

Summary Minutes
US Environmental Protection Agency Science Advisory Board
Meeting

Public Teleconference Meeting

March 5, 2009

2:00 pm – 4:00 pm (Eastern Time)

Meeting Location: Via Telephone Only

Purpose of the Meeting: The Meeting was held to allow for the Chartered SAB to discuss its draft letter to the Administrator on EPA science needs, to receive a briefing from EPA/ORD on its transformational initiative, and to plan for further SAB activities for FY 2009. The meeting agenda is in Attachment A. The list of SAB and other participants follows.

Meeting Participants:

Members Participating in the Meeting:

Dr. Deborah L. Swackhamer, Chair	Dr. David Allen
Dr. John Balbus	Dr. Greg Biddinger
Dr. Tim Burke	Dr. James Bus
Dr. Otto Doering	Dr. David Dzombak
Dr. Baruch Fischhoff	Dr. James Galloway
Dr. John Giesy	Dr. James Hammitt
Dr. Rogene Henderson	Dr. James Johnson
Dr. Bernd Kahn	Dr. George Lambert
Dr. Jill Lipoti	Dr. Judith Meyer
Dr. Christine Moe	Dr. Duncan Patten
Mr. David Rejeski	Dr. Steve Roberts
Dr. Joan Rose	Dr. James Sanders
Dr. Gary Saylor (BOSC Liaison)	Dr. Kathy Segerson
Dr. Kristin Shrader-Frechette	Dr. V. Kerry Smith
Dr. Thomas Theis	Dr. Thomas Wallsten
Dr. Daniel Watts (Liaison NACEPT)	

MEETING SUMMARY

Thursday, March 5, 2009

This meeting was announced in the *Federal Register* (see 74 FR 7046 of February 12, 2009 - Attachment B). The SAB Roster is in Attachment C.

1. Convene the Meeting:

The DFO convened the meeting noting that it was a federal advisory committee meeting and that the Board's deliberations are held as "public meetings" pursuant to the Federal Advisory Committee Act (FACA), its regulations, and the policies of the US EPA for advisory activities. Mr. Miller noted the

public participation requirements associated with SAB activities and that no member of the public had requested time to speak, though several were listening as observers on the call. Mr. Miller noted that SAB members must comply with Federal ethics and conflict-of-interest laws and that SAB ethics officials review relevant information to ensure that SAB panels reflect appropriate balance and that COI and bias issues are addressed. Mr. Miller noted that no ethics issues were noted in relation to the participation of any member of the SAB in the day's issues.

Mr. Miller then turned the meeting over to the SAB Chair, Dr. Deborah L. Swackhamer, to carry out the agenda. Dr. Swackhamer welcomed those participating in the review, noted the purpose of the meeting, and explained the nature of an SAB quality review. Dr. Swackhamer also reminded members of the upcoming SAB meetings on April 23-24, June 9-10, and September 23-24, 2009.

2. **Presentation by Dr. Kevin Teichman, Deputy Assistant Administrator for Science, US EPA Office of Research and Development:** Dr. Teichman briefed the Board Members on ORD's *Transforming ORD: Building a Successful Future* (see Attachment D). Dr. Teichman noted that ORD is unique – in one agency, it conducts human health and environmental research; considers all phases from source to analysis, action and outcomes, and looks at issues from exposure to risk. ORD's transformation focuses on identifying where it can make the greatest difference and focusing efforts in those areas. In this transformation, ORD has taken the SAB's advice on undertaking a larger program of research that goes beyond just near term regulatory needs to look at a broad array of problems facing the nation and to take a more integrated view that reflects the inherent complexities among human and ecological systems.

In its transformation, ORD will work toward two ends: What it does – ensure that research addresses the most important environmental problems facing the agency and nation; and How it is done – by fully capitalizing on ORD's special ability to conduct integrated, multidisciplinary research to solve these problems. In all this, research will keep ORD knowledge current and focused so that it can continue to respond to the increasing level of request from EPA program and regional offices.

Dr. Teichman noted that problems of Broad National Significance are:

- i) Potentially large impact on exposed human populations and/or affected ecosystems;
- ii) Significant geographic scale, temporal reach, and economic consequences;
- iii) Relevant to national or international policy-making
- iv) Central to EPA's mission to protect human health and the environment;
- v) Actions will likely make a significant contribution toward resolution;
- vi) Priority item for the agency and the Administrator;
- vii) Visible to the public; and
- viii) Likely to benefit from an integrated multidisciplinary approach

Dr. Teichman noted that "Integrated, Multidisciplinary Research (IMD Research)" involves more than one discipline/problem, uses an integrated approach, and synthesizes knowledge at all phases (in essence it is "true collaboration") while "Multidisciplinary Research," though it involves more than one discipline/problem, follows a more additive approach. Activities are coordinated at the beginning and knowledge is combined at the end (it is essentially a "cooperative" in nature). Pure disciplinary research involves one discipline/problem; and follows a singular approach. It intends to gain deep understanding of one problem (it is essentially a "no cooperation" across disciplines

model). Dr. Teichman discussed an example of IMD – “Sustainable Water Infrastructure.” ORD has formed a Transformation Taskforce to further this effort and would be happy to get the SAB’s advice on this issue now and later.

Members comments focused on:

- i) the extent of current ORD partnering with organizations outside EPA;
- ii) the proportion of current ORD work that could be characterized as IMD;
- iii) whether EPA was prepared to lead US efforts in all environmental areas – EPA is interested in partnering and being a part of many of these efforts not necessarily leading them.
- iv) the extent of EPA social science research;
- v) the need for a definition of IMD and the notion that it is by nature issue-specific;
- vi) the fit of environmental technology within IMD;
- vii) the need for social science other than economics research and the two-way nature of risk communications;
- viii) the notion that IMD is not a new idea;
- ix) the possible role of ORD science in helping EPA to see the “big picture” and to help it make inroads on its current stove-piped approach to business;
- x) the notion that others might challenge EPA’s uniqueness for IMD – NSF, for example.

Dr. Teichman briefly commented on the budget picture, noting that because of the administration change the process will be different this year than in past years. The 2009 budget is now being completed and the 2010 budget will likely go the Congress in April. From the President’s preliminary remarks to the Congress, the President will request \$10.5 B for EPA – greater than \$3.0 B than for 2009. In addition, the recovery package has about \$7.2 B for EPA. The distribution of the 20090 funds, the 2010 request, and the recovery package is not yet available. This is likely a discussion item for the April SAB meeting agenda.

3. **Discussion: Draft SAB Letter on the Science Needs of EPA:** Dr. Swackhamer briefly discussed her meeting with the Administrator. She stated that the Administrator appreciates the need to go beyond current stove-piped approaches to environmental protection and that she is supportive of ecosystem issues as well as the more prevalent focus on human health. She has a high regard for the types of advice that the SAB provides and is supportive of this project. She would like it to emphasize how our enhancement advice would apply to toxic chemicals as an example and if it is possible to also see how climate change might fit into our conception.

Dr. Bus summarized the subgroup’s activities on drafting the letter since the Annapolis planning retreat and noted the types of comments (see Attachment E) that have been received from Board members as a result of their review of the draft letter (see Attachment F). For the day’s discussion, the focus should be on issues such as tone and points that should be made by the letter (new, revised, or deletions).

Members discussed the following issues with regard to the draft letter:

- i) The letter should ensure that the bullets up front are clear. The text following the bullets might not be read.

- ii) First paragraph should be just the greetings also some of the last paragraph can move to this paragraph as well.
- iii) Need a better transition to the bullets to make it clear that they are not in priority order.
- iv) Suggest substitute “paradigms’ for ‘models’ in this bullet. Or it could be clarified to say new interdisciplinary models for research.
- v) The fourth bullet needs clarification – existing version does not make a clear statement of what we intend for EPA to do regarding budget “restoration.” Can clarify that the budget does not now provide sufficient support to build the capacity and organization for integration..
- vi) The notion of partnerships was challenged. There appeared to be consensus to keep the notion because it suggests the opportunity for EPA to work together within the agency and others outside. It also reflects the idea of “leveraging” that the SAB has recommended to EPA repeatedly.
- vii) Some called for more specific information in several bullets but consensus built around the idea of this letter providing brief information that introduces issues and refers to the longer-term project on enhancement of science at EPA to provide greater detail. The later advisory will provide specifics for the Administrator who has the reputation of a problem solver who takes action – we can make explicit recommendations there that are actionable.
- viii) For the longer-term project, there was concern that as now discussed it might be too broad and not able to be accomplished in the time frame needed by the Administrator (late February 2010). In narrowing that project, the Administrator sees EPA clearly with the lead on chemical risk assessment for support of decision-making and would like an emphasis there. Though she has a great interest in climate change, EPA is one of many agencies addressing that issue and having that as a focus for our report would not be as helpful.

ACTION: The letter is to be redrafted to have: 1) an Introductory paragraph with the welcoming information, 2) a section with the bullet points expanded to provide clarification of what is intended in each (possibly with the key message bolded in the bullet); and 3) a concluding paragraph.

The letter will be: 1) redrafted by Drs. Bus, Rejeski, Swackhamer, and Burke with the support of SAB staff, 2) circulated to the full Board for final review and concurrence, and 3) sent to the Administrator by the end of March. Additional discussion via an SAB meeting will only be done if significant disagreement exists in the version sent to the Board for final concurrence.

4. **Future Meetings:** Dr. Swackhamer mentioned the future SAB meetings which have been calendared for the following dates:

a) April 23-24, 2009

For this meeting, the Board will likely discuss the following topics:

- i) The SAB plan for its “Strengthening Science at EPA” project
- ii) The EPA Research Budget
- iii) The continued development of EPA’s long range strategic research vision

- b) June 9-10, 2009 and
Topics for the June 9-10 meeting include at least:
 - i) Follow up to Retreat Topic 3 – efficiency and effectiveness of the SAB
 - ii) Quality review of the draft advisory on economic analysis guidelines
 - iii) Quality review of the draft advisory on expert elicitation

- c) September 23-24, 2009
Topics for the September meeting are to be determined.

With the business concluded, the Designated Federal Officer adjourned the meeting at 4:00 p.m.

Respectfully Submitted:

/ Signed /

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

Certified as True:

/ Signed /

Dr. Deborah L. Swackhamer
Chair, EPA Science Advisory Board

Attachments:

- A Agenda
- B Federal Register Notice
- C SAB Roster
- D Dr. Teichman – Transforming ORD presentation
- E Compilation of SAB Member comments on draft letter
- F Draft letter to the Administrator on EPA science needs

**U.S. Environmental Protection Agency
Science Advisory Board
Teleconference
Agenda
March 5, 2009**

(Telephone conference meeting: For call-in information, please call the
SAB Staff Office at 202-343-9999)

Purpose of the Meeting: The Board will meet to receive a briefing from EPA ORD on the EPA research strategic focus, to discuss a draft letter to the EPA Administrator on EPA science needs and to plan for several future activities.

Thursday March 5, 2009

2:00 p.m.	Convene the Meeting	Mr. Thomas O. Miller <i>Designated Federal Officer, EPA Science Advisory Board</i>
2:05 p.m.	Purpose and Approach of the Meeting	Dr. Deborah L. Swackhamer <i>Chair Science Advisory Board</i>
2:10 p.m.	Transforming ORD: Confronting Today's Reality and Building a Successful Future	Dr. Kevin Teichman <i>Acting Agency Science Advisor and Deputy Assistant Administrator for Science, Office of Research and Development</i>
2:45 p.m.	Discussion of the Draft SAB Letter on the Science Needs of EPA	Dr. Deborah L. Swackhamer <i>Chair Science Advisory Board</i>
3:45 p.m.	Next Steps - Planning	Dr. Deborah L. Swackhamer <i>Chair Science Advisory Board</i>
4:00 p.m.	Adjourn the Meeting	The DFO

unless it displays a currently valid OMB control number. The OMB control numbers for EPA's regulations in 40 CFR are listed in 40 CFR Part 9. When this ICR is approved by OMB, the Agency will publish a technical amendment to 40 CFR Part 9 in the **Federal Register** to display the OMB control number for the approved information collection requirements contained in this final permit.

Authority: Clean Water Act, 33 U.S.C. 1251 *et seq.*

Dated: February 2, 2009.

Alexis Strauss,

Director, Water Division, EPA Region 9.

Authority: Clean Water Act, 33 U.S.C. 1251 *et seq.*

Dated: February 2, 2009.

Michael A. Bussell,

Director, Office of Water and Watersheds, EPA Region 10.

[FR Doc. E9-3045 Filed 2-11-09; 8:45 am]

BILLING CODE 6560-50-P

ENVIRONMENTAL PROTECTION AGENCY

[FRL-8772-6]

EPA Science Advisory Board Staff Office; Notification of a Public Teleconference Meeting of the Chartered Science Advisory Board

AGENCY: Environmental Protection Agency (EPA).

ACTION: Notice.

SUMMARY: The EPA Science Advisory Board (SAB) Staff Office announces a public teleconference meeting of the Chartered Science Advisory Board to discuss a draft letter on science needs for EPA.

DATES: The meeting date is Thursday, March 5, 2009, from 2 p.m. to 4 p.m. (Eastern Time).

Location: The meeting will be conducted by telephone only.

FOR FURTHER INFORMATION CONTACT: Any member of the public wishing to obtain general information concerning this public teleconference meeting should contact Mr. Thomas O. Miller, Designated Federal Officer (DFO), EPA Science Advisory Board (1400F), 1200 Pennsylvania Ave., NW., Washington, DC 20460; via telephone/voice mail: (202) 343-9982; fax: (202) 233-0643; or e-mail at miller.tom@epa.gov. General information concerning the EPA Science Advisory Board can be found on the SAB Web site at: <http://www.epa.gov/sab>.

SUPPLEMENTARY INFORMATION: The SAB was established by 42 U.S.C. 4365 to

provide independent scientific and technical advice to the Administrator on the technical basis for Agency positions and regulations. The SAB is a Federal advisory committee chartered under the Federal Advisory Committee Act (FACA), as amended, 5 U.S.C., App. The SAB will comply with the provisions of FACA and all appropriate SAB Staff Office procedural policies. Pursuant to the Federal Advisory Committee Act, Public Law 92-463, notice is hereby given that the EPA SAB will hold a public teleconference meeting to discuss a draft letter on immediate EPA science needs.

Background: SAB Telephone Conference, Thursday, March 5, 2009

Discussion of EPA Science Needs. At this meeting, the Chartered Science Advisory Board will discuss a draft letter that highlights science issues and needs for EPA's consideration. Should other issues need to be added to the agenda, they will be reflected on the agenda, along with other relevant information, that will be placed onto the SAB Web site at: <http://www.epa.gov/sab> prior to the meeting.

Availability of Meeting Materials: The agenda and other materials in support of this meeting will be placed on the SAB Web site at <http://www.epa.gov/sab> in advance of this meeting.

Procedures for Providing Public Input: Interested members of the public may submit relevant written or oral information for the SAB to consider on the topics included in this advisory activity and/or group conducting the activity. **Oral Statements:** In general, individuals or groups requesting an oral presentation at a public meeting will be limited to three minutes per speaker, with no more than a total of one-half hour for all speakers. Interested parties should contact Mr. Miller, DFO, in writing (preferably via e-mail) at the contact information noted above, by February 26, 2009 to be placed on a list of public speakers for the meeting.

Written Statements: Written statements should be received in the SAB Staff Office by February 26, 2009 so that the information may be made available to the SAB Panel members for their consideration and placed on the SAB Web site for public information. Written statements should be supplied to the DFO in the following formats: One hard copy with original signature, and one electronic copy via e-mail (acceptable file format: Adobe Acrobat PDF, WordPerfect, MS Word, MS PowerPoint, or Rich Text files in IBM-PC/Windows 98/2000/XP format). Submitters are asked to provide versions of each document submitted with *and* without

signatures, because the SAB Staff Office does not publish documents with signatures on its Web sites.

Accessibility: For information on access or services for individuals with disabilities, please contact Mr. Thomas Miller at (202) 343-9982, or miller.tom@epa.gov. To request accommodation of a disability, please contact Mr. Miller, preferably at least 10 days prior to the meeting, to give EPA as much time as possible to process your request.

Dated: February 6, 2009.

Patricia Thomas,

Acting Deputy Director, EPA Science Advisory Board Staff Office.

[FR Doc. E9-2906 Filed 2-11-09; 8:45 am]

BILLING CODE 6560-50-P

FEDERAL COMMUNICATIONS COMMISSION

[IB Docket No. 04-286; DA 09-193]

Second Meeting of the Advisory Committee for the 2011 World Radiocommunication Conference

AGENCY: Federal Communications Commission.

ACTION: Notice.

SUMMARY: In accordance with the Federal Advisory Committee Act, this notice advises interested persons that the second meeting of the WRC-11 Advisory Committee will be held on March 31, 2009, at the Federal Communications Commission. The purpose of the meeting is to continue preparations for the 2011 World Radiocommunication Conference. The Advisory Committee will consider any preliminary views introduced by the Advisory Committee's Informal Working Groups.

DATES: March 31, 2009; 11 a.m. to 12 noon.

ADDRESSES: Federal Communications Commission, 445 12th Street, SW., Room TW-C305, Washington, DC 20554.

FOR FURTHER INFORMATION CONTACT: Alexander Roytblat, Designated Federal Official, WRC-11 Advisory Committee, FCC International Bureau, Strategic Analysis and Negotiations Division, at (202) 418-7501.

SUPPLEMENTARY INFORMATION: The Federal Communications Commission (FCC) established the WRC-11 Advisory Committee to provide advice, technical support and recommendations relating to the preparation of United States proposals and positions for the 2011

Attachment C

U.S. Environmental Protection Agency Science Advisory Board March 5, 2009 Teleconference

CHAIR

Dr. Deborah Swackhamer, Professor of Environmental Health Sciences and Co-Director Water Resources Center, Water Resources Center, University of Minnesota, St. Paul, MN

SAB MEMBERS

Dr. John Balbus, Chief Health Scientist, Environmental Health Program, Environmental Defense Fund, Washington , DC

Dr. Gregory Biddinger, Coordinator, Natural Land Management Programs, Toxicology and Environmental Sciences, ExxonMobil Biomedical Sciences, Inc., Houston, TX

Dr. Thomas Burke, Professor, Department of Health Policy and Management, Johns Hopkins Bloomberg School of Public Health, Johns Hopkins University, Baltimore, MD

Dr. James Bus, Director of External Technology, Toxicology and Environmental Research and Consulting, The Dow Chemical Company, Midland, MI

Dr. Otto C. Doering III, Professor, Department of Agricultural Economics, Purdue University, W. Lafayette, IN

Dr. David A. Dzombak, Walter J. Blenko Sr. Professor of Environmental Engineering, Department of Civil and Environmental Engineering, College of Engineering, Carnegie Mellon University, Pittsburgh, PA

Dr. Baruch Fischhoff, Howard Heinz University Professor, Department of Social and Decision Sciences, Department of Engineering and Public Policy, Carnegie Mellon University, Pittsburgh, PA

Dr. James Galloway, Professor, Department of Environmental Sciences, University of Virginia, Charlottesville, VA

Dr. John P. Giesy, Professor, Department of Zoology, Michigan State University, East Lansing, MI

Dr. James K. Hammitt, Professor, Center for Risk Analysis, Harvard University, Boston, MA

Dr. Rogene Henderson, Senior Scientist Emeritus, Lovelace Respiratory Research Institute, Albuquerque, NM

Dr. James H. Johnson, Professor and Dean, College of Engineering, Architecture & Computer Sciences, Howard University, Washington, DC

Dr. Bernd Kahn, Professor Emeritus and Director, Environmental Radiation Center, Nuclear and Radiological Engineering Program, Georgia Institute of Technology, Atlanta, GA

Dr. George Lambert, Associate Professor of Pediatrics, Director, Center for Childhood Neurotoxicology, Robert Wood Johnson Medical School-UMDNJ, Belle Mead, NJ

Dr. Jill Lipoti, Director, Division of Environmental Safety and Health, New Jersey Department of Environmental Protection, Trenton, NJ

Dr. Judith L. Meyer, Distinguished Research Professor Emeritus, Odum School of Ecology, University of Georgia , Athens , GA

Dr. Christine Moe, Eugene J. Gangarosa Professor, Hubert Department of Global Health, Rollins School of Public Health, Emory University, Atlanta, GA

Dr. Duncan Patten, Research Professor , Department of Land Resources and Environmental Sciences, Montana State University, Bozeman, MT, USA

Mr. David Rejeski, Director, Foresight and Governance Project , Woodrow Wilson International Center for Scholars, Washington, DC

Dr. Stephen M. Roberts, Professor, Department of Physiological Sciences, Director, Center for Environmental and Human Toxicology, University of Florida, Gainesville, FL

Dr. Joan B. Rose, Professor and Homer Nowlin Chair for Water Research, Department of Fisheries and Wildlife, Michigan State University, East Lansing, MI

Dr. James Sanders, Director and Professor, Skidaway Institute of Oceanography, Savannah, GA

Dr. Kathleen Segerson, Professor, Department of Economics, University of Connecticut, Storrs, CT

Dr. V. Kerry Smith, W.P. Carey Professor of Economics , Department of Economics , W.P Carey School of Business , Arizona State University, Tempe, AZ

Dr. Thomas L. Theis, Director, Institute for Environmental Science and Policy,
University of Illinois at Chicago, Chicago, IL

Dr. Thomas S. Wallsten, Professor, Department of Psychology , University of
Maryland, College Park, MD

LIAISON MEMBERS

BOSC:

Dr. Gary Sayler, (Chair, BOSC), Beaman Distinguished Professor, Joint Institute
for Biological Sciences, Oak Ridge National Laboratory, University of Tennessee,
Knoxville, TN

NACEPT:

Dr. Daniel J. Watts, Executive Director, Otto H. York Center for Environmental
Engineering and Science and the Panasonic Professor of Sustainability at New
Jersey Institute of Technology, Monmouth Jct., NJ

SCIENCE ADVISORY BOARD STAFF

Mr. Thomas Miller, Designated Federal Officer, 1200 Pennsylvania Avenue, NW
1400F, Washington, DC, Phone: 202-343-9982, Fax: 202-233-0643,
(miller.tom@epa.gov)

Transforming ORD: Building a Successful Future



Partnering to Solve Complex Environmental Issues

- To best fulfill the Agency's mission, ORD must fully employ its unique integrated, multidisciplinary capability to solve increasingly complex environmental issues.
- This vision for ORD's future is consistent with both the recommendations of the Science Advisory Board and the testimony of our new Administrator.
 - "Science must be the backbone for EPA programs."
- To achieve this vision, ORD must closely partner with EPA's Program and Regional Offices, starting from problem definition thru to the use of research results.



SAB

Recommendations

- “It is clear that if the Agency is to truly protect the environment, it must undertake a larger program of research that goes beyond its immediate regulatory needs and address the broad array of environmental problems facing the nation.”
- “...if it is to be prepared to address future needs, EPA’s research program will have to adopt a more integrated view, one that reflects the inherent complexities and interconnections among human and ecological systems, gives greater consideration to feedbacks, and focuses on the relevant scales of each issue.”

EPA Science Advisory Board, 2008

Building on ORD's Strengths

- ORD has worked hard to be supportive of EPA's mission.
 - Our Program and Regional Office partners increasingly request our time and expertise.
- We would like to transform ORD toward these two ends:
 - What we do: Ensure that our research addresses the most important environmental problems facing the Agency and Nation.
 - How we do it: Fully capitalize on ORD's special ability to conduct integrated, multidisciplinary research to solve these problems.



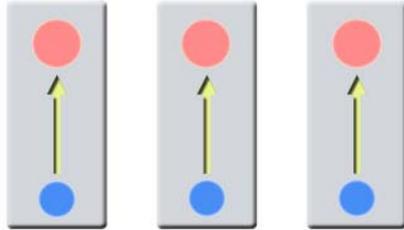


Problems of Broad, National Significance

Attributes

- Potentially large impact on exposed human population and/or affected ecosystems
- Significant geographic scale, temporal reach, and economic consequences
- Relevant to national or international policy-making
- Central to EPA's mission to protect human health and the environment
- EPA action will likely make a significant contribution toward resolution
- Priority for the Agency and the Administrator
- Visible to the public
- Likely to benefit from an integrated, multidisciplinary approach

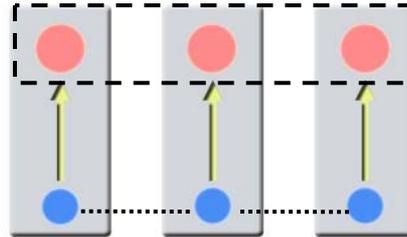
Integrated, Multidisciplinary Research



**Disciplinary
Research**

One discipline/problem
Singular approach:
Specialize to gain a deep
understanding of one
problem

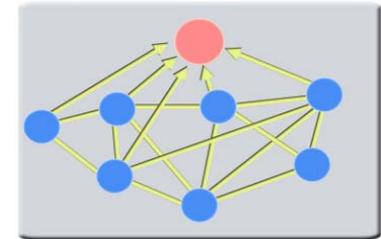
No cooperation across
disciplines



**Multidisciplinary
Research**

More than one
discipline/problem
Additive approach:
Coordinate activities at
beginning; combine
knowledge at end

Cooperation



**IMD
Research**

More than one
discipline/problem
Integrated approach:
Synthesize knowledge at
all phases

True collaboration

Example: Sustainable Water infrastructure

Background

- Over 250 million Americans rely on the water infrastructure for drinking water, sanitation, and environmental protection.
- In many parts of the United States, the “in-place” infrastructure was designed and installed prior to implementation of the CWA and SDWA and represents a significant carbon footprint.



- Infrastructure failures can result in uncontrolled releases of water or sewage, localized flooding, drinking water and environmental contamination, loss of service, and significant public health and environmental impacts.
- Infrastructure reliability and sustainability is vulnerable to water availability, water quality, climate change, land-use practices, homeland security, and socio-economic factors.

Example: Sustainable Water Infrastructure

Research Approach

- ORD is partnering with offices across OW, EPA's Regional Offices, and other stakeholders to develop "analytical frameworks" that identify research needed to inform decisions that sustainably address the deterioration and overextension of our water infrastructure.



- These efforts provide an opportunity to integrate condition assessment, advanced treatment options, and infrastructure rehabilitation with innovative approaches to green infrastructure (carbon and water), water reuse, security, and decentralized treatment.

Actions to Date

- Briefed ORD, Program Office, and Regional Office staff
- Briefed SAB, BOSC, and others
- Formed a Transformation Task Force to:
 - Identify problems of broad, national significance and implement programs to address these problems
 - Partner closely with key stakeholders inside and outside the Agency
 - Communicate on progress
- We welcome your feedback, both now and “downstream.”



Attachment E

Compilation of Member Comments on February 13, 2009 Draft Letter (final)

1) Dr. Meryl Karol

Overall, this is an excellent letter that clearly expresses SAB's concerns. However, as written, the last para on p.1 is confusing and redundant. The following edit is suggested.

...Because these issues involve multiple stressors interacting across a variety of media, ~~and which change— over the temporal cycles of the activities giving rise to the problems as well as the manner in which we attempt their control, there is a critical need to evaluate and prioritize environmental problems in an integrated way that goes beyond current media specific environmental programs.~~ The SAB urges the Agency to establish its environmental priorities for the next five to ten years and to provide the necessary science and research to support and implement cross-media approaches to protecting human health and the environment. EPA also needs more highly integrated decision-making models that can be adapted for a range of decision contexts. Social sciences are critical to the design and implementation of these decision models and need to be an integral part of EPA's organization and structure.

2) Dr. Bernd Kahn

First, minor corrections:

p.1, 1.17: Move 'successfully' behind 'respond'.

p.2, 1.32: Change 'note' to 'notes'.

p.2, 1.37: Delete comma after 'letter'.

Second, The letter is very good, but vague. Could we mention a specific problem related to air or water quality or quantity protection that SAB is addressing for which advice would be welcomed by EPA?

Second Comment (3-4-09):

In re-reading the letter, its theme of advice on re-structuring the Agency for more effective responses and offering SAB to develop explicit guidance seems wise, but emphasizing its applicability to the nation's major concerns of energy independence, global warming, economic recovery, and environmental sustainability – essentially moving the third paragraph to the front – could make the letter more effective. Moreover, we can offer SAB as a resource for directly supporting EPA Administrator advice to the President in quantifying the environmental impacts when combining multiple responses to these concerns to minimize environmental hazard, and to develop the regulations that define acceptable risk in air and water. For example, efforts for energy independence will consider a mix of, among others, increased coal mining,

oil drilling, nuclear power plant construction, vegetation (e.g., corn) growth and processing, oil shale recovery, solar energy, and wind fields, each with its benefits, problems, and limitations. In essence, the letter can indicate that effective responses can be based on a better organization but also the SAB pool of competence and knowledge.

3) Dr. Rogene Henderson:

I am grateful to those who developed this draft and think it is appropriate that we "introduce" SAB to the new Administrator. My overall comment is that the letter could be much more concise and carry more punch. My specific comments follow.

First paragraph: This seems to have 2 points: 1) hi, we are pleased to work with you, and 2) you don't have enough money to do what should be done. The sentences switch back and forth between the two ideas. I suggest eliminating the second point and use the first paragraph to say we are pleased to continue to serve the Agency and we are "delighted" at the words in her testimony. This would involve deleting sentences 2 and 3 and using a little word-smithing to connect sentence 1 to sentence 4.

Six bullets: Are these listed in any priority? I think they should be. I would place bullets 1,3 and 5 at the top of the list. Bullet 4 is not clear. The term "new research models" has no meaning unless an example is given. Bullet 6 is also not clear. Partnerships with whom??? I think it refers to the public/private partnerships discussed on the next page, but it is not clearly presented in this bullet. Here and on the next page, we need to recognize that the EPA already has some public/private partnerships such as the Health Effects Institute, which is half funded by EPA and half funded by the automotive industry. So I think we should encourage EPA to increase such partnerships, because they have worked well in the past.

Third paragraph (Starts on line 36 of first page): Delete second sentence (not needed). The sentence that begins "Because these" on line 44 of first page is a run-on sentence if I ever saw one. I suggest deleting all those introductory phrases all the way from "Because these..." through "attempt their control" and start with "There is a critical need.." That is much more effective, I think.

Fourth paragraph (page 2, line 12); I suggest deleting the first two sentences and starting the paragraph with sentence #3, "The EPA should be ..." (Why delete sentence # 1? Because I do not see that EPA's commitment presents a challenge to the nation. I don't get it. Why delete the second sentence? It is a true concern but seems out of place where it is.)

Fifth paragraph (page 2, line 30): I suggest moving the sentences on lines 35-38 to the beginning of the paragraph, so the letter ends with how

pleased we are to welcome her and how we look forward to working with her in the future.

4) Dr. Duncan Patten:

I like the bullet items, they are broad enough to cover many future issues. However, it isn't clear whether the following paragraphs are meant as an expansion or explanation of the bullet items or another set of expanded discussion points. I think examples probably should be given for the bullet list, but perhaps this letter is not the place to do it unless the paragraphs that follow the bullet list are meant as examples.... as said before, this isn't clear.

5) Dr. Jill Lipoti:

Here's my comment on the letter.

On page 1, line 39, we refer to the 1990 report about setting priorities. It looks really good that we anticipated EPA's needs and provided them with a framework almost 20 years ago.

Why don't we also put in a reference on page 2, line 8 to our 2000 report, "Toward Integrated Environmental Decision-Making". That way we give EPA some additional information about our recommendations for social science expertise. It also looks good that we provided guidance almost 10 years ago.

I think Administrator Jackson will be receptive to these recommendations.

6) Dr. Judy Meyer:

p. 1, line 44: I think we need to add a sentence to the effect that the same comment applies to EPA's current approach. That emphasizes that the problem is still with us; furthermore, as written it is not clear whether the next sentences are continuing with the recommendations from a decade ago or whether we are making our own recommendations.

p. 2, lines 1-4: That sentence is much too long and so convoluted that I am not sure what we are trying to say! Here is a possible edit. There is a critical need to evaluate and prioritize environmental problems in an integrated way that goes beyond current media-specific environmental programs because these problems involve multiple stressors that interact across a variety of media and that change over the temporal cycles of the activities. The nature of these stressors give rise to the problems as well as influencing the effectiveness of the manner in which we attempt their control.

p. 2, line 6: add "and multi-stressor" so it reads: "provide the necessary science and research to support and implement cross-media and multi-stressor approaches to protecting human health and the environment."

p. 2, line 20: But none of those agencies are regulatory, which I think presents a particular problem for EPA in establishing public-private partnerships. The problem is both a legal issue, but probably more importantly, one of public perception. I really question whether we as the SAB want to advise this; it seems far outside our role as science advisors. I am going to need to hear some convincing arguments from the proponents of including this before I can support it.

p. 2, line 35: "soon" sounds very vague and as though we do not have a sense of urgency about this. I think we do. I suggest we provide some specifics and give ourselves a deadline for accomplishing this.

7) Dr. George Lambert:

I think all the thoughts are there, but the thoughts could be framed in a more collaborative and less directive approach. This can begin with the first paragraph where sentences from the last paragraph could be used. We should welcome her, explain our collective excitement to have her at the lead, and the SAB is here to assist her and the agency in their goal of making the agency more efficient and scientifically more rigorous.

The SAB met and had some initial observations which we would like to briefly share at this time and take the opportunity in the future to go into greater detail. Again the SAB is here to make the Agency the best it can be for the betterment of the American people.

Just some general suggestions/observations

Later comment: The letter is getting better. Great job by you and Deb et al. I still might take most of the last paragraph and bring it into paragraph one. The introduction should be one of welcoming and offering her our assistance in her desire to improve the science of the Agency.

I would have the bullets highlight all the important over riding statement/opinion and the remainder of the letter to give some limited support. I would re-order the prioritization of the bullet s and have the last bullet be about social sciences as suggested by others.

I would NOT indicate the SAB feels the agency was not successful but that this period of natural changes can be used to improve the agency and at the begging is the time that change may be most effective. Therefore on page 1 line 27 I would delete the word "successfully" as it implies the agency was not successful in the past. We should not go there but only be positive about the potential for the future

Line 29, delete "must" and insert "can take this opportunity of change to" I think a final mark up of the letter and final comments would be helpful.

- 8) Dr. Valerie Thomas:
It seems that everyone else did a really good job.
- 9) Dr. Swackhamer:
I like the new language - thanks.
- 10) Dr. James Bus:
I concur with Deb's comment.
- 11) Dr. John Giesy:
The letter looks good to me.
- 12) Dr. James Sanders:
The letter is a good one, and I don't recommend any changes.
- 13) Dr. Agnes Kane:
I have no comments - this letter is excellent.
- 14) Dr. James Galloway:
I have read over the letter and find it suitable. Thanks to all who put it together.
- 15) Dr. Taylor Eighmy:
Sorry to not be able to join you (Governor and NH stimulus meeting). As you discuss the letter to the administrator, it might be helpful to have the FY10 President's budget for EPA in mind (and stimulus funds as well). Though not detailed at this time, a 34% increase is being asked for (what the Congress does however...) and some initiatives are being advanced: clean water, Great Lakes, energy and global Warming, Secure water supply, superfund.
- Perhaps the detailed planning is already available to some of you for FY10 and beyond and more is known, but if some of the initiatives are described thusly, we might want to take this into consideration.
- 16) Dr. Kerry Smith:
My comment is to replace last three bullets with discussion that "there is limited capacity inside and outside the agency to organize and do research so we need to explore innovative strategies to define, integrate and organize the research that addresses problems consistent with EPA's mission.
- 17) Mr. David Rejeski:
[Note: This comment addresses Dr. Teichman's presentation but not precisely the draft letter though the comment might be appropriate to consider in re the letter.]I hope that during the call we can have a

discussion about this concept of "integrated, multidisciplinary research."
Where did this idea come from?

There is a fair amount of social science and economic research on collective problem solving that could be brought to bear on the design, implementation, and evaluation of an interdisciplinary research program. Though cognitive diversity generally leads to better problem solving and predictive modeling, it is not easy to design the processes (Scott Page's work at U. Michigan is clear about this). So where is the research behind this new research model?

Also, building new interdisciplinary fields requires a long time and significant funding. NSF and NIH have the capacity to build new fields, but generally not EPA. NIH built the field of bioethics through the Genome Project, but the investment was \$120 million over a decade.

Again, I'd like to see some evidence that IMD is more than just a slogan, that it is based on solid research, and there is a financial commitment from the agency to pull this off.

18) Dr. Baruch Fischhoff:

In response to Dave's comment, as a case in point, the members might consider the second page of the attached report to the EPA Administrator, from the Homeland Security Advisory Committee, which reports to the full SAB. It focuses on the adequacy of the integration and multi-disciplinarity in one aspect of the Sustainable Water Infrastructure initiative, used as an example in "Transforming ORD." The program in question has recently asked for a new consultation with the HSAC, which might provide an interesting test case, for our ability to make progress.

I also recommend the final page, from the former chair of the DHS STAC.

19) Dr. Jana Milford:

I think the letter is excellent, and have no further comments. I regret that I won't be able to participate in the conference call on Thursday, due to teaching commitments.

20) Dr. Robert Twiss:

Clean version of Track Changes by R. Twiss

This is to offer our congratulations on your appointment and to take positive note of your testimony that: "... science must be the backbone of what EPA does". Since 1979, the Science Advisory Board (SAB) has provided independent advice to EPA Administrators on a wide range of scientific and technical topics, assisting EPA in improving its scientific assessments for decision making and its research programs. In recent years, it has become increasingly apparent that resource limitations and the existing institutional structure are compromising EPA's ability to successfully respond to the changing nature of environmental

problems. It is our opinion that the Agency must transform itself if it is to surmount these barriers to change. Accordingly, as you begin your tenure at EPA, we wanted to take this opportunity to underscore key science needs, and respectfully offer the following recommendations:

- Current and emerging problems facing our nation are cross-cutting, and EPA must increase efforts to address environmental problems in an integrated fashion across current media-specific programs.
- Solution of our most serious problems will require evolution of institutional and individual behavior; thus we must strengthen research and operational capacity in the social sciences.
- The agency should take the lead in addressing the environmental and health implications of energy and climate change policies.
- EPA should consider new research models to overcome barriers that now limit development of knowledge of environmental problems and their solutions. [It is not clear to me what is intended here]
- Despite the economic crisis, EPA should move to restore the budget for research and development in order to maintain international leadership of the US on environmental protection
- EPA should develop more robust partnerships with other agencies, industry, NGOs, universities, and the public, both within the US and internationally.

Today's environmental problems are clearly different and more complex than those of 30 years ago, and their solutions are even more challenging. Scientific advances and emerging technologies offer new opportunities for improving human welfare and the environment, but many also pose new risks and challenges. In its 1990 report "Reducing Risk: Setting Priorities and Strategies for Environmental Protection", the SAB recommended that EPA target opportunities for the greatest risk reduction. The SAB also pointed out that a stove-pipe approach to environmental protection, in large part due to the Agency's focus on media-specific environmental mandates and technologies that target specific pollutant sources, was no longer suited for use in addressing real world environmental problems.

Our most important environmental problems involve multiple stressors interacting across a variety of media, which change over the temporal cycles of the activities. This gives rise to the problems themselves, as well as the manner in which we attempt their control. Thus, there is a critical need to evaluate and prioritize environmental problems in an integrated way, one that goes beyond current media-specific environmental programs. The SAB urges the Agency to re-establish its environmental priorities for the next five to ten years and to provide the necessary science and research to support and implement cross-media approaches.. EPA also needs more highly integrated decision-making models that can be adapted for a range of decision contexts. Social sciences are critical

to the design and implementation of these decision models and need to be an integral part of EPA's organization and structure.

EPA's recent commitment to environmental sustainability and priority issues such as climate change, alternative energy, and energy security present the nation with a challenge and an opportunity to develop more integrated approaches to environmental protection. New, broad-reaching energy and climate change policies may bring unintended harm to ecosystems and to human health in addition to co-benefits. The EPA should be the nation's lead agency in analyzing the implications of energy and climate change policies and guiding the country to optimal strategies. However, EPA must reexamine its research program, its investments, and also explore innovative ways to conduct research and leverage funding. For example, NIH, NSF, DOE, and DARPA have all recently considered creative public-private partnerships and funding mechanisms that could be models for consideration by EPA.

The SAB is prepared to assist the Administrator in the inventory and assessment of possible models. The SAB understands the challenges raised by the current state of the economy. EPA must commit to establishing a research base that will make it possible for the nation to acquire the knowledge needed to address the difficult environmental problems that we now face. Because resources are limited, it is imperative that EPA also take a leadership role, both within and outside of the federal government and especially in the international arena, and to develop new ways of partnering with stakeholders to achieve its mission.

The SAB is pleased to welcome you as the new leader of the nation's environmental programs. We applaud your deep commitment to scientific integrity. We agree with your statement to EPA's employees that the Agency must clearly articulate its policy judgments and actions to account for knowledge gaps and scientific uncertainties. We look forward to working with you in the future as the most critical environmental issues are addressed. Soon, the SAB intends to begin a project to develop explicit advice on how EPA can enhance its science program in order to address the integrated and complex environmental problems that confront the nation. We would be pleased to discuss this letter and our project to develop the longer-term advisory whenever you are available.

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39
40 Sincerely,

41
42 Dr. Deborah L. Swackhamer
43 Chair
44 US EPA Science Advisory Board