



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

**OFFICE OF THE ADMINISTRATOR
SCIENCE ADVISORY BOARD**

March 26, 2010

EPA-SAB-10-005

The Honorable Lisa P. Jackson
Administrator
U.S. Environmental Protection Agency
1200 Pennsylvania Avenue, N.W.
Washington, D.C. 20460

Subject: Science Advisory Board Comments on the President's Requested FY 2011
Research Budget

Dear Administrator Jackson:

In recent years, the Science Advisory Board (SAB) has conducted two parallel sets of discussions on research with the Office of Research and Development (ORD): 1) ongoing discussion of strategic research directions and 2) reviews of the President's research budget requests for upcoming fiscal years. The SAB has now reviewed the President's FY 2011 research budget request within the context of these ongoing interactions with ORD on strategic research directions and assessed how well the requested budget will permit EPA to advance the goals set in its strategic research planning. Progress toward these goals will provide the science underpinnings for meeting your environmental protection priorities. The SAB plans to continue its discussions of strategic issues with ORD at an advisory meeting planned for April 2010, and we will provide you with an advisory letter on strategic research directions after that meeting.

The SAB notes that the President's budget request shows a modest increase in nominal dollars and a slight increase in constant dollars for ORD for FY 2011, as compared with ORD's FY 2010 enacted budget. Considering the importance of ORD's research agenda to national and global imperatives for responding to climate change and sustainability of water, air, and land resources in the face of growing population and energy demands, we believe that the budget request overall, with just a few exceptions, reflects appropriate choices about investments as well as difficult decisions about disinvestments in research. Given budget constraints across the federal government, we commend EPA for a thoughtful and prudent budget request that supports science as the foundation for EPA decision-making and that invests in research as a resource to address future environmental needs and issues.

Among the research investment choices, the SAB highlights as appropriate the planned increase for STAR grants and fellowships (+\$25.8 M). The STAR fellowships invest in the next generation of environmental scientists and STAR grants facilitate EPA's interaction with the wider scientific community and leverage expertise on key emerging issues. The SAB also highlights increases in air quality research as a "down payment" to develop and maintain a next generation monitoring network for ambient air pollutants (+\$3.4 M), an important and appropriate early step in research towards a multi-pollutant approach to air quality management. The SAB notes, however, that substantial funding will be required to fully develop this new approach.

The increased investment in hydraulic fracturing research (+\$2.5 M) is urgently needed to study the impact of these technologies on ground water quality protection and implications for drinking water safety. It is encouraging that while the actual increase is small, it represents a doubling of the budget for this important work. The SAB recommends that EPA pursue additional resources in the next budget cycle to ensure that this program becomes as robust as it needs to be. The investment in green water infrastructure research (+\$6.4 M) is needed to address green infrastructure practices relating to storm water management, drinking water and ambient water quality, and water quantity issues at multiple scales, including large watersheds. Finally, we view the planned investments in endocrine disruptors (+\$6.0 M) and computational toxicology (+\$1.8 M) as important for strengthening human health and ecological risk assessment. Along with these highlighted investments, the budget request generally reflects appropriate choices about sustaining programs and disinvesting in others (such as the mercury research program and some homeland security efforts), where research projects have reached a natural decision or ending point.

The SAB had four areas of concern in reviewing the FY 2011 research budget request in light of the Agency's strategic research needs. We draw your attention in the following paragraphs to the specific issues that deserve special notice and that merit reconsideration in the FY 2012 budget currently being planned. Research investment to protect endangered public health, sensitive ecosystem services, and vulnerable populations becomes even more important in difficult economic times when these resources may be most at risk. Investment in social, behavioral, and decision sciences across the ORD research portfolio is critically needed to help EPA develop and implement workable solutions to the major environmental challenges that you recognize as priorities for EPA.

The SAB believes that the relatively modest increase for ORD proposed for the clean air (+\$3.4 M) and global change (+\$1.2 M) research programs is not sufficient even though the President's budget request provides Science and Technology (S&T) Funds for EPA's Office of Air and Radiation to address climate change science and research. While the U.S. Global Change Research Program has historically complemented and leveraged EPA's past limited research investments in climate change, EPA will have a substantial need for new knowledge to support regulatory strategies, as a result of the Agency's Endangerment Finding on greenhouse gases. The types and number of scientific activities will need to increase to support EPA's central, critical role.

The requested budget for the Ecological Services Research Program shows a significant reduction in FTE (-13.9 FTE) as well as a reduction in funding (-\$1.5 M) for this program, which studies the direct and indirect contributions that ecosystems make to the well-being of human populations. The SAB has recently commended the Agency “for developing a research program that has the potential to be transformative for environmental decision making,” but noted that “the considerable potential of the program is unlikely to be achieved with its current level of funding and staff” (see SAB Report, *Consultation on EPA’s Implementation of the Ecosystem Services Research Program*, EPA-SAB-09-019). These proposed reductions are not in alignment with this advice. The success of the Ecological Services Research Program depends on sustaining the work of EPA’s highly trained scientists. The planned FY 2011 FTE cuts for a research area modestly funded at the outset are so significant as to threaten the future of the entire program. The Ecological Services Research Program is critical for understanding the ways in which policy and management choices affect the type, quality, and magnitude of the goods and services ecosystems provide to sustain human well-being. Furthermore, these cuts jeopardize EPA’s sustainability research program efforts.

Although environmental justice is identified as your priority, the SAB notes that ORD’s requested budget does not provide a broad capability for developing the science to support environmental justice programs and policies. Moreover, the requested budget indicates a planned reduction in funding for cumulative risk research (-\$1.1 M) and research on susceptible populations (-\$2.1 M), essential research for understanding environmental justice issues. A reduction in research characterizing drinking water risk (-5.4 FTEs) will also make it difficult for EPA to understand and address cumulative risk issues. Although the budget shows a planned increase in funding for the child health stressor study and ORD staff can point to planned activities involving cumulative risk, the budget does not demonstrate a sustained investment in this important area consistent with your emphasis on environmental justice and the call for increased attention to multi-chemical analysis by the National Research Council (*Science and Decisions*, 2009). When funding for major priorities depends on unstable, episodic funding, research suffers.

As mentioned above, the SAB believes that investment in social, behavioral, and decision sciences across the ORD research portfolio is critically needed. The SAB has repeatedly noted the serious lack of Agency research activity and staff expertise in the area of social, behavioral, and decision sciences. The President’s FY 2011 budget does not include investment in these areas again this year. The SAB believes that EPA must invest in research in these areas to help fashion solutions to environmental problems. Effective design and implementation of policies and programs and effective communication of them require an understanding of human perceptions, values, and behavior. ORD requires a sufficient intramural cadre of behavioral, social, and decision scientists to provide this understanding, to conduct relevant social science research, and to guide the Agency in forming appropriate partnerships and collaborations in this area. The SAB welcomes additional dialogue with the Agency on this issue.

The SAB is pleased to have again reviewed the EPA research budget and looks forward to working with you to strengthen the Agency's vital research base and addressing your priorities. We look forward to your response to this review and to continuing our interactions with EPA to develop future advice on the Agency's science program.

Sincerely,

/Signed/

Dr. Deborah L. Swackhamer
Chair
Science Advisory Board

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