

Transforming ORD: Confronting Today's Reality and Building a Successful Future



Partnering to Solve Complex Environmental Issues

- To best fulfill the Agency's mission, ORD must fully employ its unique integrated, multidisciplinary capability to solve increasingly complex environmental issues.
- This vision for ORD's future is consistent with both the recommendations of the Science Advisory Board and the testimony of our new Administrator.
 - "Science must be the backbone for EPA programs."
- To achieve this vision, ORD must closely partner with EPA's Program and Regional Offices, starting from problem definition thru to the use of research results.



SAB

Recommendations

- “It is clear that if the Agency is to truly protect the environment, it must undertake a larger program of research that goes beyond its immediate regulatory needs and address the broad array of environmental problems facing the nation.”
- “...if it is to be prepared to address future needs, EPA’s research program will have to adopt a more integrated view, one that reflects the inherent complexities and interconnections among human and ecological systems, gives greater consideration to feedbacks, and focuses on the relevant scales of each issue.”

EPA Science Advisory Board, 2008

Building on ORD's Strengths

- ORD has worked hard to be supportive of EPA's mission.
 - Our Program and Regional Office partners increasingly request our time and expertise.
- We would like to transform ORD toward these two ends:
 - What we do: Ensure that our research addresses the most important environmental problems facing the Agency and Nation.
 - How we do it: Fully capitalize on ORD's special ability to conduct integrated, multidisciplinary research to solve these problems.



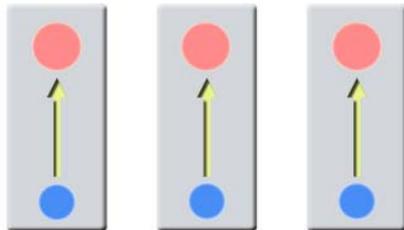


Problems of Broad, National Significance

Attributes

- Potentially large impact on exposed human population and/or affected ecosystems
- Significant geographic scale, temporal reach, and economic consequences
- Relevant to national or international policy-making
- Central to EPA's mission to protect human health and the environment
- EPA action will likely make a significant contribution toward resolution
- Priority for the Agency and the Administrator
- Visible to the public
- Likely to benefit from an integrated, multidisciplinary approach

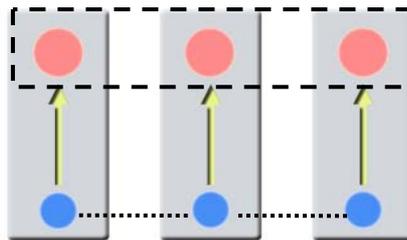
Integrated, Multidisciplinary Research



**Disciplinary
Research**

One discipline/problem
Singular approach:
Specialize to gain a deep
understanding of one
problem

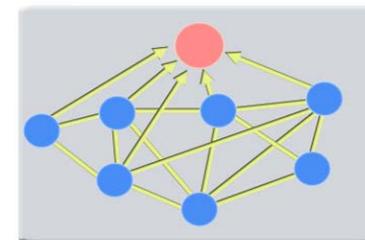
No cooperation across
disciplines



**Multidisciplinary
Research**

More than one
discipline/problem
Additive approach:
Coordinate activities at
beginning; combine
knowledge at end

Cooperation



**IMD
Research**

More than one
discipline/problem
Integrated approach:
Synthesize knowledge at
all phases

True collaboration

Example: Sustainable Water infrastructure

Background

- Over 250 million Americans rely on the water infrastructure for drinking water, sanitation, and environmental protection.
- In many parts of the United States, the “in-place” infrastructure was designed and installed prior to implementation of the CWA and SDWA and represents a significant carbon footprint.



- Infrastructure failures can result in uncontrolled releases of water or sewage, localized flooding, drinking water and environmental contamination, loss of service, and significant public health and environmental impacts.
- Infrastructure reliability and sustainability is vulnerable to water availability, water quality, climate change, land-use practices, homeland security, and socio-economic factors.

Example: Sustainable Water Infrastructure

Research Approach

- ORD is partnering with offices across OW, EPA's Regional Offices, and other stakeholders to develop "analytical frameworks" that identify research needed to inform decisions that sustainably address the deterioration and overextension of our water infrastructure.



- These efforts provide an opportunity to integrate condition assessment, advanced treatment options, and infrastructure rehabilitation with innovative approaches to green infrastructure (carbon and water), water reuse, security, and decentralized treatment.

Actions to Date

- Briefed ORD, Program Office, and Regional Office staff
- Briefed SAB, BOSC, and others
- Formed a Transformation Task Force to:
 - Identify problems of broad, national significance and implement programs to address these problems
 - Partner closely with key stakeholders inside and outside the Agency
 - Communicate on progress
- We welcome your feedback, both now and “downstream.”

