

ACTRA IUTOX MEMBER CONTRIBUTION TO NEWSLETTER
Australasian College of Toxicology and Risk Assessment



ACTRA HIGHLIGHTS 2019

ACTRA's 12th Annual Scientific Meeting was held at Oaks on Market in Melbourne, 28-30 August 2019. This three-day exploration of risk assessment and toxicology was commenced by a Continuing Education (CE) Day workshop on *Risk Assessment for Reproductive and Developmental Toxicants – Techniques and Case Studies* followed by the Annual Scientific Meeting program themed as *Reproductive/ Developmental Toxicology and Risk Assessment – Advances and Practice*.

Dr Paul Foster, the Former Chief of the Toxicology Branch of the National Toxicology Program (NTP) at the National Institute of Environmental Health Sciences, USA was the keynote international invited speaker at the event. The delegates were quickly engaged with the biology and rationale for predictive/developmental toxicity testing. His note: '*Development is highly conserved in mammals, therefore adverse effects must be considered relevant to humans*' served as a basis for the line of presentations over the coming days. Dr Foster was brilliant in communicating a complex topic to the audience, setting out challenging concepts in an approachable and understandable way. His presentation was followed by other excellent speakers: Dr Craig Dalton, a public health physician from the University of Newcastle, Dr Clare Looker, an acting senior medical advisor from the DHHS Victoria, and Professor Claire Roberts, a deputy director of the Robinson Research Institute at the University of Adelaide introduced the audience to important topics regarding public health, epidemiological studies and the challenges in using epidemiological repro-developmental studies in risk assessment. There was robust discussion after each of the presentations. These presentations were followed by a presentation by Dr Rhian Cope, the principal toxicologist of the APVMA, who gave an excellent and thorough account on residential exposure assessment of companion animal products. The day was closed by Dr Peter Di Marco, the then ACTRA President. The ASM program was opened by Dr Di Marco on Thursday 29 August. Over the following two days the delegates were immersed with 26 presentations given by 22 presenters. Dr Foster presented on the pros and cons of changing the OECD guideline for reproduction tests. This was followed by talks by Maryam Moslehi from CDM Smith, Paul Wright from RMIT University and Ramesh Thapaliya from Karolinska Institutet, Sweden, who gave the delegates information on the future of developmental toxicity tests. Presentations by Dr Kerry Nugent, the principal scientist at the NICNAS and Dr Foster on *in vitro* assays and using *in vitro* data on classification of chemical hazard and risk assessment created vivid conversations amongst the audience. Dr Martine Dennekamp, senior environmental epidemiologist from the EPA Victoria, Bill Webster, emeritus professor of reproductive toxicology from the University of Sydney, Nathan Aust from WSP Australia Pty Ltd and Dr Rosalind Dalefield from FSANZ gave really interesting talks on epidemiological and clinical perspectives to developmental hazards.

Friday morning sessions were focused on exposure from environmental chemicals and their effects observed in reproductive and developmental toxicity. Presenters were Dr Roger Drew, Drew Toxicology Consulting, Dr Ian Delaere, manager toxicology at the SA Health, Dr Angie Bone from the DHHS Victoria, Dr Len Turczynowicz from the University of Adelaide and Katie Richardson from Senversa. The other overseas guest speaker, Dr Kai Zwingenberger, physician from CSL Behring Ltd, Switzerland spoke to the delegates about new opportunities in drug discovery with thalidomide. Thalidomide-like immunomodulatory drugs exert their effects through induced degradations of target proteins such as Ikaros family zinc finger proteins causing multiple myeloma. Professor Brian Priestly from Monash University led the audience in discussions with regard to neurobehavioural toxicity testing, new approach methodologies and their application in risk assessment. After three talks on botanical hazards by Dr Helen Ritchie, an associate professor at the School of Medical Sciences in the University of Sydney and Dr Foster, there was a consensus amongst the delegates in the room that a substance being 'natural' does not necessarily mean it is 'safe'. The Friday afternoon sessions included student presentations and talks based on submitted papers given by Amy MacIntosh from the University of Tasmania, Giorgio De Nola from SLR Consulting, Benjamin Edokpolo from the EPA Victoria, Dr Jean Meaklim from Greencap and Ruth Jarman from EnRisks.

The Local Organising Committee did a wonderful job in arranging the meeting and making the days run smoothly. We had 86 delegates attending the CE Day and 92 for the ASM days. The social highlight of the ASM was the banquet dinner organised at Intercontinental Melbourne the Rialto on Thursday evening. The participating delegates gathered around the tables to enjoy wonderful food, drinks and company and almost equal number of delegates were later found on the dance floor shaking off the extra calories received.





***Toxicology at the Workplace: The evolution of the Workplace Exposure Standard
Wednesday 26 February 2020, State Library NSW, Macquarie Street, Sydney NSW***

ACTRA and SafeWork Australia held a workshop on workplace exposure standards (WES) and what goes into establishing them. The workshop focused on the toxicological basis and interpretation of data that support a workplace exposure standard, and was timely considering the mammoth review currently being undertaken in updating Australia WES. IUTOX President Dr Peter Di Marco, Jackii Shepherd from Safe Work Australia, and Nathan Redfern from WSP were speakers for the day.

Topics covered included:

- Overview of workplace exposure standards and an update on the review project.
- Health risk assessment and management - occupational vs environmental health.
- How are WES used in a workplace risk assessment.
- Interpreting critical effect and translations from feeding, oral or skin data where inhalational data are lacking.
- Uncertainty in health risk assessment - what to do when information is limited or missing.
- WES parameters - what are they and what data results in recommending them?
- Approach for applying a skin notation to WES.
- Non-threshold genotoxic carcinogens - a new approach for work health and safety.

The workshop was well attended and well received. Participants gained an overall understanding of what data informs a recommendation for a health-based workplace exposure standard. There was plenty of time for panel discussions and questions from the floor. This aspect created a great feel of interaction between people at the event.

***13th Annual Scientific Meeting and Continuing Education Day
Wednesday 26 to Friday 28 August 2020, Sydney, Australia***

The Australasian College of Toxicology and Risk Assessment was to be holding the 13th Annual Scientific Meeting (ASM) and Continuing Education (CE) Day in Sydney, Australia from 26-28 August 2020. However, unfortunately due to the uncertainty related to the COVID-19 situation, the Executive made the decision to postpone the meeting to 25-27 August 2021.

ACTRA's ASM aims to advance the study and application of toxicology and health risk assessment as professional scientific disciplines by offering the latest research, innovations, case studies and applications in toxicology and risk assessment.

Effi Liden, Senior Health Scientist and Toxicologist at the Victorian Department of Health and Human Services and chair of the local organising committee (LOC) and the members of the LOC are currently busy organising the ASM and CE Day. The theme for the meeting is "*Advances in Risk Assessment: Petroleum Toxicology and Neurotoxicology.*" The focus of the CE Day on the 25th of August 2021 will be on Petroleum Toxicology, and the focus of the ASM will be on Neurotoxicology.

The LOC are currently in the process of developing the program and contacting invited speakers. Potential subject matters to be covered at the meeting include:

- Principles and methods for the assessment of neurotoxicity with exposure to chemicals.
- Chain length & structure (aromatic or aliphatic): how it relates to petrochemical toxicity.
- Calculation of toxicity reference values for petroleum substances (Case study).
- Assessing the risk of petroleum mixtures in environmental exposures (Case study).
- Nuances of human biomonitoring of petrochemical exposure in characterisation of health risk.
- Update on the toxicity of moth balls.
- Developmental neurotoxicity testing: current state of play and regulatory challenges.
- Principal mechanisms of chemical neurotoxicity.
- Assessment of health risks from early-life exposures: are current risk assessment methods adequate?
- Utility of non-mammalian tests as models for developmental neurotoxicity.
- Assessing neurotoxicity risks for agricultural and veterinary chemicals in Australia.

- Occupational exposure to neurotoxicants and risk of late-life nervous system disorders.
- Dietary neurotoxins: case study management.
- Neurotoxicity and substances of abuse.

As usual, there will also be numerous presentations of submitted papers from the ACTRA membership. We hope to welcome you to Sydney for what is shaping up to be an exciting and interesting meeting!

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