

Ecological Consequences of Exposure to Pharmaceuticals: From the Laboratory to the Field.

CHAIRS: James Lazorchak, Damià Barceló, Joan Tell, Daniel Caldwell



Tuesday 13th May 2014, 08:10 – 16:00, room: Montreal

This session will focus on presentations that address unique assessment challenges of pharmaceuticals in the environment. Presentations will describe studies utilizing chemical, biological and genomic approaches on laboratory and indigenous organisms and plants that attend to fate, exposure and effect issues to address the following questions:

Behavior of pharmaceuticals in the environment:

- What do we know about the patterns of exposure from point and non-point sources of pharmaceuticals?
- What do we know about the environmental transport of pharmaceuticals in aquatic and soil systems?
- What do we know about the mechanisms of degradation and sorption in water, sediment and soil as well as the impacts of biosolids or manure on the fate and bioavailability of pharmaceuticals to aquatic or terrestrial organisms?
- What do we know about the application of structure-property (activity) and biodegradability relationships for pharmaceuticals?

Tools to assess the environmental impact of pharmaceuticals:

- How do we develop appropriate biological endpoints?
- What do we know about statistical approaches or exposure modeling to simulate, predict and test the efficacy of laboratory approaches to real world low level continuous versus episodic exposure?
- What do we know about setting environmental standards at the population level vs the individual level? Which under or overestimates risk?
- What do we know about estimating the ecotoxicity of pharmaceuticals to aquatic and terrestrial organisms based on human pharmacology or toxicity studies?

Effects of pharmaceuticals on exposed organisms in the laboratory and on indigenous animals and plants:

- What endpoints are there at the gene, protein, tissue, organ, individual, population, community or ecosystem level for measuring exposure and effects?
- What do we know about the differences in estimating risk using an individual substances approach vs a mixture approach? How do we extrapolate from individual compounds and organisms to mixtures and populations?
- What evidence is available that links the presence of pharmaceuticals and effects on individuals or populations of indigenous organisms and plants?

PRELIM SESSION TYPE: Platform, Poster and Poster Corner

ADVISORY GROUP: Pharmaceuticals Advisory Group (global)