



BOARD OF SCIENTIFIC COUNSELORS

Office of Research and Development Update on BOSC Activities

presented to

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Science Advisory Board
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Presentation by
Dr. Martin Philbert, BOSC Member



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BOSC Mission

- Evaluating science and engineering research, programs and plans, laboratories, and research management practices of ORD and recommending actions to improve their quality and/or strengthen their relevance to EPA's mission.
- Reviewing ORD's program development and progress, research planning process, and research program balance, including implementation of the ORD Strategic Plan.
- Providing advice on human resources planning, such as scientist career development and rotational assignment programs, and the appropriate scope and design of training programs for environmental research professionals.

BOSC Mission cont'd.

- Evaluating and providing advice concerning the utilization of peer review within ORD to sustain and enhance the quality of science in EPA.
- Providing peer review, including evaluation of ORD's peer review policies, and reviewing ORD Offices, National Laboratories and Centers, and research plans and products.

BOSC Members & Areas of Expertise

Gary Saylor Ph.D. Chair <i>University of Tennessee</i>	Biodegradation of Organic Pollutants; Environmental Molecular Diagnostics; Genetic Engineering; Eco/Toxicological Impact of Contaminants on Microbial Communities
Susan Cozzens Ph.D. <i>Georgia Institute of Tech.</i>	Environmental Program Evaluation
Ken Demerjian Ph.D. <i>State Univ. of New York</i>	Physical and Atmospheric Chemistry, Uncertainty Analysis
Henry Falk, MD, MPH. <i>CDC</i>	Health Effects of Environmental Hazards; Toxic Substances
Charles Haas, Ph.D. <i>Drexel University</i>	Civil and Environmental Engineering Drinking Water Treatment; Bioterrorism; Risk Assessment; Hazardous and Industrial Waste Treatment
Ken Olden, Ph.D., Sc.D. <i>City Univ. of New York</i>	Environmental Health (Integrating Environment and Human Health)
Dennis Paustenbach Ph.D. <i>ChemRisk, Inc.</i>	Occupational Health; Industrial and Environmental Toxicology; Ecological and Human Health Risk Assessment
Martin Philbert Ph.D. <i>University of Michigan</i>	Biochemistry, Neurochemistry; Experimental Neuropathology; Toxicological Pathology
Barry Ryan, Ph.D. <i>Emory University</i>	Environmental and Occupational Health, Exposure Assessment; Environmental, Computational, and Physical Chemistry
Katherine von Stackelberg Ph.D., <i>Harvard Univ.</i>	Decision Science (Risk Assessment and Quantitative Uncertainty Analysis; Value of Information Analyses; Ecosystem Services; Developing Risk-Based Modeling Tools)
John Tharakan Ph.D. <i>Howard University</i>	Environmental Engineering (Hazardous Waste Management/Resource Conservation and Recovery Act and Superfund Regulations)
Marie Zhuikov <i>Comm. Consultant</i>	Communication (Science Communication/Communicating Research Results)

Major BOSC Accomplishments in 2010

- Finished full program reviews started in 2009 for:
 - Clean Air Research Program
 - Human Health Research Program
- Reviewed and developed response to ORD reports on the progress of implementing BOSC recommendations since the last review, and future plans for:
 - Safe Pesticides/Safe Products Research Program
 - Human Health Risk Assessment Program
 - Computational Toxicology Research Program

Major BOSC Accomplishments in 2010 cont'd

- Developed the Decision Analysis Report
 - DA workshop proceedings (joint ORD & BOSC workshop held in 2009)
 - Recommendations for implementing DA techniques in ORD
- Reviewed and developed report/response to the ORD Nanomaterial Case Studies Workshop Report
 - Focused on method used to prioritize research (workshop held in 2009)

Future BOSC Activities

- Informatics/Bioinformatics and Data Mining
 - BOSC is trying to understand use of informatics and data mining techniques in ORD
 - Subject area of potential BOSC report with recommendations
- Program Evaluation Techniques
 - Major BOSC role is evaluating the various ORD research programs
 - BOSC has periodically evaluated the techniques it uses
 - BOSC will take up this effort again in 2011
- Program reviews are to be determined pending reorientation of ORD and the development of the Integrated Transdisciplinary Research (ITR) Areas

Science and Research Issues Identified by BOSC

- Many BOSC recommendations are specific to the research program being evaluated.
- ORD wide recommendations were made in the BOSC's Decision Analysis Report to improve ORD's strategic planning, maximize research efficiency, and improve prioritization and decision-making processes.

Opportunities for Synergy/Partnership with SAB

- Subject Areas
 - Informatics/Bioinformatics and Data Mining: State of Science and Applications for Use in ORD
 - Research Program Performance Evaluation Techniques
 - Other(s) TBD

- End Product could be a joint SAB/BOSC Report with Recommendations