

MEETING MINUTES

US Environmental Protection Agency (EPA)
Science Advisory Board (SAB)
Board Meeting
September 28, 2005
SAB Conference Center
1025 F Street, NW
Washington, DC 20004

Board Members: See Roster – Attachment A.

Date and Time: Wednesday, September 28, 2005, 9:00 A.M. – 4:30 P.M.

Location: US EPA SAB Conference Center, 1025 F Street, NW, Washington, DC

Purpose: The purpose of the meeting was to: a) discuss EPA's priority science issues; b) review one draft SAB panel report; and c) to discuss its planning activities for the SAB's December 13-14, 2005 ecological benefits workshop (see Attachment B for the meeting agenda and Attachment C for the Federal Register notice for the meeting_.

Attendees:

Chair: Dr. Granger Morgan

Board Members:

Dr. James Bus
Dr. Virginia Dale
Dr. Kenneth Dickson
Dr. Baruch Fischhoff
Dr. Myrick Freeman (phone only during report review)
Dr. James Galloway
Dr. William Glaze
Dr. Domenico Grasso
Dr. Phillip Hopke
Dr. James Johnson
Dr. Catherine Kling
Dr. George Lambert
Dr. Jill Lipoti
Dr. Gene Matanoski
Dr. Melanie Marty, CHPAC Chair and Liaison to the Board
Dr. Michael McFarland
Dr. Rebecca Parkin
Mr. David Rejeski
Dr. Joan Rose
Dr. Deborah Swackhamer
Dr. Thomas Theis

Dr. Robert Twiss
Dr. Terry Young
Dr. Lauren Zeise

Others attending: See Sign in Sheets (Attachment D)

Meeting Summary

The discussion generally followed the issues and general timing as presented in the meeting Agenda (Attachment C).

Wednesday, May 11, 2005

1. Introductory Remarks and Welcome: Mr. Thomas Miller, Designated Federal Officer (DFO) for the Board opened the meeting and noted that the meeting was being conducted pursuant to the Federal Advisory Committee Act, and other relevant statutory and policy requirements. Dr. Vanessa Vu welcomed the members and noted the importance of the topics to be discussed. Dr. Morgan welcomed and thanked the members for coming. He briefly reviewed the agenda.

2. Update on Recent Events at the SAB: Dr. Vanessa Vu summarized the SAB's FY 2005 accomplishments: 20 completed reports and letters with another 10 in preparation; establishment of the Homeland Security Advisory Committee and the Nitrogen Committee; conduct of a workshop on emerging technologies; and rapid response consultative advice (see Attachment E). Dr. Vu also provided additional detail on the rapid response requests in the wake of Hurricane Katrina (see details in Attachment F). In general, these requests have been for advice on contaminant monitoring plans that are to be implemented in the affected localities (e.g., New Orleans). Dr. Morgan sent a letter to the Administrator on these issues on September 7, 2005 (see Attachment G). The letter provided the individual advice of over 20 experts assembled for the purpose and also suggested EPA consider innovative problem-solving and communications approaches to address the situation so that those impacted by the situation can be involved.

Members noted that EPA should have better coordination of these monitoring efforts across its various offices. The continued "smokestack" nature of the organization and mission contributes to this lack of a systematic way of looking at problems of this type from monitoring of the presence and levels of contaminants, through analysis and decision-making, and involving stakeholders in the issue throughout the process. Situations of this type provide an opportunity for EPA to build faith in government by getting involved in interactions with real people in real time. We need to learn from our responses this time so we can build better approaches that are integrated across the agency and involve real people to enhance future responses to natural or manmade disasters.

3. Introduction to EPA's Science and Research Priorities: Dr. William Farland, Acting Science Advisor, US EPA discussed EPA's science and research priorities (See Attachment H). Science is a critical component of credible decisions and actions taken by EPA to protect human health and the environment. Decision making requires a variety of relevant, high quality, cutting edge research that is properly characterized. EPA also needs technologies to prevent and solve environmental problems and the science must be used appropriately in the decision process. EPA science is focused on those areas where EPA judges that it can add the most value in reducing uncertainty in risk assessments and in enhancing the management of risks. It is also important to recognize that decision making at EPA is informed by more than science (e.g., law policy, economics, etc.).

Dr. Farland discussed several examples of research at EPA (e.g., particulate matter, mercury, recreational water quality indicators; disinfection byproducts; pesticides; the effectiveness of sealants for reducing arsenic exposure from CCA treated wood; endocrine disruptor screening; assessment guidelines; IRIS assessments). EPA's research program is integrated around the "risk assessment paradigm" and involves its own laboratories, other governmental institutions, and the academic community. The science/research program is organized within EPA's five strategic goals and the research component is largely under the purview of the Office of Research and Development while each program office conducts a variety of science activities (primarily assessments of exposure, risk, and technology) as each implements the statutory mandates in their own areas of responsibility. For example the air program prepares staff papers for criteria pollutants and conducts mobile source emissions modeling among other activities. The water program prepares health assessments in support of drinking water standards and human health and aquatic life criteria for water quality. The pesticides and toxic chemicals programs review the science in support of pesticide registration evaluations and pre-manufacture notices for new chemicals planned for commercial use; The solid waste and emergency response programs prepare evaluation and technical guidance for site monitoring and remediation.

Regional offices have a variety of science needs as they implement or oversee the implementation of many regulations developed by a variety of national programs. Dr. Farland listed many specific science needs for the Regional Offices (e.g., information on mercury deposition; metals speciation; non-cancer risks; sediments assessment; vapor intrusion data and evaluation methods; research in support of TMDLs; innovative treatment technologies; invasive species assessment and control; information on pharmaceuticals and personal care products; mine waste management techniques; and air monitoring and assessment. ORD has several programs that work to support Regional Office science needs including Regional Applied Research Effort (RARE), Regional Methods Program; workshops in regions; Regional Research Partnerships; Regional Science Liaisons; and Hazardous Substance Technical Liaisons. Dr. Farland analogized the ORD to Regional Office continuum from science to assessment to environmental outcomes as a fruit tree. The research is conducted and published by researchers; assessors synthesize research information for use in "localized" programs; and then measurable environmental outcomes are observed and documented.

Dr. Science listed several key cross-cutting science issues at EPA. These include: a) review of agency risk assessment practices, b) cumulative risk assessment, c) models such as CREM, FEM, ETC and RAF; d) cancer risk assessment guidelines; e) genomics; f) human studies; g) probabilistic risk assessment; h) nanotechnology; i) environmental indicators; and j) the future direction for toxicity testing (NRC interaction here).

New issues that may be taken on include: a) health and ecological risk assessment revisions, b) environmental indicators and benefits assessments, c) risk assessment training for assessors and managers, d) implications of assumptions in the risk assessment paradigm, and e) sustainability and environmental futures.

Dr. Farland discussed the next steps in EPA's interactions with the Science Advisory Board in regard to its overall science program priorities. EPA's interest here is in: a) determining if EPA is emphasizing the right areas in its research and science, and b) if there are emerging areas of concern that EPA is not addressing.

A major question now is how the SAB can most effectively provide input to EPA's "budget deliberations." Is it through specific review of ORD activities; review of agency science activities; review of future strategic directions or through review of the President's Budget request for science/research (in this case the FY07 budget)? Historically, the SAB has evaluated the research and development (including program office science) programs that are included in each annual budget proposal. In recent years, this activity has been moved to the Chartered SAB itself to enhance its prominence and increase the resource available for the evaluation. This, "end-of-the-pipe" review of an already set budget remains less than satisfying to all parties. Thus, we need to consider whether there is a better way to provide feedback on EPA's science/research program. Also, for the future, what briefings or materials would be best to provide to the SAB in support of this work?

One prominent need raised by Dr. Farland is for an interaction with the SAB on priorities for improving human health risk assessments, ecological risk assessments, and benefits assessments. The need for such an effort builds on the agency's previous work that was described in "*Office of the Science Advisory Staff Paper – Risk Assessment Principles & Practices*. [NOTE: The SAB previously sent a commentary to the EPA Administrator, EPA-SAB-COM-05-001, in response to briefings of IHEC and EHC on the staff paper. The letter provided support to EPA's desire to use data instead of default assumptions in risk assessments - when data exist, and the use of probabilistic methods for performing hazard and dose-response assessments. This latter intends to provide a systematic process for considering all scientifically relevant data in an evaluation. The SAB closed that commentary noting the expertise needs that implementing these strategies would require and urged the Agency to provide the necessary resources to ensure these improvements can be implemented. (See Attachment I).]

Members raised several issues in relation to Dr. Farland's presentation. Prominent among them were:

- a) Did EPA act on recommendations made in an SAB *de novo* study on “Environmental Futures” in the area of needs relative to the impact of natural disasters? Dr. Farland noted that many things had transpired since that report and actions consistent with those recommendations. Tools have likely been developed to assist in this area, but more is needed to ensure a stock of tools is available “on the shelf” for future events.
- b) The need for the “Tree Analogy” to recognize that a long time line is associated with many of “rapid turnaround” tools that are needed and the reality that the last several budgets indicated that long-term research efforts are being de-valued in favor of short term ones. A static depiction of Regional needs misses the dynamic nature of the activity as well.
- c) The reality that EPA is a “small player” in many of the science areas that are important to its mission. ORD recognizes this and has responded with a good job in leveraging activities/resources with other agencies. Future needs of EPA in things such as nanotech will require EPA to develop new ways to affect the direction of research in other institutions so that EPA’s science needs are addressed. The question is how one can affect the direction of a train that is going fast in one direction and to get it to address emerging needs? Dr. Farland suggested EPA’s actions in Global Climate Change are instructive in this regard. The integrated federal effort on nanotechnology is another.
- d) Members noted the need for research that will allow EPA to attain its strategic goal of moving from a “waste centered” to a “materials-focused” regime in the waste programs? Little research is now being done to support this change. [NOTE: This is an example of the types of strategic programs that are being missed and that the SAB can help EPA to identify in its annual “budget” advisory.
- e) The need for EPA to consider the impacts of global climate change on its statutory mission areas was emphasized. This is a link to a justification for EPA to conduct research in this area even though it has a small role in the overall federal global climate change program. This is not global change research for itself, but research as a way to determine how such changes affect EPA’s existing mandated activities.
- f) Members pointed out that many things are emerging that could easily shift EPA’s priorities. Items mentioned in this regard included: recreational water contamination and its influence on human health; beach-shed impacts, wildlife impacts, and avian flu.
- g) The need to find ways to interact with the private sector on research. The primary concern here is that such interactions are often criticized as making the research results vulnerable to the influence of the regulated community who would help fund the studies.
- h) The reality that “social science” issues drive EPA. They influence what EPA will do, and how its success is judged. EPA had an incredible presence in the

communication of these issues in the past, but that seems to have been lost as those programs have been cut. EPA should address this loss and should be a leader in the development of future communications efforts.

i) The Board help EPA think strategically about how to solve emerging environmental problems (e.g., pharmaceuticals and personal care products entering the environment as a natural outcome of normal product use). The Board could help to elevate issues such as this so that they begin to get consideration.

j) Effects to development of infants and children is an important issue and could be looked at under an overarching banner of pollution prevention or sustainability.

Dr. Morgan will consider how we might go forward and assist EPA in this strategic, big-picture look at its science programs. He will propose a strategy for how we might go forward relative to advising EPA on FY 2007 and FY 2008.

Associated with looking at EPA science priorities, the SAB SO will explore the possibility of holding a discussion on the OMB Program Assessment Rating Tool (PART), and its role on research resource allocations. The Board members assigned to this task are Drs. Morgan, Matanoski, McFarland, Swackhamer, and Theis.

4. Visit from the Deputy Administrator, Mr. Marcus Peacock: Mr. Peacock welcomed the Board and made some brief introductory remarks to introduce. He noted his background prior to joining EPA and stated that EPA values the Board's commitment to public service. He believes that the SAB can help to insure that EPA uses the best science in its programs.

Mr. Peacock reinforced the earlier discussions on rapid responses to natural disasters noting that having more ready-made tools on the shelf that were tailored to such situations would have been helpful. It will be important to have tools ready for use in future situations of this type.

Mr. Peacock noted that EPA evaluates the effectiveness of its handling of environmental issues (results, outcomes) using the PART tool. He believes that the Board can help EPA in marshalling science assets to help in determining whether EPA programs attain the expected results. He also emphasized the importance of feedback to the Board on how the SAB advice influences the science at EPA.

Members appreciated Mr. Peacock taking time to come talk with them and asked a number of questions. These questions, and comments, included:

a) Members noted that in its past two advisories on the EPA science/research budget that it had expressed concern about PART. The notion of considering performance in investment decisions is laudable. However, it seems that for long term research, PART is not as effective as it might be. Much of the cuts in ORD science as a result

of PART came in the ecosystems area and some of that could have provided information that could be valuable in assessing vulnerabilities to natural disasters.

The Board suggested at the time that it might be good to enter into a dialogue with OMB about PART to try to identify why it seemed to work for long term research. Mr. Peacock noted that he was in many ways the originator of PART because of his efforts to interject some elements of performance into the budgeting process. R&D has been a difficult area to show performance due to its nature. Members suggested that it might be valuable to meet with him and talk about this issue.

b) Concern was noted for the disaster response plans because of the “stove-piping” that is typical in many EPA efforts, and which was exhibited in some of the monitoring plans reviewed after the hurricanes. Better cross-office planning in this regard is needed. Mr. Peacock agreed that highlighting this factor was one of the values of having the SAB rapid response “reviews.” He noted further that in the case of tight budgets EPA might of necessity have to work to get out of its stove-pipes. This is yet another example of the need to have improved approaches on the shelf when these events occur. Members suggested that the SAB might be able to assist EPA in planning to respond to these situations in the future.

c) Many land use related issues are associated with competing human demands. An integrated look at these issues will be necessary and that will require additional efforts in the social sciences area. EPA has made good strides in the economics part of the social sciences but has not made much progress in integrating the other social sciences into its practice.

5. FY 2006 SAB Operating Plan. Dr. Vu presented information on the SAB operating plan for FY 2006. We have received 59 requests and have about 39 new and 20 carry-over requests from FY 2005 (see Attachment J).

Members noted the following in regard to FY 2006 activities:

a) We need to prepare a project on emergency response planning for our plan. Part of this needs to be considered demographic and cultural issues that are a part of response planning.

b) Why has the sustainability issue been placed into the EEC? The EEC raised the issue; however, we are not constrained to using only EEC members for the activity.

c) Many of the projects appear to be consultations. That seems to be an appropriate area for the Board to increase its efforts.

d) The Board should focus on highly visible issues.

e) The Board needs to know more about PART analyses of research programs. When expert reviews are conducted, you can actually end up with a lower PART score. We need to determine why that can occur.

f) The list is fairly typical of the things that EPA usually sends to the SAB. We need to ensure that we also have some projects that are identified by the SAB itself. A mechanism to bring inspirational ideas forward is necessary. We need more than peer reviews and mid-course advisory work.

6. Review and Approval of the ReVA Draft Report: Members then reviewed the draft report *Advisory on EPA's Regional Vulnerability Assessment Program* that was drafted by the SAB ReVA Advisory Panel (see the draft report in Attachment K, the charge to the Board for reviewing reports in Attachment L, and the QRC minutes of the meeting in which the QRC reviewed the draft report in Attachment M).

Dr. Ken Cummins, Chair of the ReVA Advisory Panel gave an overview of the review. Dr. Zeise, Chair of the QRC for the ReVA draft report, characterized the outcome of the Quality Review Committee for the draft report (see Attachment M). Most of the issues raised in the QRC were editorial; however, one main issue persists and that is whether ReVA of the future can really do what it purports to do. The deficiencies identified by the advisory panel may be fatal flaws.

The Board noted a general issue that applies to ReVA itself, as well as several other reviews of EPA "models" that the SAB has conducted recently. EPA has a Regulator Evaluation Models guidance. It is fairly mature. The ReVA itself does not seem to discuss EPA's own advice on such models. It seems that many of the criticisms in the Panel's report would be unnecessary if EPA followed its own advice for REMs.

Members stated that ReVA does reflect a need at EPA for approaches to look at geographic problems with some structure and consistency. It is probably not wise to tell them they should do nothing at all until you have a fully developed model that can be tested against many years of data. Thus it might be better to note in the letter the concerns but also to urge EPA to continue to develop the "model." This response is applicable to generalization to several recent SAB efforts for EPA on "models."

It was moved and seconded that the report be approved conditional on changes being made to the letter to the administrator. The changes are to be agreed to between Drs. Morgan and Cummins. In addition the edits noted in the QRC interaction are to be made as appropriate. The letter should be passed by the review panel at the Panel Chair's discretion. Members present voted and all agreed to the motion. Later in the day, the revisions to the letter were discussed and accepted by the Board. The matter was returned to the Panel Chair and DFO to process the edits and then send the report to the Administrator.

7. Discussion of SAB Workshop on Ecological Benefits: Dr. Grasso introduced the topic. Dr. Buzz Thompson and Dr. Kathy Segerson, new Chair and Co-chair of CVPESS respectively, presented the proposal. The workshop is designed to showcase and discuss the initial findings of CVPESS. The workshop will involve presentations of major findings from CVPESS efforts on an expanded and integrated approach for valuing ecological benefit assessments and their potential use in decision-making; invited presentations from major national and international scientific reports on ecological benefits; and lessons that can potentially be learned from human health benefit assessment at EPA. Breakout sessions will follow the presentations. The workshop will conclude with a plenary session in which participants discuss outcomes of the workshop.

Member reactions included:

a) questions on whether there would be practical outcomes from the workshop (e.g., ideas for applications to issues such as are now occurring on the Gulf Coast)?

Workshop organizers noted that such a focus would help to keep the workshop from becoming too abstract and would be a good thing. However, the workshop could be overtaken by the current situation if it was an explicit focus and that might not be good.

b) Dr. Cowling (CASAC) and Dr. Grant (EPA/ORD) could be interesting additions to a breakout on ozone since the secondary standard for that is soon to be on the table for EPA.

c) Recent NRC efforts on eco valuation could be helpful to the workshop. The Corps of Engineers is a big player in the Gulf Coastal issue and they might be good to have as presenters instead of traditional benefits transfer speakers.

d) Public perception expertise could be important in the workshop.

8. Discussion of Future SAB *De Novo* Study Candidates (See Attachment O):

Projects that had been nominated for consideration by SAB/Committee members over the past year were listed in the attachment and several were discussed as potential candidates for further consideration. For those selected for further consideration (see below), small groups of Members were identified to carry them forward by preparing/revising a project description. The descriptions should indicate: a) what the SAB could do, that is, b) what the study entails, and c) why the project is important. The Board intends to select two at its next meeting for conduct.

The topics that were identified for further development include:

a) **Preparing for Environmental Disasters:** Drs. Granger Morgan, Baruch Fischhoff, Phil Hopke, and Jill Lipoti.

b) **Multi-TMDL Approach in Regional Science:** Drs. Cathy Kling, Deborah Swackhamer, and Joan Rose.

c) **Multi-Attribute Screening Methods:** Drs. Granger Morgan and Vanessa Vu (this is about the need for Regions to have tools to screen for significant problems associated with environmental projects; e.g., GISST, ReVA, CrEAM)

d) **EPA-Industry-Other Joint Funding of Research Projects:** Drs. George Lambert, Robert Twiss, and James Bus

e) **Industrial Ecology:** Dr. Thomas Theis

Lead Writers are to provide write-ups to Tom Miller by November 30, 2005. They will be distributed to the Board in preparation for its December 14, 2005 meeting.

9. Additional Items: Several additional items were made available to the Board members during the meeting. These included:

- a) Update of the FIFRA SAP activities during FY 2005 (see Attachment P)
- b) News release from the US House of Representatives Committee on Science entitled, *GAO Study Raises Questions About Future Availability of Environmental Data* (see Attachment Q)
- c) GAO Highlights study synopsis *Status of Federal Data Programs That Support Ecological Indicators* (see Attachment R). (NOTE: The full report was provided to several Board Members at their request, the report is available at www.gao.gov/cgi-bin/getrpt?GAO-05-376).

The Designated Federal Officer adjourned the meeting

Respectfully Submitted

/ Signed /

Thomas O. Miller
Designated Federal Officer
US EPA Science Advisory Board

Certified as True:

/ Signed /

Dr. M. Granger Morgan
Chair, EPA Science Advisory Board

Attachments

- A SAB Roster
- B Meeting Agenda
- C *Federal Register* 70 54376-54377
- D Sign-in sheets
- E FY 2005 Accomplishments
- F *Federal Register* 70 54046 and Meeting Minutes for the various calls
- G Letter to Administrator Johnson, September 7, 2005
- H Dr. Farland's Presentation Slides
- I EPA-SAB-COM-05-001
- J Overview of SAB Staff Office Draft Operating Plan for FY 2006
- K *Advisory Report on EPA's Regional Vulnerability Assessment (ReVA) Program*
Draft Panel Report, 9/19/2005
- L Charge to the SAB for Review Draft SAB Panel Reports
- M Minutes from the US EPA SAB QRC for the Draft ReVA Report; 9/8/2005
- N US EPA SAB Workshop- draft description
- O SAB Self-identified Projects List 9/27/2005
- P FIFRA SAP Activities
- Q GAO Study Raises Questions About Future Availability of Environmental Data
- R *Status of Federal Data Programs That Support Ecological Indicators*