

**President's Council of Advisors on Science and Technology (PCAST)  
THIRD MEETING  
January 7, 2010  
MINUTES**

**National Academy of Sciences Building**  
Lecture Room  
2100 C Street, NW  
Washington, DC

Members Present: John P. Holdren (Co-Chair), Eric Lander (Co-Chair), Harold Varmus (Co-Chair), Rosina Bierbaum, Christine Cassel, Christopher Chyba, S. James Gates Jr. , Shirley Ann Jackson, Richard C. Levin, Chad Mirkin, Ernest J. Moniz, Craig Mundie, Ed Penhoet, William Press, Maxine Savitz, Barbara Schaal, Eric Schmidt, Daniel Schrag, David E. Shaw, Mario Molina

Members Absent: Ahmed Zewail

Staff: Deborah Stine, Mary Maxon

Public Attendance: Approximately 100 observers attended.

Video Webcast Archive: The archive of the video webcast is available at.  
<http://whitehouse.gov/ostp/pcast>.

The President's Council of Advisors on Science and Technology (PCAST) convened in open session at 10:00 am with Dr. Holdren, Dr. Lander, and Dr. Varmus presiding on Thursday, January 7, 2010.

Agenda Item 1: Welcome and Review of PCAST in 2009

Dr. Holdren, Dr. Varmus, and Dr. Lander, PCAST Co-Chairs, opened the meeting and welcomed the participants at 10:00 am.

Dr. Holdren opened with remarks on the important role science and technology played in 2009. Dr. Holdren then described several instances where technology and innovation have been at the forefront of President Obama's agenda as represented in speeches, programs in the Recovery Act, STEM Education activities, and by appointing the first Chief Technology Officer and the first Chief Information Officer. Dr. Holdren finished by giving a brief overview of the work of PCAST, mentioning initiatives in health information technology; influenza vaccinology; nanotechnology; and science, technology, engineering, and math (STEM) education.

## Agenda Item 2: Department of Energy Research, Development, and Demonstration Programs

Kristina Johnson, Under Secretary of Energy, and Mark Handschy, Senior Science and Technology Advisor, from the Department of Energy, described Department of Energy (DOE) energy research, development, and demonstration activities.

Ms. Johnson described general and specific Department of Energy efforts aimed to build and develop a clean energy based economy. Ms. Johnson gave a brief overview of budget allocations for the Department of Energy.

PCAST members commented and asked questions of Dr. Johnson. The discussion focused on issues such as transportation; energy supply including nuclear, fossil and renewable energy; and carbon capture.

## Agenda Item 3: Health Technology Innovations

Atul Gawande, a medical doctor and author, discussed inefficiencies in medical technology and described methods of improvement. Dr. Gawande stressed the importance of health technology innovation and the need for a more coordinated effort to make health care more effective and efficient through research, technology, and best practices. Dr. Gawande discussed using uniform checklists in hospitals to systematize surgeries and other common procedures as one example of effective health innovation.

PCAST members commented and asked questions of Dr. Gawande. Questions concentrated on the lack of interest and investment in this area, the role of physicians in medical technology advancement, the need for collaboration between business, technology and medical fields and what a future model of a health system could look like.

The Co-Chairs adjourned this portion of the meeting for lunch break at 12:15.

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The meeting reconvened around 2:30 PM.

## Agenda Item 4: Office of Science and Technology Policy's Energy & Environment Division

OSTP's Associate Director for Environment, Shere Abbott updated PCAST on the Environment and Energy Division of OSTP and its ongoing work. These activities include listing water standards, green jobs, and ocean acidification. Ms. Abbott spoke about her division's role in raising the visibility of environment- and energy-related issues on the President's agenda, and the ways in which the White House is reaching out to the public. Ms. Abbott also described how the Division plays a role in guiding the energy and environment R&D budgets. In addition, the division participates in international activities focused on cooperation with other nations on environmental policies.

PCAST members commented and asked questions of Dr. Abbott. Questions concentrated on international environmental data exchanges, sustainable agriculture, private and commercial cooperation, and carbon capture.

#### Agenda Item 4: Defense Advanced Research Projects Agency (DARPA)

Dr. Regina Dugan, Director of the Defense Advanced Research Projects Agency (DARPA) and Dr. Kaigham Gabriel, the Deputy Director, spoke during this session. Dr. Dugan described DARPA's organization: its mission to prevent and avoid strategic surprise for the nation's defense, and its leadership in the creation of new industries and sources of economic growth in the United States. Dr. Dugan also spoke of DARPA's manufacturing initiative that focuses on maintaining strong industrial and manufacturing capabilities. Dr. Dugan also provided her thoughts on future challenges and opportunities where a PCAST analysis might prove useful.

PCAST members commented and asked questions of the presenters. The discussion focused on issues such as the differing nature of manufacturing in the modern economy, the difference between basic research and applied development, the use of a DARPA model in education innovation. Also discussed were, DARPA's method in funding research, managing programs, handling cyber security risks and asymmetrical warfare, and creating manufacturing capabilities for defense and economic purposes.

#### Agenda Item 4: Department of Commerce Science, Technology, and Innovation Policy

Secretary of Commerce Gary Locke spoke about the importance of creating science and technology jobs and the role of the Commerce Department to in saving and creating American jobs.

PCAST members commented and asked questions of Secretary Locke. Questions focused on the new Office of Innovation within the Department of Commerce, the Advanced Technology Program (ATP) in the National Institute of Standards and Technology (NIST), interagency coordination, stimulating research in the private sector, patent reform, and international collaboration.

#### Agenda Item 5: Public Comment Session

PCAST heard from members of the public during this session. The following individuals provided oral comments to PCAST:

- Tawonda Johnson, Press Secretary of APS Physics
- Paula Stern, Chairwoman of the Stern Group and Policy and Media Consultant, Center for Women and Information Technology.
- Robert Berdahl, President, Association of American Universities
- Robert Samors, Associate Vice President of Innovation and Technology Policy, Association of Public and Land Grant Universities
- Eugenie Mielczarek, Professor of Physics, George Mason University in Fairfax
- Dmitry Novik

Dr. Holdren, Dr. Lander, and Dr. Varmus adjourned the meeting at 6:00 pm.

Respectfully Submitted:

[signed]

Deborah D. Stine  
Executive Director  
President's Council of Advisors on Science and Technology

[signed]

Mary E. Maxon  
Deputy Executive Director  
President's Council of Advisors on Science and Technology

Approved:

[signed]

John P. Holdren  
President's Council of Advisors on Science and Technology

[signed]  
Eric Lander  
Co-Chair  
President's Council of Advisors on Science and Technology

[signed]  
Harold Varmus  
Co-Chair  
President's Council of Advisors on Science and Technology

Attachments:

Appendix A: Powerpoint Presentations

Appendix B: Written Public Comment