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
(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

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*

§ 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.

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

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