Office of Science & Technology Policy

- Dr. John Holdren – Director and Advisor for Science and Technology to the President
  - Dr. Aneesh Chopra – Associate Director for Technology and Chief Technology Officer to the President
- Shere Abbott – Associate Director for Environment
- To be filled – Associate Director for Science
- To be filled – Associate Director for National Security and International Affairs
OSTP Organization

Science Directorate:
  • Physical Sciences and Engineering
  • Life Sciences
Technology Directorate:
  • Technology
  • Space and Aeronautics
  • Telecommunications and Information Technology
National Security and International Affairs Directorate:
  • Chemical, Biological, Nuclear, Radiological Threats
  • Biometrics
Environment Directorate:
  • Environmental Sciences
Breadth of Activities

Climate Change Research
Agricultural Issues (Genetically Modified Organisms, Food Safety, etc)
Environment (mercury, dioxin, etc)
Visa issues impacting scientists and students
Telecommunications/Information Technology
Energy policy (fusion, fuel cells...)
National Nanotechnology initiative
Balance (Physical science/Life science)
Countering Terrorism with Science
OSTP’s Mission

• Advise the President and others within the EOP on the impacts of science and technology on domestic and international affairs

• Lead interagency effort to develop and implement sound S&T policies and budgets

• Work with the private sector to ensure Federal investments in science and technology contribute to economic prosperity, environmental quality, and national security

• Build strong partnerships among Federal, State, and local governments, other countries, and the scientific community

• Evaluate the scale, quality, and effectiveness of the Federal effort in science and technology
Role of Government in Advancing Science

• The four major responsibilities of the federal science enterprise are to:
  – Promote discovery and sustain the excellence of the Nation’s scientific research enterprise
  – Respond to the Nation’s challenges with timely, innovative approaches
  – Invest in and accelerate the transformation of science into national benefits
  – Achieve excellence in science and technology education and in workforce development
Role of Government in Meeting the Challenge

- Assist in the identification of priority cross-community needs
- Invest in cutting-edge basic research that produces new discoveries that can result in significant advancements and technologies for the future
- Describe government needs in as specific terms as possible so that industry and academia can devote resources to solving real problems
- Where appropriate, provide resources and/or guidance to overcome those obstacles that the community is unable to provide on its own
Federal Role continued...

• Maximize efficiency and effectiveness of the federal research, development, testing and evaluation enterprise by:
  – Planning activities across the federal government to meet interagency needs
  – Selecting activities through competitive, peer-reviewed award and review processes
  – Ensuring activities meet scientific and privacy-rights standards

• Where necessary, participate in standards development, standards adoption, conformance test tool development, and conformity assessment system development
Federal Role continued...

• Assist in the promotion of a scientifically literate population and a supply of qualified technical personnel commensurate with national needs

• Strengthen international partnerships in order to foster the advancement and standardization of technologies
R&D Budget Guidance Memo

Issued each year by the Directors of OMB and OSTP

- Memo issued August 2007 was for FY09 Budget
  - Discusses key administration priorities
  - Names technology areas for agencies to emphasize in their budget planning
  - 2007 memo (FY09): “Defense against the threat of a domestic nuclear event: Development of transformational capabilities for the stand-off detection of nuclear materials must proceed as rapidly as possible. Emphasis is needed on R&D to better understand and mitigate the social and economic effects of a domestic nuclear explosion, including better tools to treat the injured and means for rapidly assessing damage to critical infrastructure and developing recovery options.”
S&T Budgeting at Macro Level

1. OSTP & OMB issue guidance memorandum on R&D priorities
2. Agencies prepare and submit proposed budgets to OMB
3. Passback, negotiations, & appeals between agencies and EOP
4. President makes final decisions and sends Budget Request to Congress
5. Congress reviews, considers, & approves overall Budget Request
6. Appropriations hearings with agencies & EOP on individual programs
7. Congress marks up & passes agency appropriations bills
8. President signs or vetoes appropriations bills
9. Agencies make decisions on allocation of resources consistent with enacted appropriations and program plans
What about Roadmaps or Challenge Documents?

- Interagency Policy (NSTC)
- Competing Priorities
  - Ops vs R&D?
  - Priority A or B?
- Administration Priorities
- OMB instructions

- S&T PMs
- Policy & Budget
- Department
- Policy & Budget
- OMB Analysis & Budgeting
- EOP Review
- Agency Passback

Action

Influence
The NSTC was established by Executive Order in 1993. This Cabinet-level Council is the principal means within the executive branch to coordinate science and technology policy across the diverse entities that make up the Federal research and development enterprise.
Subcommittee on NDRD

Chair: OSTP

Membership:
- U.S. Department of Defense (DOD)
- Department of Energy (DOE)
- Department of Health and Human Services (HHS)
- Department of Homeland Security (DHS)
- Department of Justice (DOJ)
- Department of State (DOS)
- Director of National Intelligence (DNI)
- Environmental Protection Agency (EPA)
- Nuclear Regulatory Commission (NRC)
- National Science Foundation (NSF)

Representation from White House Staff
- Office of Science & Technology Policy (OSTP)
- Homeland Security Council (HSC)
- National Security Council (NSC)
- Office of Management and Budget (OMB)
- Office of the Vice President (OVP)
Subcommittee on NDRD

Charter (Highlights)

- Catalog current and programmed RN countermeasure R&D activities
- Develop a mechanism and criteria for high-level prioritization of unique capability needs to reduce the major risks associated with a radiological or nuclear attack, including user requirements and threat characterization
- Perform and document a gap analysis of required capabilities addressed by technology against the list of ongoing and future programs
- Identify technology shortfalls, as well as redundancies and program activities
- Provide guidance on options and trade-offs to establish a robust R&D program for the USG
- Document the path forward for iteratively assessing and improving the capabilities in the future
NDRD Scope

- The scope of RDT&E activities addressed by the prioritization ranges from basic science to technology transition and operational evaluation
- Functional areas considered within individual working groups will be:
  - Non-proliferation in support of nuclear defense
  - Interdiction of nuclear and radiological materials
  - Render safe
  - Attribution
  - Incident response and recovery
Requirements

Domestic Nuclear Detection (HSPD-14, April 2005)

National Security Strategy of the United States of America, March 2006

National Strategy for Combating Terrorism, September 2006

Medical Countermeasures Against Weapons of Mass Destruction (HSPD-18), January 2007

FY 2009 Administration Research and Development Budget Priorities, OSTP/OMB joint memo, August 2007
Nonproliferation Working Group

Mission

• The Non-Proliferation Working Group (NPWG) focused on determining the unique capabilities and solutions necessary for effectively preventing the unauthorized spread of nuclear weapons related technologies based on the uranium and plutonium fuel cycles.

• NNSA Chair; NNSA, DOD, DNI members
Nonproliferation Working Group Priorities

• Develop remote sensing technologies for detecting and characterizing SNM production activities.
• Develop new remote sensing capabilities for detecting and characterizing other nonproliferation activities.
• Develop databases of signatures and observables for all SNM production processes.
• Develop advanced computational capabilities for detecting proliferation, production, diversion, transport, assembly, and use of nuclear weapons, using simulation, algorithm development, and modeling.
• Improve enabling, test and evaluation infrastructure (e.g., facilities, equipment, tools, and techniques). Assess analytical tools that support the broader mission of evaluating and validating nuclear nonproliferation.
Interdiction Working Group

Mission

• The Interdiction Working Group (IWG) focused on determining the unique capabilities and solutions necessary for the effective detection, disruption or prevention of the movement of any radiological or nuclear (RN) device or material.

• DOD, DHS, and DOE co-chairs; DOD, DHS, DOE and DNI members
Interdiction Working Group
Priorities

- Develop active and passive systems for detection of shielded and unshielded RN materials
- Develop detector materials and systems to locate and identify nuclear materials for stand-off detection
- Adapt detection systems for use at sea
- Adapt detection systems for use in air travel
- Adapt detection systems for use in unattended regions and at borders
Render Safe Working Group

Mission

• The Render-Safe Working Group (RSWG) focused on determining the unique capabilities and solutions necessary to perform diagnostics and assessment of suspected nuclear and radiological devices, perform the technical operations in support of render safe procedures providing for the interruption of functions or separation of essential components to prevent a detonation or munition function, and safely package the device for transport to an appropriate facility for final disposition.

• DOD and DOE chairs; DOD, DOE, FBI members
Attribution Working Group

Mission

• The Attribution Working Group (AWG) focused on determining the unique capabilities and solutions necessary for the effective conducting of technical nuclear forensics for RN devices and materials.

• DHS/DNDO National Technical Nuclear Forensics Center (NTNFC) chair; DOD (DTRA and Air Force), DOE/NNSA, DHS/DNDO, DOJ (FBI), DOS, DNI, and EPA members
Attribution Working Group Priorities

• Laboratory analysis methods, screening tools, and increased throughput
• Ground collection
• Prompt collection and improved analysis of signals from nuclear phenomena
• Yield/mass determination and RDD total activity determination
• Knowledge management capabilities
Response and Recovery Working Group

Mission

- The Response and Recovery Working Group (RRWG) focused on determining the unique capabilities and solutions necessary for effective response and recovery from radiological or nuclear events resulting from an attack using a stolen weapon, IND, or an RDD.
- EPA and DHS co-chairs; EPA, DHS, HHS, DOD, and DOE members
Response and Recovery Working Group Priorities

- Develop increased local capability and improved citizen awareness to effectively execute shelter-in-place, evacuation, or other protective and response action decisions following an IND incident
- Develop and make available improved therapeutics and diagnostics for radiation injury
- Develop capability to decontaminate critical infrastructure (e.g., transportation, power, water/wastewater, communications, medical, and essential government services)
- Develop long-term medical care and management capabilities, including population monitoring
- Develop an empirically based risk communication program for key decision makers
The White House Complex