

## **ExpoCast: Exposure Science for Prioritization and Toxicity Testing**

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The US EPA is completing the Phase I pilot for a chemical prioritization research program, called ToxCast<sup>TM</sup>. Here EPA is developing methods for using computational chemistry, high-throughput screening, and toxicogenomic technologies to predict potential toxicity and prioritize limited testing resources. There is a clear need for a parallel and collaborative effort across the exposure and risk assessment community to provide the exposure science required for interpretation of high-throughput *in vitro* toxicity data. A coherent research program is required to advance exposure characterization to translate advances and findings in computational toxicology for enhanced risk assessment, informed decision making and improved public health. US EPA is initiating the ExpoCast program to ensure that the required exposure science and computational tools are ready to address global needs for rapid characterization of exposure potential arising from the manufacture and use of tens of thousands of chemicals and to meet challenges posed by new toxicity testing approaches. ExpoCast will provide an overarching framework for science required to characterize biologically-relevant exposure in support of the Agency computational toxicology program. The overall goal of this program is to develop novel approaches and tools for evaluating and classifying chemicals, based on potential for biologically-relevant human exposure, to inform prioritization and toxicity testing. Broadly and long-term, the ExpoCast program will foster novel exposure science research to (1) inform chemical prioritization, (2) understand implications of system response to chemical perturbations at the individual and population levels, (3) link information on potential toxicity of environmental contaminants to real-world health outcomes. This presentation will introduce EPA's ExpoCast program.

*This work has been reviewed and approved by the US EPA for publication but does not necessarily reflect Agency policies.*