

Diagnostic Assessment of the Ecological Risk of EDCs in Complex Mixtures. Gerald Ankley, USEPA, 6201 Congdon Blvd, Duluth, MN.

Although it is important to be able to forecast the potential endocrine toxicity of chemical mixtures that could enter aquatic environments, in many instances there is a need to determine possible effects of endocrine-active chemicals already present in complex environmental mixtures (e.g., effluents, sediments), as well as discern specific chemicals causing observed responses in exposed animals such as invertebrates, fish and amphibians. This presentation will focus on techniques to: (1) detect the occurrence of endocrine-active chemicals (e.g., estrogen and androgen receptor agonists) in complex aqueous samples using mechanism-based responses in cell lines or whole animals, (2) identify specific chemicals responsible for endocrine toxicity in complex mixtures through biologically-based fractionation procedures, and (3) use pathway-specific models to assess the potential for adverse effects of chemical mixtures on individuals and populations. Case examples illustrating these approaches will focus on the effects of complex municipal, industrial or agricultural discharges, and chemical components of these wastes.