

U.S. Environmental Protection Agency
Temporal Exposure Issues for Environmental Pollutants:
Health Effects and Methodologies for Estimating Risk
Research Triangle Park, NC
January 27–29, 2016

EPA's Human Health Risk Assessment (HHRA) program and the National Center for Environmental Assessment (NCEA) is holding a workshop on *Temporal Exposure Issues for Environmental Pollutants: Health Effects and Methodologies for Estimating Risk* in Research Triangle Park, NC on January 27–29, 2016. The purpose of the workshop is to explore the state-of-the-science with respect to temporal exposures to environmental pollutants, the observed associations with health effects, and the greatest opportunities to utilize current or future scientific data.

The workshop includes presentations and discussions by scientific experts and risk assessors in areas pertaining to exposure science, physiological based pharmacokinetic modeling, health effects resulting from environmental pollutants, and regulatory risk assessment guidance. The workshop is structured to include opportunities for comments, questions, and engagement from stakeholders and members of the public.

General Goals of the Workshop

- 1) Explore state-of-the-science regarding the influence of duration and time-dependent concentrations or doses on a range of endpoints (health effects) and best practices for estimating risk.
- 2) Advance the development of methods for addressing the differences between dose regimes in animal testing and temporal patterns of human exposures in the human health risk assessment process.

Agenda

Wednesday, January 27, 2016

12:00 – 1:00 REGISTRATION

1:00 – 1:15 Welcome
Ken Olden | *U.S. EPA NCEA*

1:15 – 1:30 Drivers and needs for the workshop
David Bussard | *U.S. EPA NCEA*

Session I – Defining temporal exposure issues in risk assessment

Co-Chairs: David Bussard and Lou D’Amico | *U.S. EPA NCEA*

1:30 – 2:10	Current practices to estimate human health risk in the context of temporal exposures scenarios Stan Barone <i>U.S. EPA OPPT</i>
2:10 – 2:20	Q&A
2:20 – 3:00	Defining, characterizing, and measuring temporal exposures to environmental pollutants Paul Price <i>U.S. EPA NERL</i> Lisa Sweeney <i>Henry M. Jackson Foundation</i>
3:00 – 3:10	Q&A
3:10 – 3:20	BREAK
3:20 – 4:00	<i>TBD presentation</i> Lauren Zeise <i>California EPA</i>
4:00 – 4:10	Q&A
4:10 – 4:50	Panel discussion Stan Barone <i>U.S. EPA OPPT</i> Keeve Nachman <i>Johns Hopkins University</i> Paul Price <i>U.S. EPA NERL</i> Jon Sobus <i>U.S. EPA NERL</i> Lisa Sweeney <i>Henry M. Jackson Foundation</i> Lauren Zeise <i>California EPA</i>
4:50 – 5:00	Wrap-up
5:00	ADJOURN

Thursday, January 28, 2016

8:00 – 8:30 REGISTRATION

8:30 – 8:40 **Welcome & recap of Day 1**
Ila Cote | *U.S. EPA NCEA*

Session II – Critical topics related to temporal exposure of environmental pollutants

Co-Chairs: Lynn Flowers and Samantha Jones | *U.S. EPA NCEA*

- 8:40 – 9:10 **Dose-Time-Response implications of the approach to saturation for metabolism and receptor-mediated end effects**
Dale Hattis | *Clark University*
- 9:10 – 9:20 **Q&A**
- 9:20 – 9:50 **Biomonitoring and temporality in environmental epidemiology: The data we collect versus the data we need**
Judy LaKind | *LaKind Associates*
- 9:50 – 10:00 **Q&A**
- 10:00 – 10:30 **Biomarkers for population risk evaluation, or considerations for biomarker-based epidemiology**
Jon Sobus | *U.S. EPA ORD*
- 10:30 – 10:40 **Q&A**
- 10:40 – 11:10 **Chronically underestimated: The impact of high early life water intake rates and short-term effects for deriving health-protective drinking water criteria**
Helen Goeden | *Minnesota Department of Health*
- 11:10 – 11:20 **Q&A**
- 11:20 – 12:00 **Panel discussion**
Helen Goeden | *Minnesota Department of Health*
Earl Gray | *U.S. EPA NHEERL*
Dale Hattis | *Clark University*
Judy LaKind | *LaKind Associates*
Jon Sobus | *U.S. EPA NERL*

12:00 – 1:00 LUNCH BREAK

Session III – Case studies and best practices for estimating risk from temporal exposure scenarios

Co-Chairs: Stan Barone | *U.S. EPA OPPT* and Vince Coglianò | *U.S. EPA NCEA*

- 1:00 – 1:40 **Case study on n-Methylpyrrolidone**
Gary Ginsberg | *Connecticut Department of Health*
- 1:40 – 2:30 **Panel discussion**
Stan Barone | *U.S. EPA OPPT*
Gary Ginsberg | *Connecticut Department of Health*
Dale Hattis | *Clark University*
Torka Poet | *Summit Toxicology*
Paul Schlosser | *U.S. EPA NCEA*

2:30 – 2:45	BREAK
2:45 – 3:45	Case study on Inorganic Arsenic Rebecca Fry <i>University of North Carolina</i> Jaymie Meliker <i>Stony Brook</i>
3:45 – 4:35	Panel discussion Rebecca Fry <i>University of North Carolina</i> Jaymie Meliker <i>Stony Brook</i> Keeve Nachman <i>Johns Hopkins University</i> Erik Tokar <i>NIEHS</i>
4:35 – 4:45	Wrap-up Vincent Coglianò <i>U.S. EPA NCEA</i>
4:45	ADJOURN

Friday, January 29, 2016

8:00 – 8:30	REGISTRATION
8:30 – 8:40	Welcome & recap of Day 2 Ila Cote <i>U.S. EPA NCEA</i>
Session IV – Advancing the characterization of temporal exposure scenarios and health effects Co-Chairs: Ila Cote and Andrew Hotchkiss <i>U.S. EPA NCEA</i>	
8:40 – 9:10	Incorporating modernized approaches and data sources to assess temporal exposures: Considerations across the source to outcome continuum Barbara Wetmore <i>ScitoVation</i>
9:10 – 9:15	Q&A
9:15 – 9:45	What a difference a day makes: Critical exposure periods for adverse birth outcomes John Rogers <i>U.S. EPA NHEERL</i>
9:45 – 9:50	Q&A
9:50 – 10:20	Advantages and implications of using Adverse Outcome Pathways (AOPs) for disease outcomes resulting from temporal exposures Steve Edwards <i>U.S. EPA NHEERL</i>
10:20– 10:25	Q&A
10:25 – 10:40	BREAK

10:40 – 11:20 **Temporal exposures to obesogens and transgenerational inheritance**

Bruce Blumberg | *University of California, Irvine*

11:20 – 11:25 **Q&A**

11:25 – 12:10 **Panel discussion**

Bruce Blumberg | *University of California, Irvine*

Steve Edwards | *U.S. EPA NHEERL*

Annette Guiseppi-Elie | *U.S. EPA NERL*

Dale Hattis | *Clark University*

John Rogers | *U.S. EPA NHEERL*

Barbara Wetmore | *ScitoVation*

12:10 – 12:40 **Wrap-up, conclusions, & next steps**

12:40 ADJOURN