

**House Subcommittee on Energy and the Environment
Committee on Science, Space, and Technology
U.S. House of Representatives
Hearing on “Fostering Quality Science at EPA: Perspectives on Common Sense Reform –
Day II”
Room 2318 Rayburn House Office Building
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My name is Deborah Swackhamer, and I hold the Charles M. Denny, Jr. Chair in Science, Technology, and Public Policy in the Hubert H. Humphrey School of Public Affairs at the University of Minnesota, and co-direct the University’s Water Resources Center. I am trained as an environmental chemist, and am also professor of Environmental Health Sciences in the School of Public Health.

I was appointed chair of the SAB in 2008 by EPA Administrator Stephen Johnson, and reappointed for a second term in 2010 by EPA Administrator Lisa Jackson. From 2006-2008, I served on the Board of Scientific Counselors (BOSC) for EPA’s Office of Research and Development (ORD). While my views, perspectives, and opinions are my own, I am testifying at this hearing on behalf of the SAB.

The Role of the SAB. The SAB provides science advice to the EPA Administrator on a wide range of scientific and technical issues. These issues are complex and require a diversity of expertise to address. The SAB membership brings expert knowledge from the natural and physical sciences, engineering, health sciences, and social sciences including economics. Based on my years of service on the Board, I believe that the Agency has a robust process for identifying members with outstanding scientific credentials who are committed to helping improve the quality of Agency science. The SAB and its committees and panels review Agency work products, undertake special studies when requested, and perform self-initiated studies on topics that the Board considers to be of critical importance. The Board is in the process of finalizing a report on how the Agency can do a better job of integrating science and problem formulation in its decision making¹.

Recent SAB advice that is directly relevant to this hearing includes the two reports we produced (2009², 2010³) on Strategic Directions for EPA Research, prepared for ORD to encourage approaches and strategies needed to do their science most effectively. These two reports have

¹ [Science Integration for Decision Making at the U.S. Environmental Protection Agency \(EPA\) \(draft January 5, 2012\).](#)

² [EPA’s Strategic Research Directions 2008: An Advisory by the EPA Science Advisory Board.](#) EPA-SAB-09-006.

³ [Office of Research and Development Strategic Research Directions and Integrated Transdisciplinary Research.](#) EPA-SAB-10-010.

been instrumental in moving ORD's research enterprise towards a more interdisciplinary approach, and one that can respond more nimbly and effectively to the needs of the Program Offices and Regional Offices. The Administrator's "One EPA" and ORD Assistant Administrator Anastas' "the Path Forward" strategies are consistent with our previous advice.

The SAB is supportive of many changes that have taken place in ORD in recent years. We have advised strongly for an integrated approach to EPA's scientific research, and the Agency has responded, as indicated by its realignment of research programs from 13 individual programs to 6 integrated programs. We have advised to include a greater degree of social and decision science research, and the Agency is moving to fill this need. The social sciences are a needed component to adequately address issues such as sustainability, homeland security, risk communication, valuation, and environmental stewardship and human behavior. The Agency needs to develop a strategy for developing this capability. We have advised to develop capacity to respond to emerging issues, and the new program structure should move them in that direction. We have advised the Agency to partner more nationally and internationally and develop truly collaborative research efforts in these times of limited and shrinking resources, and they have been creative in doing so. Finally, we urged ORD to support and create incentives for their scientists to be more innovative, and they have created a highly successful internal program for Innovation Grants and have modified their internal rewards system to encourage the best scientific publications.

To summarize, we are supportive of these changes at ORD. More could be done, more is being done, but I believe, and our reports have indicated, that ORD is moving in the right direction.

Quality, usefulness and objectivity of EPA Science - the role of SAB. The SAB and presumably this Subcommittee share the goal and commitment to assist EPA in producing and using high-quality science to protect human health and the environment. The best available science is essential to sound decision-making, but is not the only aspect to sound policy decisions. What is "best available science"? While hard to provide a simple one-size-fits-all definition, generally it is scientific results, conclusions, and technical information that has been produced using proven methods, that has been peer-reviewed, where hypotheses are tested with objective and unbiased approaches, and that has support for its conclusions from other independent studies. EPA cannot possibly do all of the science needed by the Program Offices and Regional Offices. Some of this needed science is conducted within EPA, and some science is used from outside research to verify, supplement, and in general add to the collective body of knowledge used to inform a given decision.

The role of the SAB is to examine the scientific and technical knowledge that was synthesized within the Agency for a given issue, and provide advice as to whether this science was appropriate and adequate for its intended use. In SAB reviews of EPA science assessments, we consider whether the data, reports, and other resources used were peer-reviewed, and compared and contrasted appropriately. It is my understanding that EPA has clear guidance

regarding peer-review of its own scientific work, and for data quality and transparency⁴. For purposes of maximum transparency and quality assurance, we usually advise the Agency not to include reports that have not been peer-reviewed, or journal manuscripts in preparation or draft form but not yet published.

As a researcher who has received funding from EPA and many other agencies, I have found that EPA has very high standards for data quality and assurance.

Enhancing EPA Science. Finally, the letter from Chairman Harris requested that I comment on the capability of EPA to conduct and use the best available science to fulfill its mission. The Agency certainly has the *capability* given its excellent scientific enterprise. It is sorely short of resources to provide the *capacity* needed for all the science questions at the Agency, and yet there is no other agency where such environmentally focused and directed science is being done to fill the unique mission of protecting the public's health and the environment on which they depend. Investing in EPA science is a wise investment. That said, this capability would be improved by continuing to address scientific questions from an interdisciplinary approach, by partnering more creatively with others, by involving stakeholders in problem formulation, and integrating science across the Agency for the most effective decision making.

Thank you for the opportunity to speak to you today.

⁴ [Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency](#). EPA/260R-02-008.