

Priority Topic 10: A systems model & approach for environmental health science

Convener: Karen Adelman

Discussion Participants:

Subtopic Report Numbers from Days One and Two:

Recommended Strategic Goal:

Develop a conceptual framework and tools for enabling a systems model and approach for environmental health science

Potential Beneficiaries of this Strategic Goal:

Environmental health scientists broadly from biologists and social scientists to clinicians to risk assessment to public health advocates and practitioners.

NIEHS Capabilities and Partnerships Needed to Achieve this Goal:

NIEHS could leverage infrastructure and knowledge at other NIH institutes for some components of this, but should invest strategically to expand systems approaches to environmental health sciences.

Involves use and sharing of databases, policies and public availability.

This initiative would involve all parts of NIEHS (DIR, DERT, NTP), working collaboratively to achieve the goal.

Generation of broad, flexible framework for synthesis and integration of systems level data. This framework could be populated by a spectrum of data types from genetic variability to epidemiology to epigenomics, deposited in a standardized format to facilitate integration. Concrete steps would include creating an 'omics strategy for environmental health science, and to encourage development of new techniques for monitoring exposures.

Infrastructure investment will be required to provide a repository for data (and perhaps samples)

To maximize utility, significant investment is required in the tools and approaches to connect various data types, permit mining of data, analysis, statistical evaluation, and curation.