



EMERGING SCIENCE FOR ENVIRONMENTAL HEALTH DECISIONS

AGENDA

Informing Environmental Health Decisions Through Data Integration

FEBRUARY 20–21, 2018

NATIONAL ACADEMIES KECK CENTER, ROOM 100

500 FIFTH STREET, NW, WASHINGTON DC

THIS WORKSHOP WILL BE WEBCAST

INTEGRATING LARGE QUANTITIES OF DATA from multiple, disparate sources can create new opportunities to understand complex environmental health questions. However, combining new types and larger quantities of data to inform a specific decision presents many new challenges. For example, investigators must develop methods to reliably integrate data from designed experiments with data re-purposed from other uses, such as electronic health records, geo-spatial data sets, and crowd-based sources.

This workshop will bring together scientists, policymakers, risk assessors, and regulators to explore the promise and potential pitfalls of environmental health data integration. Workshop speakers will present a general framework for data visualization, and participants will work together to conceptualize future research directions that could help incorporate these analyses into environmental health decision-making.

TUESDAY, FEBRUARY 20, 8:30–5:30

8:30 Welcome, Context, and Opening Remarks

- Keegan Sawyer, National Academies of Sciences, Engineering, and Medicine
- Kim Boekelheide^{§†}, Brown University, Co-chair, Standing Committee on Emerging Science for Environmental Health Decisions

[§] Member of the Workshop Planning Committee for Informing Environmental Health Decisions Through Data Integration

[†] Member of the Standing Committee on Use of Emerging Science for Environmental Health Decisions

8:45 SESSION 1 PROMISE, PERILS, AND FOUNDATIONS FOR DATA INTEGRATION

Moderator: David Reif[§]

New Data and New Tools for Answering
Environmental Health Questions

—Lance Waller[§], Emory University

It's Not All Roses: When Data Integration Can Be
Misleading and Criteria for When Should It Be
Pursued

—Chris Gennings[§], Icahn School of Medicine at
Mount Sinai

Where Data Integration in the Environmental
Health Field Has Been and Where Do We Want
to Go?

—Linda Birnbaum, National Institute for
Environmental Health Sciences

10:00 Break

(continued)

**TUESDAY, FEBRUARY 20, 8:30–5:30
(CONTINUED)**

10:15 SESSION 1 CONTINUED

Foundations for Integration

- Deborah McGuinness, Rensselaer Polytechnic Institute
- Lucila Ohno-Machado, University of California San Diego

10:55 Panel Discussion—All Session 1 Participants

11:35 SESSION 2 EMERGING APPROACHES FOR ENVIRONMENTAL HEALTH DATA INTEGRATION

Moderator: Gina Solomon^{§†}

Integration of Data on Clinical Outcomes

- Atul Butte, University of California San Francisco (*presenting remotely*)
- Marylyn Ritchie, University of Pennsylvania
- Sandy Eckel, University of Southern California

12:35 Lunch

1:30 SESSION 2 CONTINUED

Integration of Data for Risk Assessment

- Kris Thayer, United States Environmental Protection Agency
- Tim Pastoor, Pastoor Science Communications, LLC
- Barry Hardy, Douglas Connect & OpenTox

[§] Member of the Workshop Planning Committee for Informing Environmental Health Decisions Through Data Integration

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Workshop Planning Committee

This workshop was organized by the following experts: Kim Boekelheide[†], Brown University; Chris Gennings, Mt. Sinai Health System; Margaret Karagas[†], Dartmouth College; Patrick McMullen[†], ScitoVation; Donna Mendrick[†], U.S. Food and Drug Administration; David Reif, North Carolina State University; Gina Solomon[†], University of California San Francisco; Lance Waller, Emory University

2:30 Panel Discussion—All Session 2 Participants

3:15 Break

3:30 Data Visualization Literacy Mini Course

Moderator: Patrick McMullen^{§†}

Framework and Design Principles for Visual Communication of Data

- Katy Börner, Indiana University, Bloomington
- Miriah Meyer, University of Utah

5:15 Closing Discussion

5:30 Adjourn for the Day

WEDNESDAY, FEBRUARY 21, 2018, 8:30–12:30

8:30 Welcome and Reflections on Day 1

- Margaret Karagas^{§†}

8:45 Science, Open Collaboration, and New Methods

- John Wilbanks, Sage Bionetworks

9:20 SESSION 3 DATA INTEGRATION TO DRIVE DECISION MAKING

Moderator: Donna Mendrick^{§†}

Improved Geospatial Resolution with Google Street View Cars

- Melissa Lunden, Aclima

10:00 Break

10:20 SESSION 3 CONTINUED

Ensemble Models for Predicting Lead Contamination Sites in Flint, Michigan

- Jacob Abernethy, Georgia Tech

Decision Directed Comparative Life Cycle Assessment

- Thomas Seager, Arizona State University

11:20 Panel Discussion—All Session 3 Participants

11:50 Open Discussion moderated by Patrick McMullen^{§†}

12:20 Closing Remarks

- Kim Boekelheide^{§†}

12:30 Adjourn*

* Emerging Science for Environmental Health Decisions Committee Business Meeting, 1:30pm–4pm. This meeting is open to Committee members, Government Liaisons, and workshop participants.

