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## INTRODUCTION

We are pleased to present you with *Sustainability at the National Academies*, a monthly update highlighting activities related to sustainable development from throughout the National Academies. Please visit our website for additional information on these and other activities at <http://sustainability.nationalacademies.org>.

The [Roundtable on Science and Technology for Sustainability](#) provides a unique forum for sharing views, information, and analyses related to sustainability. The goal for the Roundtable is to mobilize, encourage, and use scientific knowledge and technology to help achieve sustainability goals and to support the implementation of sustainability practices. Through its activities, the Roundtable identifies new ways in which science and technology can contribute to sustainability. What follows is a brief summary of sustainability-related activities being conducted throughout the National Academies.

You are receiving this update based on your participation in ongoing or past activities of the Roundtable. If you would prefer not to receive future monthly updates or would like to be added to the recipient list, please contact Emi Kameyama at 202-334-2694 or [Sustainability@nas.edu](mailto:Sustainability@nas.edu) or visit our website.

## NEWS

### **America's Climate Choices: Committee Members, Panelists Discuss Study Goals in New Video**

In a new video from the National Academies, experts serving on the America's Climate Choices study committee and panels talk about the project, which aims to inform and guide the nation's response to climate change. The video takes an in-depth look at the process through which these experts will come to consensus, and highlights how crucial the choices we face now will be for decades to come. Congressman Alan Mollohan (D-WV) provides his perspective as the initiator of the project. The video can be viewed on: <http://americasclimatechoices.org>.

## NEW REPORTS

### **America's Energy Future: Technology and Transformation: Summary Edition**

The National Academy of Sciences and the National Academy of Engineering have released a report that analyzes the potential of a wide range of technologies for generation, distribution, and conservation of energy. The report considers technologies to increase energy efficiency, coal-fired power generation, nuclear power, renewable energy, oil and natural gas, and alternative transportation fuels. It assesses the associated impacts and projected costs of implementing each technology and categorizes them into three time frames for implementation.

[http://www.nap.edu/catalog.php?record\\_id=12710](http://www.nap.edu/catalog.php?record_id=12710)

### **Letter Report on the Orbiting Carbon Observatory**

A climate treaty could be negotiated by the end of 2009, yet current methods for estimating greenhouse gas emissions have limitations for treaty monitoring and verification. This National Research Council letter report assesses whether NASA's Orbiting Carbon Observatory (OCO), which failed on launch in early 2009, could be of use in monitoring emissions. The report concludes that the observatory could have tested the engineering designs and measurement concepts required to develop a robust capability for monitoring emissions from space.

[http://www.nap.edu/catalog.php?record\\_id=12723](http://www.nap.edu/catalog.php?record_id=12723)

### **Review of the St. Johns River Water Supply Impact Study: Report 1**

The St. Johns River – the longest river in Florida at 310 miles – supports an extensive and diverse array of ecosystems. However, the St. Johns River Water Management District is seeking new water sources, beyond groundwater, to support a rapidly expanding human population in the watershed. One alternative would be to withdraw 262 million gallons of water per day from the river. To gauge the potential environmental effects, the Water Management District has undertaken a Water Supply Impact Study and has asked the National Research Council to review its scientific aspects and provide advice to the ongoing effort. This report identifies the highest priorities for the District as the impact study continues: to integrate ecological analyses, with each other and with surface water studies; to assemble basic data on sources, sinks, and storage of water and nutrients; and to apply advanced hydrologic and wetland modeling. These measures would allow the District to better understand the effects of the proposed water withdrawal, including the nature and extent of dewatering and partial dewatering that may alter the area's biology.

[http://www.nap.edu/catalog.php?record\\_id=12733](http://www.nap.edu/catalog.php?record_id=12733)

### **Near-Earth Object Surveys and Hazard Mitigation Strategies: Interim Report**

The United States is currently the only country with an active, government-sponsored effort to detect and track potentially hazardous near-Earth objects (NEOs). Congress directed NASA to ask the National Research Council to review NASA's NEOs programs. This interim report addresses some of the issues associated with the survey and detection of NEOs. The final report will contain findings and recommendations for survey and detection, characterization, and mitigation of near-Earth objects based on an integrated assessment of the problem.

[http://www.nap.edu/catalog.php?record\\_id=12738](http://www.nap.edu/catalog.php?record_id=12738)

### **Benefit/Cost Analysis of Converting a Lane for Bus Rapid Transit**

Transportation Research Board (TRB)'s National Cooperative Highway Research Program (NCHRP) Research Results Digest 336: Benefit/Cost Analysis of Converting a Lane for Bus Rapid Transit examines issues, potential solutions, and outstanding questions related to converting a roadway lane to bus rapid transit use.

[http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp\\_rrd\\_336.pdf](http://onlinepubs.trb.org/onlinepubs/nchrp/nchrp_rrd_336.pdf)

### **The Disposal of Activated Carbon from Chemical Agent Disposal Facilities**

In March 2008, the Chemical Materials Agency asked the National Research Council to study, evaluate, and recommend the best methods for proper and safe disposal of the used carbon from the operational disposal facilities. This volume examines various approaches to handling carbon waste streams from the four operating chemical agent disposal facilities. The approaches that will be used at each facility will ultimately be chosen bearing in mind local regulatory practices, facility design and operations, and the characteristics of agent inventories, along with other factors such as public involvement regarding facility operations.

[http://books.nap.edu/catalog.php?record\\_id=12646](http://books.nap.edu/catalog.php?record_id=12646)

## **NEW PROJECTS**

### **The National Academies' Second Sustainability R&D Forum, Transitioning to Sustainability: The Challenge of Developing Sustainable Urban Systems**

The National Academies' Roundtable on Science and Technology for Sustainability will host a forum on September 23, 2009 to foster discussion of current and planned R&D activities on issues of sustainability in urban systems. More than half of the world's population now lives in urban areas and the share of urban residents is expected to grow. Cities are already strained in their capacities to provide healthy, safe, and affordable environments for living and working. The challenge is thus to develop more environmentally sustainable urban systems that also provide for sustainable economic growth.

<http://sustainability.nationalacademies.org/Urban.shtml>

### **Indicators for Understanding Global Climate Change**

The National Academy of Sciences, through its National Research Council, will facilitate the increased involvement of scientists in answering questions related to climate and environmental change, energy, natural disasters, and national security. The goal is both to advance scientific understanding of global climate and other environmental and disaster-related phenomena, and consider the implications for both fundamental scientific understanding and national security.

<http://www8.nationalacademies.org/cp/projectview.aspx?key=49132>

### **Stabilization Targets for Atmospheric Greenhouse Gas Concentrations**

The stabilization of atmospheric greenhouse gas concentrations and the avoidance of serious or irreversible impacts on the earth's climate system are a matter of critical concern in both scientific and policy arenas. Using the most current science available, this study will evaluate the implications of different atmospheric concentration target levels and explain the uncertainties inherent in the analyses to assist policy makers as they make decisions about stabilization target levels for atmospheric greenhouse gas concentrations.

<http://www8.nationalacademies.org/cp/projectview.aspx?key=49111>

## **Standards of Care for Use in Disaster Situations**

In response to a request from the U.S. Department of Health and Human Services (HHS) Office of the Assistant Secretary of Preparedness and Response, the Institute of Medicine has convened an ad hoc committee to conduct a 2-phase activity on standards of care for use in disaster situations. The committee is focusing attention on developing guidance to establish standards of care that should apply to disaster situations – both naturally-occurring and man-made – where there are scarce resources. Ethical principles will be incorporated into the standards.

<http://www8.nationalacademies.org/cp/projectview.aspx?key=49130>

## **UPCOMING MEETINGS**

### **August**

**America's Climate Choices: Panel on Adapting to the Impacts of Climate Change,**  
August 24-26, 2009, Boulder, CO

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3653>

**America's Climate Choices,** August 31-September 1, 2009, Irvine, CA

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3723>

### **September**

**Assessment of Resource Needs for Development of Fuel Cell and Hydrogen Technology & Potential Impacts of Plug-In Hybrid Electric Vehicles,**  
September 1-2, 2009, Washington, DC

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3689>

**Clean Water Act Implementation across the Mississippi River Basin,** September 1-2, 2009, Moline, IL

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3620>

**Development of an Integrated Science Strategy for Ocean Acidification Monitoring, Research, and Impacts Assessment,** September 1-2, 2009, Washington, DC

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3627>

**Review of Near-Earth Object Surveys and Hazard Mitigation Strategies,**  
September 1-2, 2009, Irvine, CA

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3741>

**America's Climate Choices: Panel on Informing Effective Decisions and Actions Related to Climate Change,** September 1-3, 2009, Irvine, CA

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3751>

**Sustainability: The Path Forward?,** September 2, 2009, Woods Hole, MA

[http://www.nasonline.org/site/PageServer?pagename=Jonsson\\_Upcoming\\_Events](http://www.nasonline.org/site/PageServer?pagename=Jonsson_Upcoming_Events)

**Workshop on Guidance for Establishing Standards of Care for Use in Disaster Situations,** September 2, 2009, Washington, DC

<http://www.iom.edu/CMS/3740/72417/72451.aspx>

**Indicators for Understanding Global Climate Change,** September 2-3, 2009, Washington DC

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3757>

**Review of Sea Turtle Population Assessment Methods,** September 8-10, 2009, Washington, DC

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3562>

**Preventing the Global Epidemic of Cardiovascular Disease (CVD): Meeting the Challenges in Developing Countries**, September 9-10, 2009, Irvine, CA

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3725>

**Review of EPA's Title 42 Hiring Authority for Highly Qualified Scientists and Engineers**, September 10-11, 2009, Washington, DC

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3712>

**Strategic Planning for the Florida Citrus Industry: Citrus Greening and the Future**, September 10-11, 2009, Washington, DC

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3699>

**2009 U.S. Frontiers of Engineering Symposium**, September 10-12, 2009, Irvine, CA

<http://www.nae.edu/Programs/FOE/USFOE/2009USFOE.aspx>

**Arts on Foot 2009**, September 12, 2009, Washington, DC

<http://www.koshland-science-museum.org/events/upcomingevent.jsp?id=344>

**America's Climate Choices: Panel on Limiting the Magnitude of Future Climate Change**, September 14-16, 2009, Irvine, CA

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3738>

**The Domestic and International Impacts of the 2009 Influenza A H1N1 Pandemic: Global Challenges, Global Solutions**, September 15-16, 2009, Washington, DC

<http://www.iom.edu/CMS/3783/3924/71416.aspx>

**Nutrient Requirements of Fish and Shrimp**, September 16-18, 2009, Woods Hole, MA

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3285>

**Emerging Science of Climate Change**, September 17, 2009, Washington, DC

<http://www.koshland-science-museum.org/events/upcomingevent.jsp?id=360>

**Independent Scientific Review of Everglades Restoration Progress**, September 20-22, 2009, West Palm Beach, FL

<http://www8.nationalacademies.org/cp/meetingview.aspx?MeetingId=3407>

**Doomsday Vaults and the Future of Food**, September 23, 2009, Woods Hole, MA

[http://www.nasonline.org/site/PageServer?pagename=Jonsson\\_Upcoming\\_Events](http://www.nasonline.org/site/PageServer?pagename=Jonsson_Upcoming_Events)

**The National Academies' Second Sustainability R&D Forum, Transitioning to Sustainability: The Challenge of Developing Sustainable Urban Systems**, September 23, 2009, Washington, DC

<http://sustainability.nationalacademies.org/Urban.shtml>

**The Roundtable on Science and Technology for Sustainability**, September 24-25, 2009, Washington, DC

<http://sustainability.nationalacademies.org/roundtable.shtml>

**12th Annual Symposium on Chinese-American Kavli Frontiers of Science**, September 26-28, 2009, Kunming City, China

[http://www.nasonline.org/site/PageServer?pagename=FRONTIERS\\_cafos\\_2009program](http://www.nasonline.org/site/PageServer?pagename=FRONTIERS_cafos_2009program)

## **October**

**"I've Looked at Clouds That Way" – Weaving American Indian Perspectives into the Study of Weather and Climate**, October 1, 2009, Woods Hole, MA

[http://www.nasonline.org/site/PageServer?pagename=Jonsson\\_Upcoming\\_Events](http://www.nasonline.org/site/PageServer?pagename=Jonsson_Upcoming_Events)

**The Great Warming**, October 14, 2009, Irvine, CA

[http://www.nasonline.org/site/PageServer?pagename=Beckman\\_DV\\_Fall2009](http://www.nasonline.org/site/PageServer?pagename=Beckman_DV_Fall2009)

**2009 China-America Frontiers of Engineering Symposium**, October 17-21, 2009, Beijing and Changsha, China

<http://www.nae.edu/Programs/FOE/CAFOE/page200912230.aspx>

**Infectious Disease in the Age of Google**, October 22, 2009, Washington, DC

<http://www.koshland-science-museum.org/events/upcomingevent.jsp?id=363>

**Providing Healthy and Safe Foods as We Age**, October 29-30, 2009, Washington, DC

<http://iom.edu/CMS/3788/4598/70939.aspx>

## **ONGOING ACTIVITIES**

### **PNAS Sustainability Science, Special Features**

PNAS offers a series of special feature issues that highlight emerging fields in the physical, social, and biological sciences and are edited by leaders in the field. Special Features include a cluster of Perspectives and peer-reviewed research articles. As a service to readers, Special Features are freely available online from the date of publication.

<http://www.pnas.org/misc/sustainability.shtml>

### **From the August 2009 Issue:**

**Preventing the Collapse of the Baltic Cod Stock through an Ecosystem-based Management Approach**

<http://www.pnas.org/content/106/34/14722.full>

**Ecosocial Consequences and Policy Implications of Disease Management in East African Agropastoral Systems**

<http://www.pnas.org/content/106/31/13136.full>

To learn more about sustainability activities, both in the STS program and throughout the other boards and committees of the National Academies, please visit our webpage at:

<http://sustainability.nationalacademies.org/ongoing.shtml>

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