

**Summary Minutes of the United States Environmental Protection Agency (U.S. EPA)
Science Advisory Board (SAB) Research Budget Work Group – March 1, 2012**

Members of the SAB Research Budget Work Group: See Roster¹

Date and Time: March 1, 2012, 1:00 p.m. to 4:00 p.m.

Location: By telephone only

Purpose: to receive short briefings on the President’s FY 2012 research budget request for EPA and ask questions of Agency personnel

SAB Participants:

Dr. Taylor Eighmy, Chair	Dr. Christine Moe
Dr. Terry Daniel	Dr. H. Keith Moo-Young
Dr. Costel Denson,	Dr. Eileen Murphy
Dr. Barbara Harper	Dr. James Opaluch
Dr. Kimberly Jones	Dr. Duncan Patten,
Dr. Nancy Kim	Dr. Stephen Roberts
Dr. Cecil Lue-Hing	Dr. Peter Thorne
Dr. James Mihelcic	Dr. Paige Tolbert

SAB Staff Office Participants

Dr. Angela Nugent, Designated Federal Officer (DFO)

Agency Presenters Identified on the Agenda

Ms. Carol Terris, Office of the Chief Financial Officer
Dr. Robert Kavlock, Office of Research and Development
Dr. Albert McGartland, Office of Policy, National Center for Environmental Economics

Other Participants – see Attachment A

Teleconference Summary:

The committee discussion at the teleconference followed the issues and timing as presented in the agenda.²

Convene Teleconference

Dr. Angela Nugent, SAB DFO, convened the advisory teleconference and welcomed the group. She noted that the teleconference was announced in the Federal Register³ and that there had been no requests for oral public comments or written comments provided to the work group. She noted that all members had complied with the She noted that there had been no request for oral comment and that no written public comments had been received prior to the teleconference. She noted that all review and background material for the teleconference were posted on the web page for the teleconference. These materials include: the EPA's Budget in Brief,⁴ FY 2013 President's Budget for ORD,⁵ Strategic Research Action Plans for ORD's six research programs,⁶ an introduction to ORD,⁷ ORD Recent Research Accomplishments – Highlights⁸, President's Budget for Regulatory/Economic-Management and Analysis and, the Economics and Decision Sciences Overview,⁹ and tables and graphs representing ORD budget trends.¹⁰

Purpose and Review of the Agenda

Dr. Taylor Eighmy, the SAB Work Group Chair, reviewed the agenda. He thanked the work group members for their advance work preparing for the teleconference and thanked the EPA presenters and SAB staff. He asked presenters to be brief because of the time constraints for the teleconference and the need to reserve time for work group questions.

FY 2013 President's Budget Request for the EPA

Ms. Carol Terris, Deputy Director, EPA Office of the Chief Financial Officer, Office of Budget provided an overview of the President's FY 2013 budget request for the EPA.¹¹ She emphasized the importance of innovation and science for the administration and for the EPA Administrator. After summarizing the budget request by appropriation, she listed significant reductions and justifications, program eliminations and program increases. Increases include funding for state and tribal programs; implementation of next generation compliance and other core programs; and science-based programs, such as fuel standards and certification, chemical safety, and hydraulic fracturing research, the sole ORD budget highlight she mentioned in her overview.

After her presentation, Ms. Terris responded to work group questions. She noted that the EPA is collaborating with the U.S. Geological Survey and U.S. Department of Energy on a work plan for hydraulic fracturing research. She clarified that ORD's research related to the Great Lakes, Chesapeake Bay, and Gulf of Mexico was separate from funds for the EPA's geographic programs. One member asked why the percentage increase for Science and Technology was small compared to increases for other EPA accounts, if research were a priority. Ms. Terris responded that the EPA is attempting to maintain support for research in the fact of reductions across the board. For some programs, apparent increments in the FY 2013 budget request reflect changes made by the bill to the 2012 baseline, which did not reflect the President's budget request in 2012.

FY 2013 President's Budget Request for ORD

Mr. Lek Kadeli, the ORD Acting Assistant Administrator, thanked the SAB for its feedback and engagement on budget issues over the years. He welcomed Dr. Robert Kavlock as ORD Acting Assistant Administrator for Science and expressed appreciation for Dr. Kevin Teichman's past work with the SAB and ORD budget.

Dr. Kavlock summarized highlights of the overall ORD budget and then introduced ORD National Program Directors who described recent accomplishments for their programs, expected future accomplishments, and major changes for their programs in the President's budget request. All the ORD presenters spoke from a common set of presentation slides.¹² Dr. Kavlock noted that the FY 2013 President's Budget requested \$576 million for ORD, an increase of \$8.2 million from the FY 2012 enacted budget. Major areas of emphasis are hydraulic fracturing research, the Tox21 Program (working with Federal partners on new technology for testing toxicity of chemicals, and a partnership with the Department of Defense to develop and test "net zero" environmental technology and transfer successes to U.S. communities). He showed graphs showing resource trends in constant dollars that showed erosion of ORD's purchasing power. STAR grants remain a budget priority because they stimulate ORD scientists through interactions with the outside scientific community. Dr. Kavlock noted that research planning and budgeting are separate activities and that the budget was designed to support the objectives in ORD's Strategic Research Action Plans. He asked the SAB to provide comments on the budget at a strategic level, not at a more detailed level.

Brief presentations on the ORD research programs followed. Dr. Dan Costa addressed the Air, Climate and Energy (ACE) program. Ms. Jennifer Orme-Zavaleta addressed the Safe and Sustainable Water Resources (SSWR) program. Dr. Rick Linthurst addressed the Sustainable and Health Communities (SHC) program. Dr. Kavlock addressed the Chemical Safety for Sustainability (CSS) program. Dr. Stan Barone addressed the Human Health Risk Assessment (HHRA) program. Dr. Gregory Sayles addressed the Homeland Security (HS) program. Dr. Peter Preuss summarized plans to continue ORD's innovation efforts under the President's budget request in three ways: additional Pathfinder Innovation projects; open innovation projects; and signature projects that exemplify new ORD directions on sustainability.

After the presentations concluded, the work group chair asked members for their questions for each program area. Dr. Costa clarified that the "other" category within the ACE program primarily involved biofuel research. He also noted that ORD is focusing its lifecycle assessment on the evolving energy landscape. ORD is identifying existing models for lifecycle assessment and is focusing on "getting them to work together and be applied" to energy lifecycle questions. ORD is working with partners to identify needs for lifecycle assessment and how ORD can respond to those needs. In response to a question about the direction and amount of change in the ORD budget request for climate-related research, Ms. Stacey Radkin from ORD commented that technical budget details involving net changes in payroll resources make it difficult to crosswalk the budget numbers in ORD's slides and the budget narrative provided to the SAB.

When asked about the importance of economic, social and behavioral sciences to the ACE program, Dr. Costa noted that the ACE program currently has an economist on staff and, as a

result, has primarily focused on economics as its social science investment. ORD generally has not “figured out how to do social science” effectively as part of its program. The STAR program is “working on that” to bring social science into ORD. The ACE program is beginning to work with the strong economic team in the Office of Air Quality Protection and Standards to make use of its expertise, as applied to ACE issues.

The work group chair then asked for questions for the SSWR program. In response to questions, Ms. Orme-Zavaleta noted that ORD plans to maintain a commitment to research on drinking water technology related to small systems. ORD is establishing a center focused on these issues in 2012 and considerable start-up costs expended this year will not be needed in 2013. The requested budget for 2013 reflects a difference in timing, not priority. She also explained that, although ORD has laboratories in Duluth, Gulf Breeze, and Narragansett, ORD’s research that focuses on the Chesapeake Bay, Great Lakes, and Gulf of Mexico is problem-driven and separate from funding for geographic programs in the EPA’s Office of Water (OW). Often there is complementarity between ORD’s work and the work of geographic programs and in those cases, ORD works closely with OW. In the case of nitrogen, for example, ORD might look at different modeling approaches that might affect nitrogen in the Gulf of Mexico and will coordinate with OW. Similar coordination and consultation would happen with research that might be related with the EPA’s Great Lakes initiative. Some SSWR research efforts in this area will also require coordination with ORD’s CSS program.

In response to a question about how ORD is coordinating its nitrogen research, Ms. Orme-Zavaleta noted that ORD is moving into an implementation phase. The SSWR program has the lead in ORD, coordinating principally with the ACE and SHC program. ORD is “taking stock of primary drivers and issues” and is “creating a vision and identifying how to move research forward.” ORD has found the SAB report *Reactive Nitrogen in the United States* helpful. ORD is coordinating with OW, the Office of Chemical Safety and Pollution Prevention (OCSPP), Office of Air and Radiation and Office of Chemical Safety and Pollution Prevention and regional offices at the EPA. ORD is also coordinating with U.S. Geological Survey and the U.S. Department of Agriculture.

Ms Orme-Zavaleta also clarified that the “communities of practice” described in the SSWR description of the FY 2013 President’s Budget for ORD is not solely under the SSWR purview. The “communities of practice” are meant to engage scientists across ORD programs on some topics of common importance. One communities of practice” will address modeling; especially advance planning for interoperability of models.

The work group then turned to questions for the SHC program. Dr. Rick Linhurst clarified that the SHC is continuing to support the C-FERST system as a priority, although it was not explicitly identified in the *Sustainable and Healthy Communities; Strategic Research Action Plan 2012-2016*. He noted that this ORD product will be “wrapped together” with regional vulnerability plans and the National Atlas for Sustainability to be completed in 2013.

A work group member asked how ORD’s requested budgets were to be allocated within the SHC program. He noted that the SHC strategic research action plan highlighted seven expected accomplishments for 2013 and that the President’s Budget requests \$184 million for the SHC

program. He asked ORD to provide “a rough idea” of the resources for the highlighted accomplishments and the distribution of requested resources across the SHC themes. Dr. Linthurst responded that the requested budget is for all deliverables and Dr. Kavlock commented that ORD is requesting “higher-level strategic advice.” The key question is: “in aggregate are the requested resources adequate?” Dr. Linthurst committed to provide the work group with a rough estimate of resources. Most of the resources are in theme two, which addresses human health and ecosystem services. Theme 3 involves funding for nitrogen and ORD’s work on the Report on the Environment, both important topics for the EPA program offices. Theme 4 has the fewest resources, so new products like the TRIO system, receive limited funding. Decision support in theme 1 receives an “in-between” level of support.

The next topic for discussion was the CSS. In response to a question about evaluation of this program, Dr. Kavlock noted that ORD is developing a research management system to monitor planned products, their schedule, and outputs. ORD is instituting a process for monthly calls with clients and partners for ORD themes to focus on outputs and projects. There are planned monthly webinars where ORD will provide presentations on a component of their project. These webinars will reserve time for feedback from clients on the ORD research. ORD is developing procedures and processes to track the research development process and provide accountability for ORD clients and partners.

Dr. Kavlock then responded to a question about the resource challenges the CSS program has encountered, how it has identified problems and how it has adjusted resources to meet goals. Dr. Kavlock noted that the CSS has encountered no major problems. The principal barrier has been the delay in receiving an approved operating plan. This delay has slowed down progress, since researchers do not know when they will be able to commit resources.

He then addressed a question about integration of CSS work products in agency risk assessments. He noted that the joint report from the SAB and ORD Board of Scientific Counselors in 2011 [*Office of Research and Development (ORD) New Strategic Research Directions: A Joint Report of the Science Advisory Board (SAB) and ORD Board of Scientific Councilors (BOSC)*] included comments about the importance of translating new CSS tools into risk assessment processes. The *Chemical Safety for Sustainability; Strategic Research Action Plan 2012-2016* responds to this concern. Theme 7 (Dashboards) includes tools for using CSS products and outputs. The CSS program is designing this theme in consultation with OW and OSCPP and intends these products to be available, as much as possible, as public tools. Theme 8 is an evaluation theme. ORD is developing survey tools for client and program offices to understand their awareness of CSS and client and program needs for tools. ORD will use survey results to design training or identify needed change in directions.

The fifth ORD program, HHRA, was the next topic for discussion. Ms. Becki Clarke clarified that funds identified for redirection for SAB review of Integrated Risk Information System (IRIS) assessments were funds that would have been previously identified for contractor review. Dr. Stan Barone responded to a question about how collaboration between the HHRA and CSS programs would be integrated from a budget standpoint. The “Next Gen” assessment program in the CSS program is the primary bridge and is included in the CSS Evaluation Theme 8. He noted that activities are underway to plan a “Next Gen” workshop in collaboration with the Emerging

Science Committee of the National Academy of Sciences and the national Institute for Environmental Health Sciences. He also noted that the SAB plans to devote a meeting this spring to this topic.

Dr. Gregory Sayles addressed questions pertaining to the last ORD program, Homeland Security. He noted that while the President's Budget request projects a decrease in water infrastructure research, the program is evolving tools for contamination warning systems involving real time monitoring tools. The program is increasing investment in that particular area.

Dr. Sayles also explained that ORD does not know the full extent of responsibilities linked to recent legislation assigning the EPA responsibility for responding to food and agriculture emergencies. The Department of Homeland Security and other federal agencies are discussing how to respond to mandates in the legislations. Once the EPA's role is clarified, ORD expects program offices to turn to them for their science needs. He did not expect this new responsibility to have a "huge" impact on ORD's HS research program.

Dr. Sayles and Ms. Stacey Rabkin from ORD also clarified that radiation monitoring identified in the *FY 2013 President's Budget for ORD* under the HS item was work planned by the EPA's Office of Air and Radiation and not an activity ORD was prepared to address.

The work group chair invited work group members to ask questions of an overarching nature. One member noted a plot of ORD dollars over Fiscal Years 2011, 2012, and 2013 shows a bimodal distribution of funds. The SHC program has 30% of funds. The remaining funds are divided among ORD's other five programs. HS and HHRA show decreases. Others are relatively constant. He asked about the sources of these different allocations and whether ORD intends the relative proportions to continue, given the overall EPA strategic research plan.

Dr. Kavlock responded that the allocations did result from ORD's realignment of programs in 2012. ORD thinks these allocations align with the EPA's strategic plan and does not anticipate major shifts across these strategic programs

Another member asked about multi-pollutant work in the ACE program because the *Air, Climate, and Energy; Strategic Research Action Plan 2012-2016* did not provide specifics. Dr. Costa responded that the ACE program is looking at PM 2.5, ozone, and mercury within a multi-pollutant context and is looking much more broadly. ACE field research on near-road exposures is multi-pollutant in focus. ORD will also be addressing specific questions from OAQPS regarding the application of its BENMAP model for mixed pollutants.

The work group chair asked ORD a final overarching question. Given ORD's six program areas and the importance of systems approaches and synergy, has ORD made any explicit allocation of resources to promote collaboration. Dr. Kavlock responded that ORD has not, although the question is interesting. There may be some things ORD can do more formally in this regard. Currently, no resources are set aside for this purpose

FY 2013 President's Budget Request for the National Center for Environmental Economics

Dr. Albert McGartland, Director, National Center for Environmental Economics, Office of Policy Economics and Decision Science, highlighted information in *FY 2013 President's Budget for Regulatory/Economic-Management and Analysis* and *Economics and Decision Sciences and National Center for Environmental Economics Programs - EDS Program Overview*. He noted that the FY 2012 budget presented uncertainty because of a line item cut for his program. The President's Budget for 2013 requests a restoration of funds to slightly above the FY 2011 levels. Important initiatives for the Economics and Decision Science (EDS) program are: benefit/cost analysis; cost analysis; incentives for energy savings; employment and environmental regulation; and benefit analysis for Total Maximum Daily Loads in the Chesapeake Bay.

The work group chair asked members for clarifying or follow-up questions. In response to questions, Dr. McGartland and Dr. Brett Snyder from NCEE noted that external grants were mostly for workshops and early career grants, capped at \$75,000, but a few grants were larger (e.g., \$200,000 to \$300,000). NCEE cannot direct research but does target awards to topics of interest to the EPA.

Dr. McGartland noted that, next to NCEE, the Office of Air and Radiation is the program office with the strongest economic staff. OAR is responsible for more than half of the EPA's benefit assessment and has a good capability to support those air rules and analyses related to climate change.

Review of charge questions and Preparations for March 2, 2012 Teleconference

The work group briefly reviewed the charge questions for discussion at the teleconferences on March 2 and 8, 2012:

1. How well will the requested budget permit EPA to advance its strategic research directions and the priorities identified in the President's Budget? Are there any areas where EPA should increase investments or reduce investments, based on demonstrated accomplishments or clearly identified needs?
2. Are the changes since the FY 2012 enacted budget appropriate, taking into consideration overall resources, FTEs, and intramural and extramural resources?
3. Are there well-defined objectives/work products for next year's budget? Can these objectives/work products be achieved with the given resources?
4. Are there opportunities to leverage the EPA resources with other resources, particularly federal resources?

The work group chair asked members to address these questions directly and briefly in their preparations for the upcoming teleconferences.

Members addressed the following issues regarding the charge questions.

- EPA would like the SAB to address changes from the FY 2012 enacted budget, but the work group may also address overall budget trends.

- The subgroup addressing overarching issues has flexibility in identifying salient points for the draft letter.
- Although EPA has not provided the desired level of information about budget allocations within program areas, the work group should make the most of available information and provide comment at the most appropriate scale, even if it is only at macro scale. If there is a need to identify information needed for analysis in future years, the work group can identify that information.
- The work group should focus on budget-related issues and keep this SAB activity separate from the broader SAB activity providing advice on ORD strategic directions. The ORD-published strategic research action plans, however, do provide information that the work group can draw upon for this review.

The chair asked members to prepare for the discussion on March 2, 2012 by preparing two or three bullets for each charge question within their subgroup.

The Designated Federal Officer adjourned the meeting at 4:10 p.m.

Respectfully Submitted:

/Signed/

Dr. Angela Nugent
SAB DFO

Certified as Accurate:

/Signed/

Dr. Taylor Eighmy
Chair, SAB Committee on Science
Integration for Decision Making

**Attachment A: Members of the Public Who Indicated Participation on the
March 1, 2012 Teleconference**

Becki Clark, EPA

Christopher Michael Clark, EPA

Sally Darney, EPA

Al Edwards

Iris Goodman, EPA

Jenny Hopkinson, Inside EPA

Jeremy Jacobs, Environment & Energy Publishing, LLC

Rick Linthurst, EPA

Michael Loughran, EPA

Andy Miller, EPA

Nicholas Moustakas, Health Effects Institute

Regan Murray, EPA

Christine Muchanic, Special Situations/Height Analytics

Stacey Rabkin, EPA

Alexandra Reyes, CQ Transcriptions

Phil Sayre, EPA

Betsy Smith, EPA

Tim Watkins, EPA

Materials Cited

The following meeting materials are available on the SAB Web site, <http://www.epa.gov/sab>, at the page for the March 1, 2012 teleconference: <http://yosemite.epa.gov/sab/sabproduct.nsf/a84bfee16cc358ad85256ccd006b0b4b/ad9f4d64737919c285257966004b53e1!OpenDocument&Date=2012-03-01>

¹ Roster of the SAB Research Budget Work Group

² Agenda

³ Federal Register Notice announcing the teleconference (77 FR 6796)

⁴ FY 2013 EPA Budget in Brief, EPA-190-S-12-001

⁵ ORD Budget Totals by Program/Project FY 2009 - 2013.

⁶ Science for a Sustainable Future; EPA Research Program Overview 2012 – 2016, EPA 601/R-12/002.

Air, Climate, and Energy; Strategic Research Action Plan 2012-2016, EPA 601/R-12/003

Chemical Safety for Sustainability; Strategic Research Action Plan 2012-2016, EPA 601/R-12/006

Homeland Security; Strategic Research Action Plan 2012-2016.

Human Health Risk Assessment; Strategic Research Action Plan 2012-2016, EPA 601/R-12/007.

Safe and Sustainable Water Resources; Strategic Research Action Plan 2012-2016, EPA 601/R-12/004.

Sustainable and Healthy Communities; Strategic Research Action Plan 2012-2016, EPA 601/R-12/005

⁷ Introduction to the Office of Research and Development - Background Information for SAB Research Budget Workgroup, March 1, 2012

⁸ EPA Progress Report 2010; Science and Research at the U.S. Environmental Protection Agency, EPA/600/R-011/067

⁹ FY 2013 President's Budget for Regulatory/Economic-Management and Analysis and Economics and Decision Sciences and National Center for Environmental Economics Programs - EDS Program Overview

¹⁰ Graph, "Resource Trends; ORD Total Budget with Inflation, 1999-2013

EPA Science to Achieve Results (STAR) Program Funding 2008-2013.

ORD Recent Research Accomplishments - Highlights for the Science Advisory Board .

¹¹ Presentation from EPA's Office of the Chief Financial Officer: U.S. Environmental Protection Agency FY 2013 President's Budget

¹² Office of Research and Development FY 2013 President's Budget - Presentation by Robert Kavlock, Deputy Assistant Administrator for Science (Acting)