



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY  
WASHINGTON, D.C. 20460

OFFICE OF THE ADMINISTRATOR  
SCIENCE ADVISORY BOARD

August 4, 2006

**MEMORANDUM**

**SUBJECT:** U.S. EPA Science Advisory Board (SAB) Hypoxia Advisory Panel –  
Determination of Panel Membership

**FROM:** Thomas M. Armitage, Ph.D. /Signed/  
Holly Stallworth, Ph.D. /Signed/  
Designated Federal Officers  
EPA Science Advisory Board Staff Office (1400F)

**THRU:** Daniel Fort /Signed/  
SAB Ethics and FACA Policy Officer  
EPA Science Advisory Board Staff Office (1400F)

**TO:** Vanessa Vu, Ph.D.  
Director  
EPA Science Advisory Board Staff Office (1400F)

This memorandum documents the process and addresses the set of determinations used in forming this Science Advisory Board Panel. It provides background information on the subject SAB activity and addresses:

1. The general charge developed for the Panel;
2. The type of panel that will be used to conduct the review, the name of the Panel, identification of the Panel Chair, and the types of expertise needed to address the charge;
3. How individuals were placed on the “short list” of candidates for the Panel;
4. Identification of parties who are potentially interested in or may be affected by the topic to be reviewed;
5. Whether the charge involves a particular matter and how conflict of interest regulation apply to members of the panel; and
6. Selection of Panel Membership.

## **A. Background**

EPA participates with other Federal agencies, state and tribes in the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force. In 2001, the Task Force released the *Action Plan for Reducing, Mitigating and Controlling Hypoxia in the Northern Gulf of Mexico* (or *Action Plan*). This *Action Plan* was informed by the underlying science described in *An Integrated Assessment of Hypoxia in the Northern Gulf of Mexico* (or *Integrated Assessment*) developed by the National Science and Technology Council, Committee on Environment and Natural Resources. Six technical reports provided the scientific foundation for the *Integrated Assessment*.

The aforementioned documents provide a comprehensive summary of the state-of-the-science for the Gulf of Mexico hypoxic zone through about the year 2000. Since then, scientific literature and understanding regarding the Gulf of Mexico and the Basin has advanced. To capture recent advances in the scientific understanding of hypoxia, the causes and potential solutions, the Task Force has sponsored three scientific symposia and planned for a fourth symposium including:

- A. Upper Basin Science Symposium, September 26 - 28, 2005, Ames, IA;
- B. Gulf Hypoxia Science Symposium, April 25 - 27, 2006, New Orleans, LA;
- C. Lower Basin Science Symposium, June 1 - 2, 2006, New Orleans, LA;
- D. Sources, Fate and Transport Symposium, November 7-9, 2006, Minneapolis, MN.

EPA's Office of Water is requesting that the SAB convene an expert panel to conduct an updated evaluation of the current state-of-the-science regarding the causes and extent of hypoxia in the Gulf of Mexico and the scientific basis of possible management options in the Mississippi River Basin to mitigate the problem of hypoxia in the Gulf of Mexico. EPA, in conjunction with its federal, state, and tribal partners will consider the SAB's advice and recommendations as future revisions to the *Action Plan* are developed.

## **B. Determinations**

### **1) The general charge to the Panel:**

The SAB is asked to prepare a report that focuses on the scientific advances since 2000 that may have increased understanding of hypoxia in the Gulf of Mexico and management options in three general areas.

1. *Characterization of the Cause(s) of Hypoxia.* The physical, biological and chemical processes that affect the development, persistence and extent of hypoxia in the northern Gulf of Mexico.
2. *Characterization of Nutrient Fate, Transport and Sources.* Nutrient loadings, fate, transport and sources in the Mississippi River that impact Gulf Hypoxia.

3. *Scientific Basis for Goals and Management Options.* The scientific basis for, and recommended revisions to, the goals proposed in the Action Plan; and the scientific basis for the efficacy of recommended management actions to reduce nutrient flux from point and non-point sources.

In addressing the state of the science, the SAB is asked to focus on the strengths and limitations of the science in managing the Gulf hypoxia problem, including available data, models and model results, and uncertainty. The SAB is asked to pay particular attention to any new information that has emerged since, or that was not adequately considered in, the last *Integrated Assessment*.

Background materials for this evaluation will include, but are not limited to the *Action Plan*, *Integrated Assessment*, and six technical documents prepared in 2000, a bibliography of scientific articles primarily related to the science of hypoxia in the Gulf published subsequent to the 2000 *Integrated Assessment*, a summary from the Management Action Reassessment Team (MART) of federal programs to increase watershed planning, reduce loadings from agricultural lands and encourage better land use practices, available information from USDA's ongoing Conservation Effects Assessment Project (CEAP) program, as well as other documentation of efforts to control nutrients in the Mississippi River Basin.

**2) Type of panel that will be used to conduct the review, the types of expertise needed to address the charge, the name of the panel, and identification of the panel chair:**

The advisory activity will be conducted by an EPA Science Advisory Board *Ad Hoc* Panel. The SAB Staff Office announced to the public through a *Federal Register* notice on February 7, 2006 that the SAB was soliciting nominations for nationally recognized experts in the natural and life sciences, decision sciences, economics, engineering, and natural resource or environmental management to serve on the Panel. These experts will have knowledge and experience in understanding the underlying science and management of hypoxic conditions. The name of the panel is the "Hypoxia Advisory Panel." Dr. Virginia Dale, a member of the Chartered SAB, will chair this SAB panel. In developing its report, the Panel will consider all relevant information and may consult other subject matter experts as deemed appropriate.

**3) How individuals were placed on the "short list":**

The SAB Staff Office identified 91 experts to be considered for the Panel. On May 31, 2006 the SAB Staff Office posted a notice on the SAB website inviting public comments on the "short list" of candidates for the Panel. In particular, the notice stated that the Staff Office would welcome any information pertinent to the candidate's potential service on the Panel and/or expert workgroups of the panel, and asked that they be submitted no later than June 23, 2006. *The SAB Staff Office received comments on the "short list" of candidates for the Hypoxia Advisory Panel from 34 individuals and/or organizations (see attachment for the list of commenters).*

**4) Identification of parties who are potentially interested in or may be affected by the topic to be reviewed:**

The Panel's evaluation of the current state-of-the-science concerning hypoxia in the Gulf of Mexico will be considered by EPA and other federal, state, and tribal partners in revising the

*Action Plan for Reducing, Mitigating, and Controlling Hypoxia in the Northern Gulf of Mexico.* Potentially interested and affected parties may include: 1) Persons or businesses associated with agriculture, commercial fishing, or recreational fishing; 2) federal, state, and local government agencies, and non-governmental organizations; 3) academic researchers involved with the study of the causes and extent of hypoxia in the Gulf of Mexico and/or hypoxia management options in the Mississippi Basin.

**5) Whether the charge involves a particular matter and how conflict of interest regulations apply to members of the panel:**

18 U.S.C 208 provision states that:

“An employee is prohibited from participating personally and substantially in an official capacity in any particular matter in which he, to his knowledge, or any person whose interests are imputed to him under this statute has a financial interest, if the particular matter will have a direct and predictable effect on that interest.”

For a conflict of interest to be present, all elements in the above provision must be present. If an element is missing, the issue does not involve a formal conflict of interest. However, the general provisions in the “appearance of a lack of impartiality guidelines” may still apply and need to be considered.

**Personal and Substantial Participation:**

Participating personally means participating directly. Participating substantially refers to involvement that is of significance to the matter [5C.F.R. 2640.103(a)(2)]. For this advisory activity, panel members will be participating personally in the matter through attendance at meetings, teleconferences and other means.

**Direct and Predictable Effect:**

A direct effect on a participant’s financial interest exists if, “...a close causal link exists between any decision or action to be taken in the matter and any expected effect of the matter on the financial interest...A particular matter does not have a direct effect...if the chain of causation is attenuated or is contingent upon the occurrence of events that are speculative or that are independent of, and unrelated to, the matter. A particular matter that has an effect on a financial interest only as a consequence of its effects on the general economy is not considered to have a direct effect.” [5 C.F.R. 2640.103(a)(i)]. A predictable effect exists if, “...there is an actual, as opposed to a speculative, possibility that the matter will affect the financial interest.” [5 C.F.R. 2640.103(a)(ii)].

**Particular Matter:**

A “particular matter” refers to matters that “...will involve deliberations, decision, or action that is focused upon the interests of specific people, or a discrete and identifiable class of people.” It does not refer to “...consideration or adoption of broad policy options directed to the

interests of a large and diverse group of people.” [5 C.F.R. 2640.103 (a)(1)].

The Hypoxia Advisory Panel’s activity qualifies as a **particular matter of general applicability** because the resulting advice will be part of a deliberation, and under certain circumstances the advice could involve the interests of a discrete and identifiable class of people but does not involve specific parties. That group of people constitutes those who are associated or involved with the potentially interested or affected parties, as identified above.

Appearance of a Lack of Impartiality Considerations:

The Code of Federal Regulations [5 C.F.R. 2635.502(a)] states that:

“Where an employee knows that a particular matter involving specific parties is likely to have a direct and predictable effect on the financial interest of a member of his household, or knows that a person with who he has a covered relationship is or represents a party to such matter, and where the person determines that the circumstances would cause a reasonable person with knowledge of the relevant facts to question his impartiality in the matter, the employee should not participate in the matter unless he has informed the agency designee of the appearance problem and received authorization from the agency designee.”

Further, 5 C.F.R. 2635.502(a)(2) states that:

“An employee who is concerned that circumstances other than those specifically described in this section would raise a question regarding his impartiality should use the process described in this section to determine whether he should or should not participate in a particular matter.”

Prospective candidates were evaluated against the 5 C.F.R. 2635(a)(2) general requirements for considering an appearance of a lack of impartiality. Information used in this evaluation has come from information provided by potential advisory panel members (including, but not limited to, EPA 3110-48 confidential financial disclosure forms) and public comment.

To further evaluate any potential appearance of a lack of impartiality, the following five (5) questions were posed to all prospective advisory panel members:

1. Please describe any contracts, grants or other paid employment you have had within the last 10 years that are associated with nutrients in the Mississippi River Basin and their relationship to hypoxia in the Gulf of Mexico. For each contract, grant or other type of paid employment, briefly describe the activity and your role in it.
- 2) Have you served on previous advisory panels, committees or workshops concerning nutrients in the Mississippi River Basin and/or hypoxia in the Gulf of Mexico? If so please identify that activity and your involvement in it.
- 3) Have you made any public statements (written or oral), submitted comments, or taken a

position on nutrients in the Mississippi River Basin and their relationship to hypoxia in the Gulf of Mexico? If such statements were oral, please provide a brief description of those comments, or if published (i.e., you were quoted in the press), please provide a copy of the article. If those statements were written, please provide a copy of the statements.

- 4) Have you had any previous involvement in developing, reviewing or commenting on the six Hypoxia Assessment Reports (found at [http://oceanservice.noaa.gov/products/pubs\\_hypox.html](http://oceanservice.noaa.gov/products/pubs_hypox.html) and issued in 2000 by the Mississippi River/Gulf of Mexico Watershed Nutrient Task Force) and/or the Integrated Assessment of Hypoxia in the Northern Gulf of Mexico [found at [http://www.nos.noaa.gov/products/hypox\\_finalfront.pdf](http://www.nos.noaa.gov/products/hypox_finalfront.pdf) and issued in May 2000 by the Committee on Environment and Natural Resources (CENR) of the National Science and Technology Council]. Please describe that involvement.
5. Do you know of any reason that you might be unable to provide impartial advice on the matter to come before the panel or any reason why your impartiality in the matter might be questioned (e.g., constraints imposed by your employer on the advice you will be able to provide, involvement in a lawsuit, gift of research materials and equipment)?

As a result of a review of all relevant information including financial disclosure, the responses to the five questions above, and public comments, the Deputy Ethics Official of the Science Advisory Board, in consultation with the SAB Ethics and FACA Policy Officer, has determined that there are no conflicts of interest or appearances of a lack of impartiality for the members of this panel.

#### **6) Selection of Panel Membership:**

The SAB Staff Office Director makes the decision about who serves on the Hypoxia Advisory Panel during the “Panel Selection” phase. For the EPA SAB Staff Office, a balanced committee or panel is characterized by inclusion of candidates who possess the necessary domains of knowledge, the relevant scientific perspectives (which, among other factors, can be influenced by work history and affiliation), and the collective breadth of experience to adequately address the charge. Specific criteria to be used in evaluating an individual Panel member include: (a) scientific and/or technical expertise, knowledge, and experience (primary factors); (b) availability and willingness to serve; (c) absence of financial conflicts of interest; (d) absence of an appearance of a lack of impartiality; and (e) skills working in committees, subcommittees and advisory panels; and, for the Panel as a whole, (f) diversity of, and balance among, scientific expertise, viewpoints, etc. The membership of the Panel includes the following individuals:

1. Dr. Virginia H. Dale, Oak Ridge National Laboratory (TN) (Chair)
2. Dr. Thomas S. Bianchi, Texas A&M University (TX)
3. Dr. Alan F. Blumberg, Stevens Institute of Technology (NJ)
4. Dr. Walter R. Boynton, The University of Maryland Center for Environmental Science (MD)
5. Dr. Otis Brown, University of Miami (FL)

6. Dr. Daniel J. Conley, Aarhus University, (Denmark)
7. Dr. William G. Crumpton, Iowa State University (IA)
8. Dr. Mark B. David, University of Illinois (IL)
9. Dr. Robert Duce, Texas A&M University (TX)
10. Dr. Denis Gilbert, Maurice Lamontague Institute (Canada)
11. Dr. Robert W. Howarth, Cornell University (NY)
12. Dr. Catherine L. Kling, Iowa State University (IA)
13. Dr. R. Richard Lowrance, USDA Agricultural Research Service (GA)
14. Dr. Kyle R. Mankin, Kansas State University (KS)
15. Dr. Judith L. Meyer, University of Georgia (GA)
16. Dr. James J. Opaluch, University of Rhode Island (RI)
17. Dr. Hans W. Paerl, University of North Carolina at Chapel Hill (NC)
18. Dr. Kenneth H. Reckhow, Duke University (NC)
19. Dr. James G. Sanders, Skidaway Institute of Oceanography (GA)
20. Dr. Andrew Sharpley, USDA Agricultural Research Service (PA)
21. Dr. Thomas W. Simpson, University of Maryland (MD)
22. Dr. Clifford S. Snyder, Potash & Phosphate Institute (AR)
23. Dr. L. Donelson Wright, Virginia Institute of Marine Science of the  
College of William and Mary (VA)

Concurred,

/Signed/

August 4, 2006

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Vanessa Vu, Ph.D.  
Director  
EPA Science Advisory Board Staff Office (1400F)

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Date

## Attachment

### List of Commenters on “short list” candidates for the Hypoxia Advisory Panel

1. American Farm Bureau – e-mail dated June 20, 2006
2. Maslyn, Mark – American Farm Bureau Federation, Washington DC, e-mail dated June 14, 2006
3. American Soybean Association – e-mail dated June 20, 2006
4. Barlow, Dave – Simplot Company, Placerville, CA, e-mail dated June 14, 2006
5. Benson, William – US EPA, e-mail dated June 6, 2006
6. Bilas, B.J. – Nu-Gro Technologies, e-mail dated June 15, 2006
7. Boesch, Donald – University of Maryland, e-mail dated June 22, 2006
8. Chesney, Ed – Louisiana University Marine Consortium, e-mail dated June 7, 2006
9. Fairchild, Dean – The Mosaic Company, Plymouth MN, e-mail dated June 19, 2006
10. Ford, Mark – Coalition to Restore Coastal Louisiana, e-mail dated June 23, 2006
11. Goozner, Merrill – Center for Science in the Public Interest, e-mail dated June 23, 2006
12. Hall, Tom – Crop Life America, e-mail dated June 6, 2006
13. Hartney, Mary – Florida Fertilizer and Agrichemical Association, Winter Haven FL, e-mail dated June 22, 2006
14. Heathcote, Susan – Iowa Environmental Council, e-mail dated June 23, 2006
15. Herz, William – The Fertilizer Institute, Washington DC, e-mail dated June 21, 2006
16. Hornback, Chris – National Association of Clean Water Agencies, Washington DC, e-mail dated June 23, 2006
17. Hunt, John – Potash Corporation, Northbrook IL, e-mail dated June 22, 2006
18. Lemke, Dean – Iowa Department of Agriculture and Land Services, e-mail dated June 23, 2006

19. Kelley, Lisa – National Corn Growers Association, Washington DC, e-mail dated June 20, 2006
20. Kruse, Charles – Missouri Farm Bureau Federation, Jefferson City, MO, letter dated June 22, 2006
21. McKinnie, Scott – Far West Agribusiness Association, Spokane WA, e-mail dated June 19, 2006
22. Muller, Mark – Institute for Agriculture and Trade Policy, e-mail dated June 23, 2006
23. National Cattleman's Association – e-mail dated June 20, 2006
24. National Corn Growers Association – e-mail dated June 20, 2006
25. National Council of Farmers Cooperatives – e-mail dated June 20, 2006
26. National Pork Producers Council – e-mail dated June 20, 2006
27. Pansing, Cynthia – Mississippi River Basin Alliance, Minneapolis, MN, e-mail dated June 23, 2006
28. Parrish, Don – American Farm Bureau Federation, Washington DC, e-mail dated June 15, 2006
29. Parrish, Sharon – US EPA, e-mail dated June 22, 2006
30. Patterson, Joyce – Missouri Farm Bureau, e-mail dated June 23, 2006
31. Royer, Todd V. – Indiana University, e-mail dated June 14, 2006
32. Sarthou, Cynthia – Gulf Restoration Network, e-mail dated June 23, 2006
33. Schellhorn, Jim – Terra Industries, e-mail dated June 14, 2006
34. Tindall, Terry – Simplot Company, Boise ID, e-mail dated June 20, 2006