

The Adverse Outcome Pathway (AOP)-Wiki

Actionable Knowledge to Support 21st Century Toxicity Testing



Daniel L. Villeneuve¹, Clemens Wittwehr², Stephen Edwards³

¹ US EPA, Great Lakes Toxicology and Ecology Division, Duluth, MN, USA
² European Commission, Joint Research Centre, Ispra, Italy
³ RTI International, Research Triangle Park, NC, USA



New Approach Methodologies for Chemical Safety Assessment

Enzyme activities

Receptor binding

Gene expression

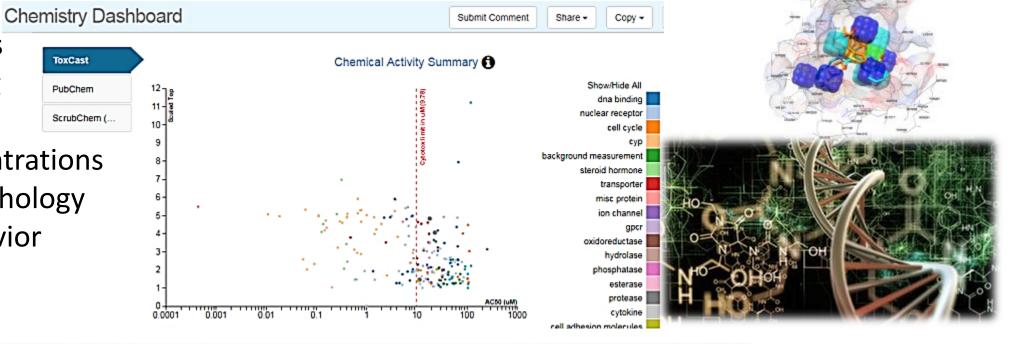
Hormone concentrations

ToxCast

PubChem

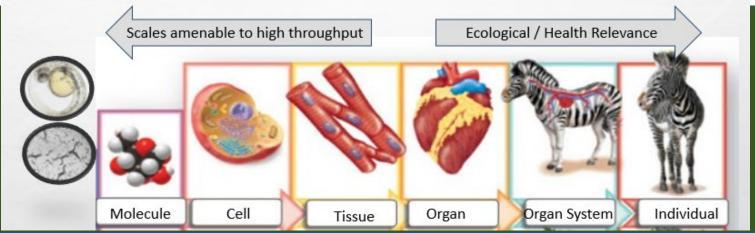
ScrubChem (...

- Changes in morphology
- Changes in behavior



Measurements we can make

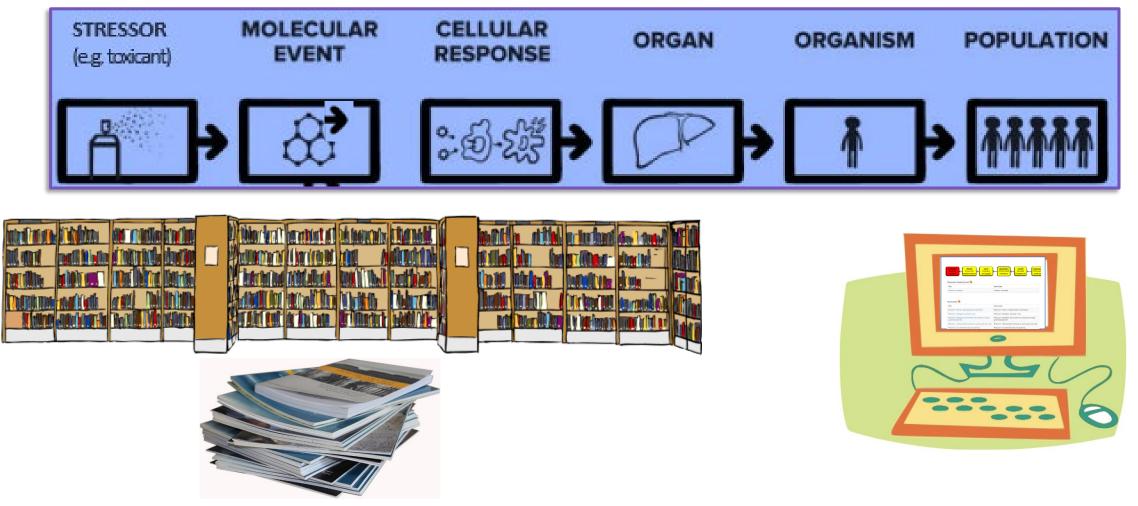
- Rapidly and efficiently
- **Cost-effectively**



Protection goals

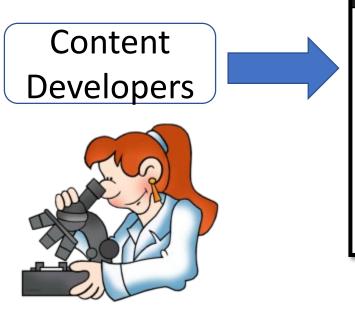
Biological functions and ecosystem services we care about.

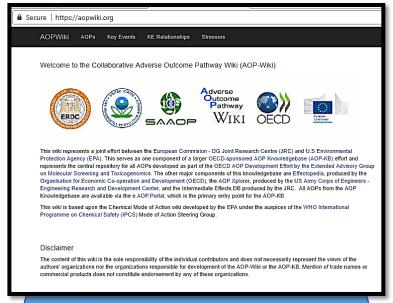
Adverse Outcome Pathways



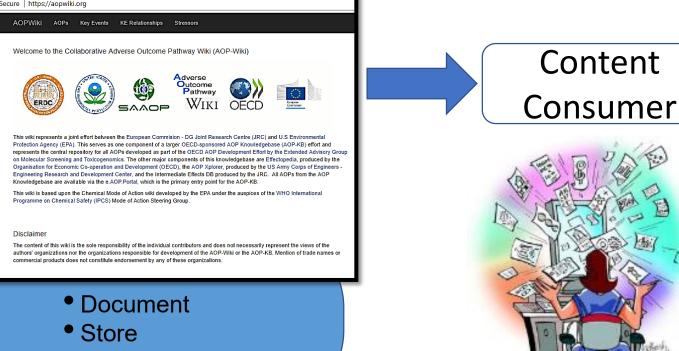
- Assemble the specialized scientific knowledge required to interpret results from new approach methods.
 - Present it in a systematic, simple to follow, graphical and narrative format

Aopwiki.org





- Disseminate
- Curate and Review
- Distributed labor (crowd-sourcing)
- Integration of expertise (collaboration)
- Avoiding duplicative effort (transparency)
- Gap identification
- Emergent knowledge



- Synthesized and translated
- Accessible and searchable
- Systematically organized
- Transparent, well documented
- •Scientifically-defensible, credible