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Dr. Deborah Swackhamer  
Chair, Science Advisory Board  
U.S. Environmental Protection Agency  
1200 Pennsylvania Avenue, N.W.  
Washington, DC 20460

Dear Dr. Swackhamer:

On behalf of the Coalition for Effective Environmental Information ("CEEI"), we are providing comments regarding the U.S. Environmental Protection Agency's ("EPA's") plan on strategic directions for environmental research, which is currently under discussion by the Science Advisory Board ("SAB"). In particular, we urge the SAB to emphasize and amplify its recommendations regarding risk communication research, which is addressed in its draft report.<sup>1</sup>

CEEI is a group of leading corporations and business groups interested in the policies guiding how agencies collect, manage, use and disseminate information about health and environmental matters.<sup>2</sup> CEEI has a particular interest in promoting "information stewardship" – the obligation of agencies to present information about health and environmental matters in an accurate, balanced and understandable way.

CEEI believes that effective risk communication should be one of the highest policy and institutional priorities for EPA. While the Agency often thinks of itself as a regulatory agency, most Americans actually experience EPA primarily as an information source. The public sometimes obtains health and environmental information directly from EPA. More often, however, the public receives EPA information about health and environmental issues through intermediary parties, which may include state or local governments, media outlets of all kinds, business organizations, academic institutions and environmental organizations.

In all of these contexts, however, EPA has struggled at times to find ways to communicate its perspective in an understandably way. An ongoing example of the problem has been how EPA describes the hazards of chemicals to the public. EPA uses various forms of hazard labels that are intended to summarize the Agency's perspective. Some of these labels suggest higher levels of

<sup>1</sup> SAB Draft Report dated February 6, 2008 for Board Review, p. 19.

<sup>2</sup> CEEI includes representatives from the aerospace, chemical, automobile, petroleum, electronics and consumer products industries.

public danger than EPA truly intends (e.g., "likely human carcinogen" to express a weight of evidence evaluation, "chemicals of high concern" in describing priorities for further toxicity testing.)

EPA needs to improve its institutional capability to provide the public with useful, understandable information about health and environmental risk. Too often EPA pursues an "end of pipe" strategy to risk communication, viewing this function as essentially the issuance of a press release at the end of a project. In fact, EPA would better serve the public if it treated risk communication as an essential and ongoing component of its risk assessment and risk management responsibilities, drawing an analogy to how EPA would view environmental protection as a linchpin of sustainable development.

To accomplish this objective, EPA should make a greater commitment to risk communication on several fronts:

- Make risk communication an ongoing, rather than a concluding, component of its risk assessment and risk management policies;
- Incorporate risk communication responsibilities into the budgets for specific programs and projects;
- Establish a center of excellence on risk communication within the Agency that develops the knowledge base on risk communication research and provides pragmatic advice to program offices on specific issues;
- Provide relevant training on risk communication to EPA employees and reward employees for innovation in the field;
- Engage relevant stakeholders, the public health community and key public audiences to understand the public's expectations for useful information on risk-related matters; and
- Establish a policy-relevant research strategy on risk communication issues.

Our hope is that the SAB can work with EPA to identify a set of risk communication research topics that address the Agency's priority needs. We know that the SAB has several leading national experts in this field who could undoubtedly provide valuable insights on what issues warrant attention. While we do not claim to have a comprehensive plan for such research, we offer a few topics for your consideration, which reflect our experience with risk communication challenges:

- As suggested earlier in this letter, EPA uses hazard labels in its chemical risk assessment programs that sometimes convey a greater sense of public danger than EPA actually intends. How should EPA design hazard labels to match its own intended message?
- With the increasing sophistication of analytical techniques, EPA is able to detect and quantify the levels of chemicals in the body and in environmental media with much more precision. Over the last several decades, environmental data is moving steadily from parts per million measurements to parts per trillion measurements. EPA has had

difficulty explaining the health and environmental significance of low numbers that it can measure, finding itself unable to answer the question "Should I be concerned about this data?"

- It is difficult to address public concerns about low-probability, high-impact events. Yet emerging environmental issues are presenting more examples where this type of scenario is present. In the context of important topics like climate change or the environmental implications of new technology (e.g., biotechnology, nanotechnology), the public will sometimes hear experts discuss scenarios with Draconian outcomes (e.g., loss of major cities to flooding, uncontrolled self-replicating sources of disease or material destruction) that are theoretically possible but unlikely to occur as a practical matter. How should EPA communicate with the public about such matters, helping the public understand what is possible and what is probable?
- In its risk assessment activities of the last several years, EPA has emphasized the importance of characterizing the uncertainty that often surrounds risk assessment on particular topics. While such analysis can be helpful to policymakers, it is not clear how the various forms of uncertainty analysis (e.g., a risk range with a central tendency) are perceived or used by members of the public. Are there effective ways to discuss uncertainty with the public without conveying confusion and indecisiveness?
- When making decisions about the "acceptability" of health or environmental risks, consumers typically weigh an array of factors concerning the alternatives they have, the benefits of the risk-related activity, the social "fairness" of the risk and other values-based considerations. It is rare for EPA, or any government agency, to provide useful contextual information addressing those factors when communicating about health or environmental risk. It would be valuable to learn more about how individuals weigh various factors in interpreting risk-related information so that government agencies could more effectively provide relevant information to the public.

CEEI offers these ideas, which are recurring challenges for EPA, in the hope that we can stimulate broader discussion of a risk communication research agenda for the Agency. We certainly recognize that EPA and the SAB may identify other priority issues. Our primary goal, however, is to emphasize the overall importance of developing greater risk communication awareness and competence at the Agency.

The need to focus on this objective could never be greater. The public is receiving increasing flows of information about health and environmental issues, particularly from online sources. This flow of information is occurring at a time when the science of risk assessment is becoming more sophisticated, challenging even environmental professionals to understand the new techniques for conceptualizing, measuring and characterizing the interaction between environmental conditions and health or environmental effects. All of this is occurring as public interest, and anxiety, is increasing about matters as diverse as climate change, tainted consumer products from foreign countries, the potential for pandemics and possible threats from new technology.

The two topics that the SAB will be discussing at its upcoming meeting on October 27-28, 2008 are good examples of emerging issues that present risk communication challenges. The public is certainly receiving mixed messages about the economic and social impacts of biofuels. When Congress was enacting the Energy Independence and Security Act in December 2007, the public heard a fairly consistent message that greater use of home-grown biofuels was a critical national strategy that would yield advantages for the environment, energy prices and our national security. Within a few months, however, a variety of experts were characterizing the shift to biofuels as a primary cause of world hunger and higher prices for Americans at the grocery store.

The field of epigenomics is a new addition to the list of "nomics" research that seeks to explain how pollutants may interact with the body to cause adverse effects. As EPA pursues these new areas of scientific inquiry, it would be helpful for the Agency to offer an explanation of how these fields of research do and do not relate to basic questions of public health. Otherwise, the public could easily see the new "nomics" research as uncovering new forms of human disease, a fate that would be similar to the confusing messages about topics like endocrine disruption.

As the SAB discusses these two topics and considers the larger issues around the strategic directions for environmental research, we hope you will give high priority to the need for a strong risk communication research agenda and the development of EPA's institutional capabilities in this area. This is an essential mission-critical function for the Agency. The best scientific work that EPA can achieve will ultimately be a policy failure if it does not provide responsive and understandable answers to citizen questions about public health and safety.

Please let us know if we can assist this effort in any way. Thank you for your attention to this topic.

Respectfully submitted,

Mark A. Greenwood