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BOARD OF SCIENTIFIC COUNSELORS (BOSC)
EXECUTIVE COMMITTEE

Conference Call Summary
Thursday, April 1, 2010
11:00 a.m. – 1:00 p.m. Eastern Time

Welcome and Introductions

Dr. Gary Sayler, University of Tennessee, BOSC Executive Committee Chair

Dr. Gary Sayler, Chair of the Board of Scientific Counselors (BOSC) Executive Committee, welcomed the Committee members to the teleconference and took roll. A list of the Executive Committee members and others who participated in the call is attached.

Review of February Meeting Minutes

Dr. Sayler noted that a number of items were distributed prior to the conference call. These items were the agenda for the call, the draft summary of the February 2010 Executive Committee meeting, the ORD response to the Clean Air Program Review Report, and the PowerPoint presentation of the ORD response to that report. He confirmed that the members had received these materials and then asked if the BOSC members had any comments on the draft minutes of the February 4, 2010, meeting. When there were no comments, Dr. Sayler called for a motion to approve the February meeting minutes. Dr. Ken Demerjian made a motion to approve the minutes, and Dr. Barry Ryan seconded the motion. The February meeting minutes were approved unanimously by the BOSC.

Overview of Agenda

Dr. Sayler reviewed the agenda for the call. First, Mr. Greg Susanke will provide the remarks of the Designated Federal Officer (DFO), Dr. Dan Costa will present the ORD response to the BOSC Clean Air Program Review Report, and Dr. Katherine von Stackelberg will lead the discussion of the Decision Analysis Workgroup Report. There will be time for public comment at 12:40 p.m., followed by a discussion of future business. Dr. Sayler then asked if there were any questions concerning the agenda and there were none.

BOSC Designated Federal Officer (DFO) Remarks

Mr. Greg Susanke, U.S Environmental Protection Agency (EPA)/Office of Research and Development (ORD), DFO

Mr. Greg Susanke, DFO for the BOSC Executive Committee, thanked the BOSC members for their attendance and reviewed the Federal Advisory Committee Act (FACA) procedures that are required for all BOSC meetings. In accordance with FACA, all BOSC meetings and conference calls are open to the public, and as the DFO, Mr. Susanke ensures that all FACA requirements are met. A notice for this conference call was published in the *Federal Register* on March 15 in accordance with FACA, and an electronic docket was established. The docket is available at http://www.regulations.gov, and the docket number is EPA-HQ-ORD-2010-0202; the agenda and other materials are posted there.

Per FACA requirements, a record of Board deliberations must be made available to the public. Therefore, notes of the meeting are being taken by a contractor, Beverly Campbell of The Scientific Consulting Group, Inc., who will prepare a summary of the conference call. Following review of the summary by the Executive Committee members and certification by the Chair, it will be made available to the public on the BOSC Web Site.

As the DFO, Mr. Susanke has worked with EPA officials to ensure that appropriate ethics regulations have been satisfied. Executive Committee members must inform him if they discover a potential for conflict of interest that would affect their impartiality regarding any of the topics under discussion during the call. There were several requests for the agenda and materials but there were no requests for public comment prior to the call; nevertheless, there is time set aside on the agenda for public comment at 12:40 p.m. Mr. Susanke asked that public comments be limited to 3 minutes each. He then asked if anyone else had joined the call, and Dr. Dan Costa and Ms. Laurel Schultz from EPA's Office of Research and Development (ORD) identified themselves.

ORD Response to BOSC Clean Air Program Review Report

Dr. Dan Costa, National Program Director (NPD) for Clean Air Research

Dr. Costa explained that the Executive Committee members should have received two files related to the ORD response to the BOSC's Clean Air Program Review Report. The first is the official response, which came from Dr. Kevin Teichman, Deputy Administrator for Science, and the second is the PowerPoint presentation of the ORD response for today's call.

Dr. Costa thanked the BOSC for conducting the review of the Clean Air Research Program, which took place in May/June 2009. The review process included two conference calls; the first call covered some administrative and general information, and the second call provided program and session overviews with contextual discussions as well as information on the program budget, vision, etc. The two calls were followed by a 2 ½-day face-to-face meeting in Research Triangle Park, North Carolina. Dr. Demerjian chaired the Subcommittee that conducted the review. Dr. Costa stated that the review was very useful for the program because preparing for the review required the principal investigators (PIs) to coordinate and communicate, which promotes more integration among the various laboratories and centers working on the Clean Air Program.

Dr. Costa stated that the review included three sessions that focused on: (1) health and exposure, (2) air quality management, and (3) source-to-health outcome: multipollutant approach. The face-to-face meeting included short introductory talks, and then poster presentations followed by fruitful discussions and commentary from the BOSC Subcommittee. Dr. Costa thought the review was a highly worthwhile investment of Clean Air Research Program time and the BOSC's input will be used to strengthen and enhance the program. Dr. Costa said he was very pleased that the program received a score of "exceeds expectations."

One of the items provided to the Subcommittee for the review was the 2008 Clean Air Research Multi-Year Plan (MYP). This MYP was revised significantly from the previous plan. For example, the 2008 MYP integrated the Particulate Matter, Ozone, and Air Toxics research (previously separate) into one plan that addressed Clean Air Research. The integration of these three separate programs helped with coordinating and maximizing the overall efficiency of Clean Air Research. The 2008 MYP emphasizes program integration and leveraging as well as multidisciplinary science approaches. It also stresses the development of a multipollutant research theme. Dr. Costa recognized that the program has a mandate to support research for National Ambient Air Quality Standards (NAAQS) and Hazardous Air Pollutants (HAPs), which are focused on individual pollutants, but it would be remiss for the program to ignore multipollutant approaches. The 2008 MYP also emphasizes the communication of results to the scientific community, the program offices and regions, and the public.

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The BOSC review was organized around the program's long-term goals (LTGs). LTG 1, the traditional goal, is to reduce uncertainty in the science that supports standard setting and air quality management decisions. This research informs regulatory decision-making (NAAQS, air toxics), and supports the implementation of regulations with tools, methods, and models and provides information to the Office of Air and Radiation (OAR), regions, states, and tribes. LTG 2, which represents the program's foray into the multipollutant area, is to reduce uncertainties in linking health and environmental outcomes to air pollution sources. This research is identifying source-to-health linkages, with initial emphasis on "near roadway" impacts. A study in Las Vegas was recently completed and a new study in Detroit will begin in May 2010. Included in LTG 2 is demonstration of the effectiveness of the science and its dependent policy decisions (accountability). This LTG also looks to the future with air quality-climate interactions. The Clean Air Research Program is working with the Global Change Research Program to plan and implement this research.

Through 2011, the basic themes of the program are unchanged. The program conducts and communicates air pollution science for stakeholder use (addressing NAAQS and air toxics). The multipollutant program will evolve from the source-to-health paradigm. Dr. Costa noted that the research is integrated across ORD laboratories/centers and scientific disciplines, and the program is seeking opportunities to leverage both public and private sector resources. He noted that although the basic themes are the same as in the 2008 MYP, mid-course corrections in the direction of the research will be made as needed.

Dr. Sayler asked how the multipollutant approach is being received by the states and regions. Does it require more communication with them? Dr. Costa replied that the approach is being received quite well by the air science community. At the recent American Association for Aerosol Research (AAAR) meeting in San Diego, which included atmospheric scientists, health and exposure researchers, epidemiologists, and others, most were thinking of air pollution as a multipollutant challenge. There also was discussion about the need for community-based assessments (local releases, local impacts).
Dr. Costa stated that although the multipollutant approach is well supported, it is not yet clear how ORD should tackle it. Dr. Demerjian commented that the health community is now engaged in figuring out how to assess effects of multipollutants. Dr. Costa added that they are looking at interactions in a multipollutant context rather than cumulative exposures.

The prototype source-to-health/multipollutant effort involves near-roadway research. A stakeholder meeting was held in 2006 to discuss issues related to community exposure and near-roadway exposure. There was seed money in 2006 to conduct a pilot study in Raleigh, North Carolina. In conjunction with the Federal Highway Administration, the program also conducted a study in Las Vegas. That study has been completed and a new study in Detroit, working with the University of Michigan, is being initiated. This new study focuses on asthma in children and looks at the source-to-health outcome in a more coordinated way. A workshop is planned for June 2010 in Raleigh to identify unmet needs of stakeholders. This workshop will complete the group of studies on near-roadway exposures and impacts.

Dr. Costa noted that the BOSC's recommendations for the program are doable. He then went through the general recommendations and the program's responses.

Recommendation: Develop a working definition for the term "multipollutant approach."
ORD Response: A framework is being developed and a joint workshop is being planned with the Office of Air Quality Planning and Standards (OAQPS) for late 2010/early 2011.

Recommendation: Strengthen Federal Reference Method (FRM)/Federal Equivalent Methods (FEM) methods development.
ORD Response: The program is actively engaging in discussions of the methods needs with OAQPS. Additional resources are being applied as allowed for specific issues.

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Recommendation: Revise the procedures for designation of an approved instrument method.
ORD Response: The current FRM/FEM procedures can accommodate the introduction and development of new technologies.

Recommendation: Review the rationale for the current planning and resource allocation approach and consider a more balanced approach for resource management.
ORD Response: ORD believes that its current matrix management structure offers a balanced and effective approach for the management of the resources. ORD will continue to seek ways to improve its ability to produce quality science that is relevant to EPA's mission and supports effective decision-making.

Recommendation: Evaluate the judicious use of satellite data with existing ground-based measurements.
ORD Response: Pilot work is ongoing internally and through the Science To Achieve Results (STAR) program.

Recommendation: Coordinate ammonia and PM emission studies with current industry-funded research on concentrated animal feeding operations sources at various universities.
ORD Response: The program will assess opportunities as they arise and resources allow in the context of overall priorities.

The responses to the recommendations for LTG 1 are presented below.

Recommendation: Community Multiscale Air Quality (CMAQ) and other air quality models should continue to be a high priority for sequential refinement and development.
ORD Response: The program plans continued refinement of the models to address critical uncertainties.

Recommendation: Combined use of modeling tools such as CMAQ and inverse-CMAQ modeling, and ambient and satellite measurements to improve estimates of ammonia and elemental carbon emissions should be applied to other pollutants/sources and other areas.
ORD Response: The development and application of models and tools are priority activities and will continue as the science evolves.

Recommendation: Leverage the selection of emerging monitoring technologies and methods by selecting the ones that have the greatest potential for widespread use.
ORD Response: The program will continue to integrate emerging methods/measurement techniques into its field studies, and invest in methods research.

Recommendation: The potential health effects of coarse particles in urban and rural environments should be examined.
ORD Response: In 2008, ORD funded five grants to examine the health effects associated with exposure to coarse PM.

The responses to the recommendations for LTG 2 are presented below.

Recommendation: Formally define the aspects of "multipollutant" that are of highest priority and will be pursued in the near term and long term.
ORD Response: The program plans to articulate a formal multipollutant research strategy that would lay out a blue print for research in this area for the next 5-7 years.

Recommendation: Consider developing a research framework to explore multipollutant exposures as they relate to the copollutant complex of PM components, ozone, NO_2, and air toxics.
ORD Response: ORD already has initiated research in this area.

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Recommendation: More basic research on pollutant mixture exposure needs to be performed to support the design of multipollutant-based emission regulations and ambient standards.
ORD Response: The program intends to focus intramural research and the Air Centers on understanding the origins of multipollutant atmospheres and their impact on human health effects.

Recommendation: Continue to survey clients and stakeholders on perceptions of and satisfaction with ORD's role in the source-to-health outcomes process.
ORD Response: The program plans to conduct client surveys every 2 years, beginning in 2011. Dr. Costa added that he spends about 4 hours/week on the telephone talking to the clients and stakeholders to get less formal feedback from them.

Dr. Costa presented some program plans and expectations for 2010 and 2011. A year-long celebration in 2010, called *Air Science 40*, is telling the story of how EPA's research has made a difference over the past 4 decades to understanding key air pollution issues. The anniversary looks to past accomplishments and focuses on what is being done now to address complex new challenges of air quality management, notably the multitude of pollutants in the air and the interactions between air quality and climate change. The *Air Science 40* celebration will include a seminar series in Washington, DC, Congressional briefings, and regional presentations.

The Clean Air Research Program will proceed with the development of a multipollutant program. A workshop, which will be coordinated with OAR, is planned for late 2010. There will be a shift in the resource ratio between LTG 1 and LTG 2. The current LTG 1: LTG 2 ratio is 60:40 but it will shift to 40:60 by 2012.

The near-roadway study in Detroit will start in May 2010, and a research plan will be developed for the Raleigh near-roadway research workshop planned for late 2011. The program also plans to make progress on the carbon and acrolein methods. The Air Research Centers will be awarded in late 2010.

A framework for air accountability will be developed. The framework will build upon the platform of pilot projects. Input on the experiences of others will be obtained from various sources, including OAR collaborators, National Center for Environmental Research (NCER) Human Health grants, the Health Effects Institute (HEI), and the NARSTO report. The program also will work closely with HEI and possibly co-fund some research.

The program plans to fully coordinate access of monitoring data by the health community. There is ongoing collaboration with OAR concerning data access, transparent monitor tracking, method validation (EC), and daily speciation. There will be an emphasis on methods development for monitoring. The decades old FRMs/FEMs/ATs will be updated and the latest technology will be brought to the point of field application in the real world. The program will focus on continuous methods (especially PM speciation), and will invest in novel approaches ("chip technologies"). There are plans to develop a "one atmosphere" exposure facility (unique to ORD). The program will coordinate across the laboratories/ centers and programs (similar to the approach used for biofuels). The dynamometer facility, air chemistry, and toxicology capabilities will be tied in to address emissions, chemistry, risks, and interventions.

Dr. Costa presented a diagram that depicted "A Vision to the Future of Climate and Air Quality Management." The program plans to move forward with this integrated concept. He mentioned that the program had looked at forest fire emissions, noting that fires are a downstream aspect of climate change. Modeling showed a "climate penalty" to health that is associated with PM and ozone from the fires. Implementing this concept will require coordination unlike anything in the past. Understanding the flex points can lead to innovation in mitigation and adaptation. Dr. Costa mentioned that Paul Anastas, the Assistant Administrator (AA) for ORD, is emphasizing innovative solutions to solve environmental problems rather than just conducting research to understand them.

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In closing his presentation, Dr. Costa noted that the STAR Global Program results that integrate emissions, climate change, air quality, and human health, adding that this STAR research is at the cross-roads for multipollutant science and the air-climate concept.

Dr. Sayler thanked Dr. Costa for his presentation and asked Dr. Demerjian if he had any questions or comments about the response. Dr. Demerjian thanked Dr. Costa and the program staff for their efforts in preparing for the review. He mentioned that the roadmap to the review materials was very effective in communicating information about the program to the BOSC Subcommittee. The Executive Committee has discussed the roadmap and has recommended that it be provided for future reviews. Dr. Demerjian thought the presentation of the response was excellent and he expressed his hope that the review will help enhance the Clean Air Research Program. Dr. Costa thanked Dr. Demerjian and said he would pass along the comment about the roadmap to the other NPDs. He added that preparing for this review pushed the staff to coordinate and talk with each other and to take a new look at the MYP. The review also brought the program to the attention of the Agency's senior managers.

Dr. Sayler commented that the Clean Air Research Program is a good model for moving toward the multipollutant approach. Other programs could learn from this program's experiences. He then asked if there was a structured way that the needs of the clients and stakeholders are brought forward to the program. Is there a formal mechanism for clients and stakeholders to bring them to the program? Dr. Costa responded that he is fortunate to be co-located with OAQPS, one of the program's primary stakeholders. He interacts with OAQPS staff all on a regular basis; he just has to walk down the hall to talk to them. Dr. Costa also has frequent meetings with the staff working on NAAQS. In addition, he participates in regular calls of the Research Coordination Team (RCT), which includes a number of stakeholders. He is in constant dialog with stakeholders, so issues are communicated informally on a regular basis. Some issues are communicated at a higher level in a more formal manner, however, such as through face-to-face meetings between the AA for ORD and the AA for OAR. Dr. Costa added that he communicates frequently with Carl Mazza, who is the OAQPS liaison in Washington, DC.

Dr. Sayler thanked Dr. Costa again for his clear presentation for responding to the BOSC's questions. Dr. Costa then thanked the BOSC for reviewing the program.

Decision Analysis Workgroup Report

Dr. Katherine von Stackelberg, Workgroup Chair, BOSC Executive Committee

Dr. von Stackelberg provided an update on the Decision Analysis Workgroup Report. She reminded the Executive Committee members that the report was discussed at the February meeting and some changes were suggested by the Executive Committee. Specifically, the Executive Committee suggested strengthening the language and adding some examples that ORD might consider for a pilot to apply specific decision analysis methods. The Workgroup helped prepare some examples and those have been added to the report. She noted that there is one example that needs a little work before the report is ready for submission to ORD. She will work with Dr. Paustenbach to complete this example. Dr. von Stackelberg asked if the other members of the Workgroup had any comments.

Dr. Paustenbach thought the next step would be for the Executive Committee to recommend that ORD implement a pilot from one of the examples in the report. He suggested the Integrated Risk Information System (IRIS) example because IRIS is used to make many decisions. Dr. von Stackelberg said she was not sure if Dr. Paustenbach meant to use decision analysis tools at the individual chemical level or for prioritizing the chemicals for IRIS assessments. She mentioned that another example added to the report focused on fracking but EPA just announced a large research effort on this topic so this example probably should be eliminated. Dr. Haas said that he had suggested the fracking example and he agreed that it probably is moot now. Dr. von Stackelberg asked if the IRIS example was to be applied for an individual chemical. Dr. Paustenbach replied that he thought it should be at the chemical level.

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Dr. Paustenbach thought the Workgoup report was well written and thorough. Would ORD use the report and the referenced documents to apply decision analysis methods for the pilot? Dr. von Stackelberg responded that ORD will have to figure out how to implement decision analysis methods for the pilot. Someone in the Agency has to take the initiative and launch the pilot. EPA has some very qualified staff members who can help with this. She suggested that the Workgroup could present the report to the AA for ORD and discuss it with him.

Dr. Sayler stated that the Executive Committee needs to decide how to move forward and submit the report to ORD. Scientific decision-making is under review by the Science Advisory Board (SAB) so many in EPA are looking at tools to improve the decision-making process. Because of the efforts of this Workgroup, the BOSC is on the leading edge of this issue and the report is very timely.

Dr. von Stackelberg thought the Executive Committee should decide how to move forward before the meeting in July. She will revise the report as soon as possible in an effort to get this resolved in early May.

Dr. Philbert stated that the report was well done, and it brought together some difficult elements. His only concern was that he did not want the report to be too prescriptive on how to implement decision analysis methods. He thought the wording in the current version of the report was appropriate without being too prescriptive. He believes that the report can be wrapped up in the next few weeks.

Mr. Susanke thought it was appropriate to include the IRIS example for a pilot. He cautioned the Workgroup members against discussing the revisions as a group. Dr. von Stackelberg clarified that the report will include four to five examples for the pilot as well as some indication of the areas that would benefit from the use of decision analysis methods. The IRIS example still has to be fleshed out and she will work with Dr. Paustenbach to do that.

Dr. Sayler reminded the Workgroup that they could not discuss the report as a group unless the meeting is announced in the Federal Register and open to the public. Therefore, he asked that the Workgroup members send their comments on the revised report to Mr. Susanke, who will be responsible for sending the comments to Dr. von Stackelberg. Once the report is revised and circulated to the Executive Committee members, those members who are not on the Workgroup will review and comment on the report. Those comments also should be sent to Mr. Susanke with a copy to Dr. Sayler. Mr. Susanke will send the comments to Dr. von Stackelberg and she will finalize the report for submission to ORD. Dr. Sayler then will submit the report to ORD.

Future Business

Dr. Gary Sayler, BOSC Executive Committee Chair

The next face-to-face BOSC Executive Committee meeting will be held July 12-13, 2010, in Corvallis, Oregon. The agenda for the meeting is being prepared and needs more work before it can be distributed to the Executive Committee members. One issue that needs to be discussed today is the presentation on informatics and datamining. Dr. Sayler had hoped to identify a single speaker to present on both topics and he asked the members for some suggestions. Dr. Haas said he thinks it will require two separate speakers—one to address information management (informatics) and the other to address datamining. Dr. Philbert agreed, noting that although the topics are linked, most individuals specialize in one area or the other. He supported the suggestion of having two speakers. Dr. Sayler asked Drs. Philbert and Haas for some suggestions for these speakers. Dr. Sayler said he had a few individuals in mind but would like to get input from the Executive Committee. He mentioned that he needs to act quickly to get them on the agenda for the July meeting. Dr. Haas agreed to contact the Dean to get some suggestions. He will send those suggestions to Dr. Sayler by April 9.

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Mr. Susanke asked the BOSC members what they planned to do as a follow-up to these presentations in Corvallis. What is the next step on this topic that will benefit the Agency? Dr. Sayler replied that this effort could lead to the formation of a workgroup on this topic. The workgroup would identify how to assist ORD in this area. Mr. Susanke offered to arrange for an ORD representative to present to the BOSC what ORD has been doing in the area of informatics and datamining. The agenda for the July meeting is too full to accommodate this presentation but perhaps it could be made at the next meeting. Dr. Sayler responded that the Executive Committee would welcome any background information ORD might have on what the Agency is doing in this area. It would be beneficial to receive any materials prior to the July meeting if possible.

Dr. Duke said that he can provide some names of possible speakers on these topics for the July meeting. He mentioned that the Ecological Society of America (ESA) held a workshop on data sharing and the impact of data sharing and informatics on environmental protection. He agreed to send the names of potential speakers to Dr. Sayler and Mr. Susanke.

Dr. Sayler indicated that there are other agencies (e.g., USDA, USGS) that are using informatics and datamining tools. Perhaps EPA can learn from their experiences.

Dr. Sayler asked if there were any additional future business topics for discussion. When there were none, Mr. Susanke mentioned that there will be some new members at the next face-to-face meeting. Dr. Sayler thanked Dr. Duke for his service on the BOSC and mentioned that he might be called upon to serve on a future subcommittee. Dr. Duke said he would be glad to assist the BOSC, particularly with respect to the informatics area.

Public Comment
Dr. Gary Sayler, BOSC Executive Committee Chair

Dr. Sayler called for public comment at 12:30 p.m. No comments were offered.

Adjourn
Dr. Gary Sayler, BOSC Executive Committee Chair

Dr. Sayler said that he looked forward to seeing everyone at the next meeting in Corvallis and then adjourned the meeting at 12:31 p.m.

Action Items

- ✧ Dr. Paustenbach will assist Dr. von Stackelberg in fleshing out the IRIS example for the Decision Analysis Workgroup Report.

- ✧ Drs. Paustenbach, Philbert, and Haas will review the revised draft of the Decision Analysis Workgroup report and send their comments to Mr. Susanke and Dr. Sayler. Mr. Susanke will send these comments to Dr. von Stackelberg.

- ✧ Dr. von Stackelberg will finalize the Decision Analysis Workgroup Report and send it to Mr. Susanke who will distribute it to the Executive Committee for review and comment. The Executive Committee members will send their comments to Mr. Susanke and Dr. Sayler. Mr. Susanke will forward the comments to Dr. von Stackelberg who will finalize the report as needed. Dr. Sayler will submit the final report to ORD.

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- Drs. Haas and Duke will submit names of potential speakers on informatics and datamining to Dr. Sayler by April 9, 2010. Other Executive Committee members who have suggestions for speakers also should submit those names to Dr. Sayler by April 9.

- Dr. Sayler will work with Mr. Susanke to complete the agenda for the July Executive Committee meeting.

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PARTICIPANTS LIST

Executive Committee Members

Gary S. Sayler, Ph.D., Chair
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Center for Environmental Biotechnology
University of Tennessee

Kenneth L. Demerjian, Ph.D.
Atmospheric Sciences Research Center
State University of New York

Clifford S. Duke, Ph.D.
Director of Science Programs
The Ecological Society of America

Henry Falk, M.D., M.P.H. (not present)
Director, Coordinating Center for Environmental Health and Injury Prevention
Centers for Disease Control and Prevention

John P. Giesy, Ph.D. (not present)
Professor and Canada Research Chair in Environmental Toxicology
Department of Veterinary Biomedical Sciences
University of Saskatchewan

Charles N. Haas, Ph.D.
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EXECUTIVE COMMITTEE MEETING
AGENDA
Thursday, April 1, 2010
11:00 a.m. – 1:00 p.m. Eastern Time

CONFERENCE CALL
Participation by Teleconference Only

Thursday, April 1, 2010

11:00 a.m. – 11:10 a.m.	Welcome and Introductions - Review of February Meeting Minutes - Overview of Agenda	Dr. Gary S. Sayler, Chair, Executive Committee
11:10 a.m. – 11:15 a.m.	BOSC DFO Remarks	Mr. Greg Susanke, Designated Federal Officer, Office of Research and Development
11:15 a.m. – 12:15 p.m.	ORD Response to Clean Air Report	Dr. Dan Costa, National Program Director, Clean Air Research Program
12:15 p.m. – 12:40 p.m.	Decision Analysis Workgroup Report	Dr. Katherine von Stackelberg, Workgroup Chair, Executive Committee
12:40 p.m. – 12:50 p.m.	Public Comment	
12:50 a.m. – 1:00 p.m.	Future Business	Dr. Gary Sayler, Chair, Executive Committee
1:00 p.m.	Adjourn	

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