

# NSF WORKSHOP ON THE ENERGY WATER NEXUS

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Organizers

June 10-11, 2013

Washington, DC

# Workshop on the Energy Water Nexus

- ▣ What are the most critical challenges, needs and opportunities associated with the relationship of energy and water?
- ▣ What are the cross-sector dependencies that introduce vulnerabilities to critical infrastructure?
- ▣ What critical resources research can support cross-cutting solutions that improve the relationship for both sectors simultaneously?

# Goals of the Workshop

- ▣ Generate a research roadmap,
  - What are the technical, social and policy barriers?
  - Where is the state of the science today?
  - Where we want to go as a society?
  - What is the technical/social/policy roadmap to get from here to there?
- ▣ Start to build a community of capabilities to address that research roadmap

# Workshop Themes

- ▣ “Water for Power”
  - Managing water demand for the production of power
- ▣ “Water for Fuels”
  - Managing water demand for the production of fuels
    - ▣ Water for Biofuels
    - ▣ Water for Unconventional Oil and Gas
- ▣ “Energy for Water”
  - Managing the energy demands of extracting, treating and transporting water
- ▣ Socioeconomic Barriers and Opportunities
  - Social, behavioral, policy, and economic structures to enhance water and energy use efficiencies
    - ▣ Public
    - ▣ Professional Community

# Process

- ▣ Plenary session for each of the four topics
- ▣ Introduced by 2 lectures with relevant data and background information outlining the key challenges and opportunities as they now exist and provoke further thinking and discussion on current and future needs and how they might be addressed.
- ▣ Breakouts on each session's topic focusing on **technical, social and policy barriers**.
  - 2 groups of 25-30, 1 group for the balance
  - The lectures will be used to charge those breakouts and to initiate discussion.
  - Each breakout will have a facilitator and a student rapporteur
  - Organizers to further promote discussion and dialog