

SAB Science Integration for Decision Making Fact-Finding Meeting
Office of the Science Advisor
Ronald Reagan Building, Washington, DC
January 21, 2010

Three members of the SAB Committee on Science Integration for Decision Making conducted two interviews with EPA's Office of the Science Advisor: Drs. Terry Daniel and Thomas Wallsten in person, and Dr. Thomas Theis by telephone. Dr. Vanessa Vu, Director of the SAB Staff Office, provided a brief introduction to the purpose of the interview and the Designated Federal Officer, Dr. Angela Nugent, took notes to develop a summary of the conversation. All interviewees were provided a copy of the committee's Preliminary Study Plan in advance.

Dr. Vu noted in each interview that the purpose of the interview was to help SAB Committee members learn about OSA's current and recent experience with science integration supporting EPA decision making so that the SAB can develop advice to support and/or strengthen Agency science integration efforts. Dr. Vu thanked participants for taking time for the interviews and Dr. Santhini Ramasamy for coordinating with the SAB Staff Office in planning the meeting.

Meeting with OSA Scientific Staff (1:00 p.m. - 2:00 p.m.) Participants:

Dr. Noha Gaber, Council on Regulatory Environmental Modeling Executive Director
Dr. Kathryn Gallagher, Risk Assessment Forum, Executive Director
Ms. Lisa Matthews, Chair of the EPA Group on Earth Observations (EPA GEO)
Dr. Santhini Ramasamy, Science Policy Council Staff
Dr. Neil Stiber, Science Policy Council Senior Staff
Mr. Michael Bender, Program Analyst Lead

OSA staff described their individual responsibilities for information sharing and other activities that integrate science across EPA. The Council for Regulatory Environmental Modeling (CREM) was formed in response to SAB recommendations regarding computational modeling. The CREM has focused on developing guidance to promote Agency-wide consistency and provide best practices in the development, evaluation and application of models. On January 21st, the day of the SAB meeting, the CREM was sponsoring a symposium on integrated modeling for large aquatic ecosystems, linking different aspects of environmental systems and anthropogenic systems by conducting multi-media and multi-disciplinary modeling to support policy analysis. The symposium developed from a 2008 CREM White Paper that focused on integrated modeling for integrated environmental decision making. The symposium provided an opportunity for modelers, program specialists, economists, and scientists to discuss how modeling tools could help integrate science for decision making. The CREM is preparing a response to a National Research Council report that focused on Models in Environmental Regulatory Decision Making. One of the recommendations from that report called for EPA to conduct retrospective analyses of how models perform and how they have informed decision making.

There are opportunities to enhance EPA's use of the CREM, especially in EPA regions. CREM staff are planning to build regional and program capacity for modeling through modeling seminars and workshops, web-based training for model developers and users, and formation of a national water quality modeling workgroup, which will use the new "Watershed Central" site that includes a Wiki.

If regions have questions about adapting an existing model to local issues or conditions, CREM staff relies on the Models Knowledge Base to help them identify model experts within or outside the Agency. The Models Knowledge Base must be continuously updated to provide reliable information. The Models Knowledge Base was designed to include case studies providing feedback on the use of models, but the model evaluation section of the database needs to be strengthened with applications for this feature to be useful.

Barriers to effective science integration in using the CREM and its tools include:

- Limited resources: only three people staff the CREM and the Models Knowledge Base
- Data maintenance for the CREM Knowledge Base - CREM workgroup members often respond "we'd like to provide you with information but we don't have the time".

Therefore, the process for including model information in the Models Knowledge Base should be better integrated with the model development and application work flow.

Collecting quality assurance project plans needs to be integrated into the CREM Models Knowledge Base. The CREM is currently undertaking an analysis on this.

Leadership responsibility for EPA's Risk Assessment Forum (RAF) rests with the Office of the Science Advisor. The Forum is a standing committee of senior EPA scientists established to promote Agency-wide consensus on difficult and controversial risk assessment issues and to ensure that this consensus is incorporated into appropriate Agency risk assessment guidance. Work products of the RAF are approved by EPA's Science Policy Council.

The Forum is exploring ways to communicate RAF guidance more effectively throughout EPA. It does not currently have mechanisms for evaluating the use or effectiveness of guidance generated by the Forum. The RAF provides the public with opportunities to comment on draft guidelines before they are issued in final form.

The Science Policy Council (SPC) serves as a mechanism for addressing EPA's many significant science policy issues that go beyond regional and program boundaries. It develops policies and guidance for implementation across EPA. One example is EPA's Peer Review Handbook, last updated in 2006. The document has been well received, but OSA's SPC staff is aware that there is a need for better training on the peer review process across EPA and a mechanism for following up on the effectiveness of Peer Review Policy implementation.

The EPA Group on Earth Observations (EPA GEO) works on innovative ways to apply environmental observations, monitoring data and measurements with modeling and technology to support and inform decision-making by EPA and its partners in the States, Local Governments and Tribes. Global Earth Observation System of Systems (GEOSS)/Advanced Monitoring Initiative (AMI) projects will improve monitoring by visibly applying the benefits of science

observational data and information to the needs of EPA Program Offices and Regions and other user communities.

The GEOSS/AMI program has called for pre-proposals for FY 2010 projects, focused on efforts that further the development of GEOSS, support the Administrator's priorities and the SPC's Science Priorities, and articulate its application to improve environmental decision-making. EPA GEO has increased Program Office and Regional participation and is working to make this data and information more useful to environmental decision-makers. The OSA staff supporting GEOSS is currently supplemented by three AAAS fellows.

OSA carefully manages operations of its grants, contracts, and projects so that there are no duplications. All projects have quality management plans and are closely linked to OSA's missions and goals.

Meeting with the Chief Scientist and Managers (2:00 p.m. - 3:00 p.m.) Participants:

Dr. Pai-Yei Whung, Chief Scientist to the Science Advisor
Dr. Mary E. Greene, Deputy Director
Dr. Gary Foley, Senior Policy Advisor

The Office of the Science Advisor was established in 2002 by the EPA Administrator to ensure the highest quality science is integrated into the Agency's policy-making process. The Science Advisor advises the EPA Administrator on science and technology issues related to Agency policies, procedures, and decisions; participates in the ADP process; and chairs the Science Policy Council. OSA Staff support the Science Advisor in his/her mission to serve as an honest broker for cross-Agency science, science policy, and technology issues. Although OSA does not make risk management decisions, it facilitates conversations and communications about the integration of science to support decision making across EPA. For example, the Chief Scientist co-chairs the Science Policy Council's Subcommittee on Science Priorities. The Subcommittee provides a forum for assembling and organizing the science priorities of the Program Offices and Regions. These conversations led to the creation of a Science Priorities document (approved as "draft final" in 2009 by the SPC), which is currently being revised to reflect the evolving priorities at EPA. OSA "houses" important cross-agency councils and forums (the CREM, SPC, RAF, Forum on Environmental Measurement, and GEO).

The SPC provides a forum for science integration discussions among EPA's senior career managers. The SPC meets four-to-five times per year and has an efficient and effective process for preparing these senior leaders to have substantive policy discussions and reach decisions on key issues. The SPC Steering Committee supports the SPC and provides a mechanism for senior technical experts to address science integration issues.

The SPC provides a vision for bringing the EPA community together to make progress on science integration priorities. It is difficult to assess the overall impact of SPC policies and decisions; enforcement is "not the job" of the SPC. The RAF is considering the importance of workshops and training to enhance the usefulness of RAF guidelines. Both organizations receive feedback from EPA clients and must consider their documents "living documents" and develop

mechanisms for managing and improving them. The key to integrating science for decision making so there is "one EPA" is to enhance communication and opportunities to network across the Agency. Enhanced communication and networking are needed to address today's environmental protection questions and to anticipate the science needed for future decision making.