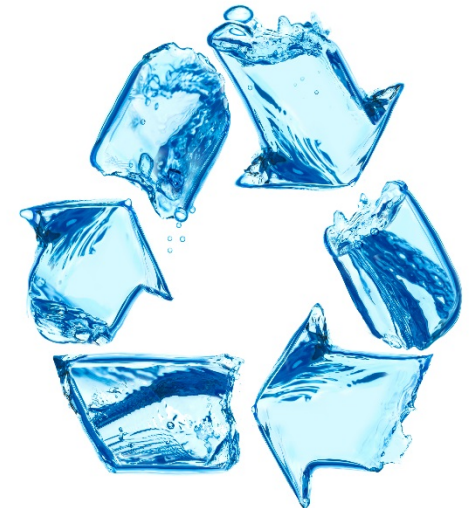


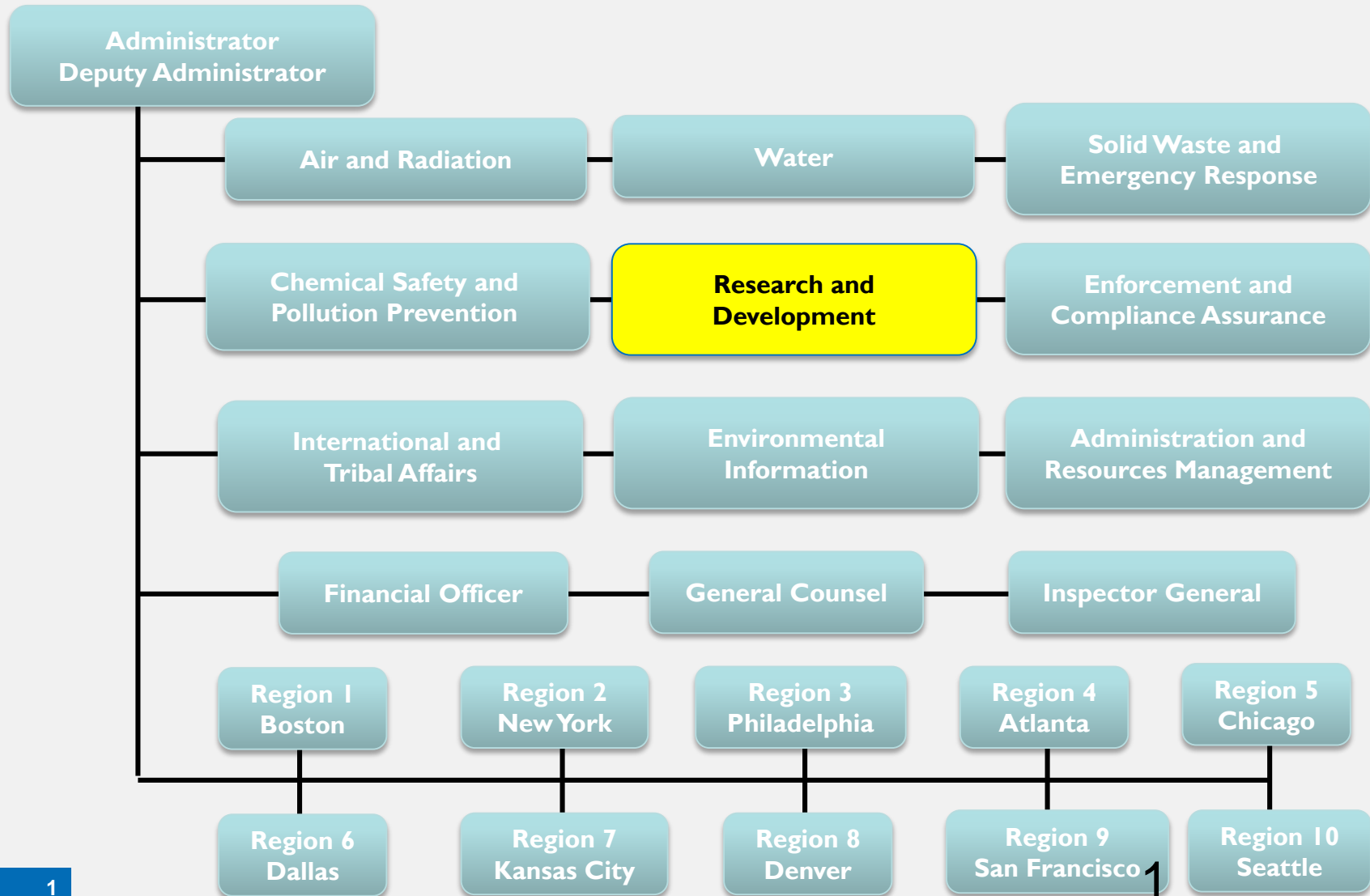


# STAR Grant Kickoff Meeting: Human and Ecological Health Impacts Associated with Water Reuse and Conservation Practices October 26-27, 2016

*Dr. Jim Johnson, Jr., Director  
National Center for Environmental Research*



# U.S. EPA Organization Chart



# Office of Research and Development Research Programs

## Sustainable & Healthy Communities Research

Protecting children  
and other susceptible  
populations

Supporting citizen decisions to foster  
community health and sustainability

Cleaning up contamination  
for productive sites



## Air, Climate & Energy Research

Addressing changes in  
climate and air quality

Assessing impacts of air pollutants  
and climate change

Preventing and reducing emissions



## Safe & Sustainable Water Resources Research

Protecting our  
coastal and  
inland waters

Supporting the nation's  
water infrastructure  
systems

Ensuring drinking water  
quality and availability



## Human Health Risk Assessment Research

Supporting communities with  
environmental and health risk  
assessments

Developing  
assessments  
for improved  
public health

Providing  
the science  
to support  
the air  
quality  
standards

Modernizing risk  
assessment



## Chemical Safety for Sustainability Research

Providing 21<sup>st</sup> century data on  
chemical risks to health and  
environment

Facilitating faster  
and more effective  
chemical safety  
assessments

Advancing sustainability by  
using green chemistry principles



## Homeland Security Research

Characterizing  
contamination and  
determining risks

Securing and sustaining  
water systems

Remediating  
indoor and  
outdoor  
locations



<http://epa.gov/research>

# NCER – Where we Fit

## Immediate Office of the Assistant Administrator

Office of the  
Science Advisor

### National Program Directors

- Air, Climate & Energy
- Chemical Safety for Sustainability
- Safe and Sustainable Water Resources
- Sustainable and Healthy Communities
- Human Health Risk Assessment
- Homeland Security

### Headquarters Offices

Administrative offices  
Office of Science Policy– RSL/STL

### National Research Laboratories and Centers

Health and  
Environmental  
Effects Lab

Exposure  
Research  
Lab

Risk  
Management  
Lab

Environmental  
Assessment  
Center

Computational  
Toxicology  
Center

Homeland  
Security  
Center

Environmental  
Research  
Center

# Key Research Questions

- how reclaimed water applications and large scale harvest will affect public and ecological health;
- best practices and sustainable water management incorporating water reuse and larger-scale rainwater harvesting/stormwater reuse systems;
- life cycle costs of large scale harvest and reuse systems;
- uses and treatment trains for reuse applications and large scale harvest, and assessments and measurements of economic and non economic impact



# Kick-off Meeting Objectives

1. Announce new grants and meet the grantees.
2. Presentations from grantees on funded projects and research.
3. Enable researchers from recipient teams, EPA and other agencies to understand common interests and explore prospects for collaboration such as Cooperative Agreements.



# Cooperative Agreement Benefits

- Build research relationships between PI and EPA
  - Extend capacity of research “*whole* >  $\Sigma$  *parts*” expanding technical and personnel capacity
  - Add valuable *real world* application
  - Does not cost PI \$
  - Does not affect scope of research
- Most research grants can be converted to cooperative agreements



**Ryan Dupont**  
**Utah State University**  
**Douglas Jackson-Smith**  
**Ohio State University**

Assessment of Stormwater Harvesting via  
Managed Aquifer Recharge to Develop New Water  
Supplies in the Arid West: the Salt Lake Valley  
Example





**Justin Mattingly**  
**Water Environment & Reuse Foundation**  
**Sujay Kaushal**  
**University of Maryland**

Improving Water Reuse for a Much Healthier  
Potomac Watershed



# Jay Gan

## University of California, Riverside

Reclaimed Water Irrigation: Plant Accumulation and Risks of Contaminants of Emerging Concern (CECs)



# Helen Nguyen

## University of Illinois at Urbana-Champaign

Enabling adaptive UV and solar-based disinfection systems to reduce the persistence of viral pathogens in wastewater for sustainable reuse



# **Daniel Gerrity**

## **University of Nevada, Las Vegas**

Framework for Quantifying Microbial Risk and Sustainability  
of Potable Reuse Systems in the United States

