

Invited Oral presentation at:

SETAC Focused Topic Meeting on Endocrine Disruption: Chemical Testing, Risk Assessment Approaches and Implications in RTP, February 4-6.

Developing In Silico Approaches to Chemical Prioritization for ED Testing within an AOP context.

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ABSTRACT

The EPA, ORD aquatic toxicology lab in Duluth has been developing predictive toxicity models for use in risk assessment of data poor industrial chemicals since the 1980s. More recently a QSAR-based expert system was developed to prioritize among thousands of chemicals the EPA must consider for EDSP testing. An ER Expert System was developed demonstrating how a chemical prioritization tool is developed based on early events plausibly connected to adverse outcomes of risk concern. The use of the OECD QSAR validation principles guiding the development of the system to be transparent and useful for the intended regulatory purpose will be presented. How the approach can be used to guide development of predictive models where other adverse outcome pathways have been sufficiently elucidated will be discussed.

Impact statement: The presentation will give an example of how predictive systems can be built in the context of an adverse outcome pathways of risk concern, in this instance specifically for endocrine disruption endpoints.