes, industries and regulatory authorities may contribute best to implementation of SSbD within the EU.

Session 2 – Friday 21 April – 08:30-10:30

08:30 Welcome and introduction

08:40 The EU Chemicals Strategy for Sustainability and the Safe and Sustainable by Design Concept - overview of focus areas and related activities
Urban Boije af Gennäs – National Expert – Swedish Chemicals Agency (KEMI).

09:10 Putting the SSbD concept into practice – challenges and opportunities for hazard testing
Hedwig Braakhuis – PhD toxicologist – RIVM National Institute for public Health and the Environment, Netherlands.

09:40 SSbD Tools and Use Cases – current status and plans
Tomas Rydberg – PhD, Senior Researcher – IVL Swedish Environmental Research Institute.

10:10 Panel discussion with session speakers + guest
Guest: **Emma Strömberg** - Coordinator of SSbD-project IRISS – IVL Swedish Environmental Research Institute.

10:25 Concluding remarks and end of session

Session 3 program:

New toxicological issues in the transition to a sustainable society

Chairs: Klara Midander, IVL Swedish Environmental Research Institute, and Hubert Dirven, Norwegian Institute of Public Health

Civil society as well as industry and business are undergoing a transition towards a greener, toxic-free and more sustainable environment as well as a circular economy. Likewise, toxicology is in a transition phase in which the use of New Approaches Methodologies will increase with a subsequent reduction of animal testing. Furthermore, there is an increased focus on risk assessment of chemicals that we are really exposed to. In this context, pure material flows and closed loops become of great importance to avoid hazardous substances from being recycled and thereby protect the society. This will require careful labeling and control of the chemical content of products, as well as new assessment tools for toxicologists. The one health concept proposes to consider human, animal, and environmental health as interconnected and thus provide an approach that can help to tackle the new toxicological issues in the transition to a sustainable society. What information and tools do toxicologists need in order to keep protecting society from hazardous compounds.

Session 3 – Friday 21 April – 11:00-13:00

11:00 Welcome and introduction
Downstream user perspective on the use of NAMs in a regulatory context and how industry works with sustainability
Johnny Kvernstuen – Group Chief Toxicologist – Jotun A/S Sandefjord. Norway.

11:25 Occupational exposure to metals and workers' health in the industrial green transition
Florencia Harari - Docent in Occupational and Environmental Medicine and resident physician, expert in metal exposure and human health effects - University of Gothenburg, Sweden.

11:50 Tracking chemicals of concern in products: chemical compliance, the SCIP database, digital product passport
Anne-Marie Vass – Senior Technical Officer – KEMI, Stockholm, Sweden.

12:15 Life-cycle perspectives and sustainability of products and chemicals – how to inform consumers
Ann Kristin Larsen – Senior Environmental Advisor - Svanemerket, Oslo, Norway.

12:40 Technology critical elements – assessment of risks
Anna Qvarforth – PhD student - Linnaeus University, Kalmar, Sweden.

12:50 Mind the gap: Cosmetic preservatives and their regulation
Diana Kättström -PhD student - Stockholm University, Sweden.

13:00 Concluding remarks and end of session

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Session 4 program:

Strategies and emerging methods for testing in toxicology

Chairs: Oskar Karlsson, Stockholm University, and Terje Svingen, Technical University of Denmark

21st century toxicology aims to rely more on new approach methodologies (NAMs) for chemical testing and regulation, rather than traditional animal testing strategies. This requires robust methods that capture correct endpoints for intended toxicity testing, which rely on solid mechanistic understanding of causal toxicological pathways. This session will include talks on both opportunities and challenges with NAMs strategies, and new insight into mechanisms of action for key toxicological events.

Session 4 – Friday 21 April – 14:00-16:00

14:00 Welcome and introduction
Advancing clinical translation: An automated platform for massively scalable preclinical human testing
Anthony Bahinski – Chief Technology Officer – Vivodyne, USA.

14:30 New approaches in regulatory assessment of chemicals
Anna Beronius – Associate Professor – Karolinska Institutet, Sweden.

14:50 Opportunities and challenges of using New Approach Methodologies for identification of endocrine disrupting chemicals
Marta Axelstad – Senior Researcher – Technical University of Denmark.

15:10 Speed Talks
High-content analysis shows tumorigenic activity of per- and polyfluoroalkyl substances (PFAS) as single compounds and mixtures in human breast epithelial cells
Paula Pierozan – Senior Researcher – Stockholm University, Sweden

15:15 Enzymatic methyl whole genome sequencing shows perfluorooctanesulfonic acid induced cancer related methylome alterations in human breast cells
Andrey Höglund – Postdoctoral Researcher – Stockholm University, Sweden

15:20 Comparing sensitivity of pubertal and adult 28-day exposure scenarios in female rat toxicity studies using diethylstilbestrol or ketoconazole
Hanna KL Johansson – Senior Researcher – Technical University of Denmark.

15:25 Retinoic acid disrupting chemicals perturb germ cell development in the fetal mouse testis: causal evidence for Adverse Outcome Pathway no. 400
Monica Kam Draskau – Postdoc – Technical University of Denmark.

15:30 Morphological profiling as an emerging tool in toxicology of particles and chemicals
Andi Alijagic – PhD, researcher – Örebro University, Sweden.

15:35 Chemical proteomics, from finding molecular targets to predicting the impact of chemicals on human health
Susana Cristobal – Professor – Linköping University, Sweden

15:40 The GARDskin assay adopted into OECD TG 442E – The first and only genomics and machine learning based in vitro skin sensitization assay – Assay overview and industry-based case studies
Morphological profiling as an emerging tool in toxicology of particles and chemicals
Tim Lindberg – PhD, Key Account Manager – SenzaGen, Sweden.

15:45 Concluding remarks and end of session

Activities for early career toxicologists

Early career activities are applicable to a wide audience, from master students to post-docs interested in toxicology and related fields. The event will be centered around networking and professional career development. Activities include talks and presentations from experienced toxicologists on ERT criteria, CV-building, roles of toxicologists in the modern pharmaceutical industry as well as lots of opportunities to network. We will finish with a panel discussion on different career paths, geared toward presenting different fields of work for current and future toxicologists.

NorthTox 2023 Early career toxicologists working group

- Denise Strand, Stockholm University
- Linus Wiklund, Karolinska Institutet
- Monica Draskau, Technical University of Denmark
- Maria Wielsøe, Aarhus University
- Johanna Yli-Öyrä, University of Eastern Finland
- Nicola Smith, Norwegian Institute of Public Health
- Julia Matyjasiak, Master Student at Karolinska Institutet
- Wouter Pijper, Master Student at Karolinska Institutet
- Brandon Mills, Master Student at Karolinska Institutet

Timeline early career activities

Thursday, Högbomsalen, Geovetenskapens hus U, Stockholm University

Time	Activity	
08.45-09.00	Registration	
09.00-09.30	Welcome , Icebreaker	
09.30-09.45	Introduction to the European Registered Toxicologist (ERT) title	Mattias Öberg, Karolinska Institutet
09.45-10.00	Coffee break and quiz	
10.00-10.50	Active CV - building in Academia	Terje Svingen, Technical University of Denmark
10.50-11.00	Leg stretcher	
11.00-11.30	Introduction to toxicology jobs in the pharmaceutical industry	Tomas Joachim Mow, Novo Nordisk
11.30-11.45	Walk to restaurant Gamla Orangeriet	
11.45-12.45	Lunch	

Friday, Aula Magna, Stockholm University

Time	Activity	
16.30-16.50	Challenges and opportunities in modern pharmaceutical toxicology	Mikael Persson, Astra Zeneca
16.50-17.50	Career Paths for Toxicologists; Panel discussion with experts from academia, research institutes, governmental agencies, industry and consultant companies.	Chair: Terje Svingen, Technical University of Denmark Panelists: • Anthony Bahinsky, Vivodyne • Jussi Kukkonen, University of Eastern Finland • Hubert Dirven, Norwegian Institute for Public Health • Mikael Persson, Astra Zeneca • Tomas Joachim Mow, Novo Nordisk • Lizette Granberg, Toxicology Knowledge Team • Ian Cotgreave, RISE
17.50-18.00	Closing of NorthTox early career activities	

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