

Learning from the Past, Looking Toward the Future

過去に学び、未来に向かう

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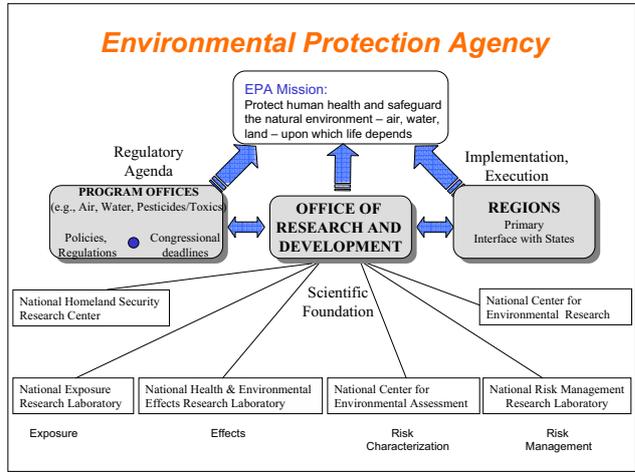
## U.S. Delegation

Office of Research and Development  
National Risk Management Research Laboratory  
Office of Ground Water and Drinking Water  
Office of Wastewater Management  
EPA Region 10

7<sup>th</sup> Japan - U.S. Conference  
on Drinking Water Quality Management and  
Wastewater Control

### Learning from the Past, Looking toward the Future

Dr. Lawrence Reiter, Acting Director  
National Risk Management Research Laboratory  
July 12, 2004  
Honolulu, Hawaii



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## Research and Development at EPA

- 1,950 employees
- \$700 million budget
- \$100 million extramural research grant program
- 13 research facilities across the U.S.

Credible, relevant and timely research results and technical support that inform EPA policy decisions



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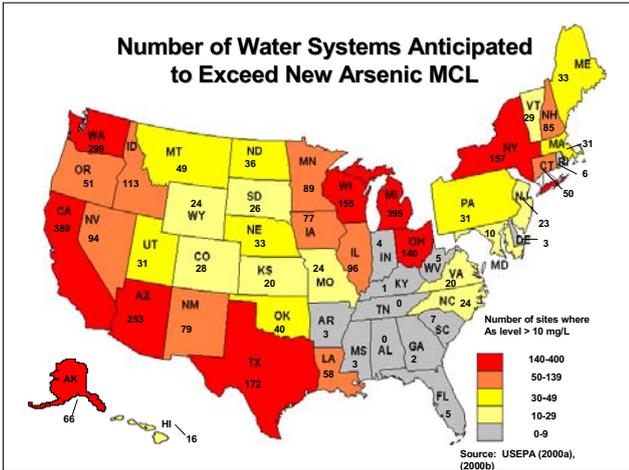
## PAST ENVIRONMENTAL PROBLEMS PERSIST

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## Lead in Drinking Water in Washington, D. C.

**Plumbing the Depths of D.C.'s Drinking Water Crisis**

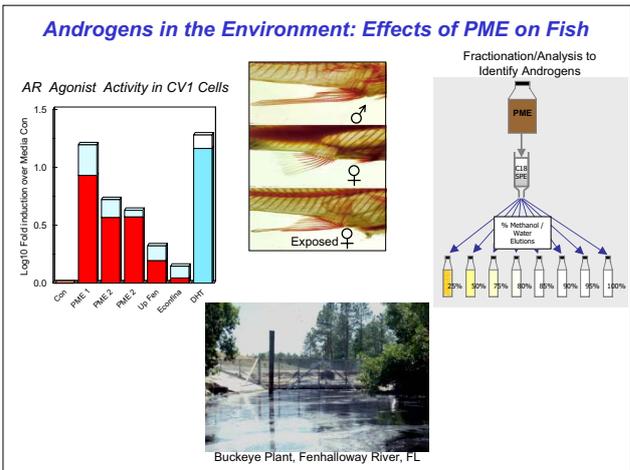
High levels of lead in the U.S. capital's water have exposed fresh regulations and raised the specter of widespread problems elsewhere.



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## CONTINUING ENVIRONMENTAL CHALLENGES

### Endocrine Disruptors



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## STATE-of-the-ENVIRONMENT

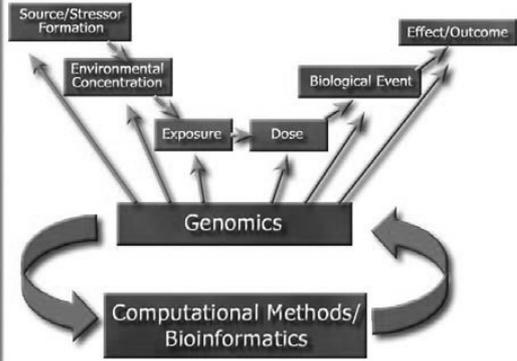
EPA United States Environmental Protection Agency  
Draft Report on the Environment

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- ### Lessons and Action
- Data inadequate to determine status and trends of ambient water quality conditions across the country
  - Unable to determine relationship of water quality conditions to human health and environmental impacts on a national basis
  - Agency decided to pursue an initiative to improve shortcomings highlighted in the report

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## EMERGING ENVIRONMENTAL PRIORITIES

## Computational Toxicology



To integrate modern computing and information technology with the technology of molecular biology and chemistry to improve EPA's prioritization of data requirements and risk assessments for toxic chemicals

"A Framework for a Computational Toxicology Program in ORD"



- Improve linkages in source-to-outcome paradigm
- Improve predictive models for screening and testing
- Enhance quantitative risk assessment

## Homeland Security Research

## EPA Homeland Security Research Program



## Characterization/Detection Research



- Screening protocol for water contaminants chemicals/biologicals

- Bioconcentration methods for water



- Early warning monitor evaluation



- Review available detection devices to inform utility decisions on management approaches

## Decontamination Research

- Modeling & decontamination of high rise distribution systems



- Water distribution system decontamination methods Evaluation

- Analysis/guidance on water utility contingency planning/alternative supplies
- Voluntary design/retrofit standards

## Rapid Risk Assessment Research

- Risk values for CB agents
- PC-based rapid risk assessment tool
- Framework for microbial risk assessment



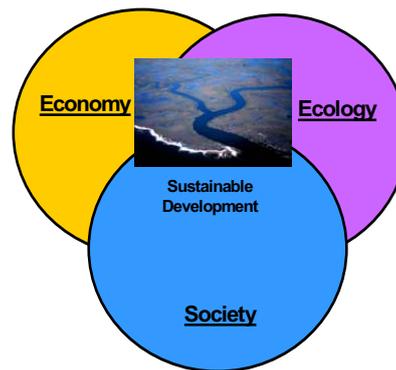
- Multiple exposure route factors- CB agents in water
- Threat scenario simulations and screening level risk analyses

## Sustainability

“Pursuing the goal of sustainability allows us to use innovative science and technology to achieve the goals of environmental and economic prosperity for both current and future generations”

Dr. Paul Gilman, Science Advisor  
U.S. EPA

## Sustainability



## Global Sustainability Challenges for Water

### Practice

Water use  
Safe drinking water  
Water reuse  
Source water protection

### Challenge

Reduction  
Availability of technologies  
Affordable technologies  
Prevention of stressors

Thank You