

**U.S. Environmental Protection Agency
Office of Research and Development**

**BOARD OF SCIENTIFIC COUNSELORS
EXECUTIVE COMMITTEE MEETING**

**Washington, DC
January 9-10, 2003**

Thursday, January 9, 2003

Welcome and Introductions

Dr. Jerry Schnoor (University of Iowa), Chair of the Board of Scientific Counselors (BOSC) called the meeting to order at 1:00 p.m. He welcomed everyone to the January meeting and introduced, Dr. Anna Harding (Oregon State University), who was attending her first BOSC meeting. Dr. Schnoor then asked Dr. Paul Gilman (AA/ORD) to provide the ORD update.

ORD Update

Homeland Security Research Center. Dr. Gilman started off by talking about the new role that ORD will have in homeland security initiatives. He mentioned that Tim Oppelt (ORD/NHSRC), who has agreed to serve as the Director of ORD's new Homeland Security Research Center, will give a much more detailed presentation of the homeland security research efforts later in the day. Dr. Gilman stated that ORD has set up a unique program of research that focuses on activities that have not, for the most part, been done by other organizations. An interesting aspect of the program is that it is designed to exist for 3 years. Therefore, staff will not be permanently assigned to homeland security research; rather, individuals will be assigned 3-year details to the new Center and will return to their previous jobs after the detail. Dr. Gilman emphasized that ORD will be using and building on the work accomplished by many other agencies and organizations. ORD does not want to "re-invent the wheel." If the technology or information exists, ORD will find it and determine its utility for EPA's purposes. He reported that ORD's Homeland Security Research Center opened in September 2002, and the first products are expected to be out in March 2003.

Role of Science at EPA. Dr. Gilman stated that he serves as the Science Advisor to the Agency, as well as the AA/ORD. He noted that Governor Whitman called for an examination of the role of science in EPA, which led to a 45-day study that indicated EPA should use science earlier in the regulatory process and more often throughout the process. Dr. Gilman said that ORD involvement in the regulatory process has increased, but he was not certain how to measure the impact of this increased ORD involvement. For example, how many regulations have been improved by using science earlier and more often in the regulatory process? How can this be measured? He did not think that the number of ORD person years devoted to the regulatory process was an accurate measure of the impact.

Peer Review. Another important area for ORD is peer review. The Agency has produced a guidance document for conducting peer reviews and for deciding which work products require peer review. Representative Connie Morella inquired about EPA's peer-review process and was told that there is little

need to improve the Agency's current process. Dr. Gilman stated that there is no lack of peer review at EPA, but noted that ORD will continue to seek ways to improve the process.

Cross-Agency Groups. The Risk Assessment Forum is a cross-Agency group that has developed risk assessment techniques and guidance for conducting risk assessments. The Forum has been successful in making the approach to risk assessment across the Agency uniform and appropriate. Dr. Gilman said that he has been trying to revitalize a group that is parallel to the Risk Assessment Forum, the Committee on Regulatory Environmental Modeling (CREM), which is headed by Dr. Gary Foley (ORD/NERL). The objective of CREM is to bring to computer modeling the same cross-Agency approach used by the Risk Assessment Forum. CREM is evaluating and discussing models to bring transparency to the use of computer modeling and uniformity of modeling across the Agency.

At this month's Science Council meeting, creation of a third group focused on environmental measurements and monitoring will be considered. This group will evaluate methods and measurement protocols to find ways to improve their effectiveness, determine how to validate methods, develop and conduct training in methods, and stay abreast of how methods are performing and being used. Dr. Gilman stressed the importance of learning why a particular group deviates from a method. When, for example, two Regions measure asbestos differently, this raises questions among the public. Dr. Gilman reported that both the water and air programs appear to be supportive of the creation of this new group. They recognize the need for cross-Agency discussions of measurement and monitoring issues. A major goal of the group will be to explain or reduce inconsistencies between programs and across Regions. Dr. Gilman thought that greater cross-Agency and Regional discussions of measurement protocols and monitoring, will shore up the foundations of EPA's regulatory decisions.

Post-Doctoral Program. ORD's post-doctoral program has been in existence for 3 years, and there currently are approximately 150 post-docs in ORD's Laboratories and Centers. Post-docs bring new techniques and approaches to ORD research. The post-doc program also has been an excellent source of applicants for intramural program positions, and EPA has begun to hire a number of individuals from that program. An added benefit is that the post-doc program has improved the diversity in the Agency's research staff. Approximately 70% of those hired from the post-doc program are women and minorities, and about 50% of the post-doc applicants are women and minorities (only 5% of life science degrees in the United States are awarded to minorities). Dr. Gilman would like to figure out why this program has been so successful in attracting women and minorities so that it can be applied to other Agency recruitment efforts.

New Approach to Compensation. Dr. Gilman reported that there has been substantial progress towards a new approach for compensating researchers within ORD. The new approach will be more in line with that used by the National Institutes of Health (NIH), and it will allow EPA to offer compensation that is more competitive with universities. Dr. Gilman believes that this new approach will improve EPA's ability to attract excellent scientists to the intramural program. Dr. James Bus (Dow) expressed that he is pleased to see this change, and he noted that the BOSC has made this recommendation in past reports. Dr. Gilman replied that the Science Advisory Board (SAB), National Research Council (NRC), and others have made the same recommendation.

Improving Risk Assessments at EPA. There are a number of initiatives underway at EPA aimed at the state-of-the-science and improving the use of risk assessment as a tool within the Agency. There is an initiative to revitalize the training efforts that were active 4-5 years ago. Another initiative is to centralize the management of the Integrated Risk Information System (IRIS) database. There is a need to reach consensus across the Agency regarding the numbers reported in the database, and centralized management is necessary to accomplish this efficiently and quickly. The process to obtain outside input for IRIS also is being modified to allow for greater external input and to make the process more

transparent. Dr. Gilman mentioned that the Agency has recently completed screening the literature for data on 500 compounds; for those compounds for which there is extensive new literature (data published after 1994), the database needs to be updated. This management change has been supported by the American Chemistry Council, Natural Resources Defense Council, and others. Centralization of the database in will be accomplished by management reorganization and the creation of eight new positions.

Areas for BOSC Consideration. Dr. Gilman stated that he would like to involve the BOSC in a number of new initiatives. ORD has already made presentations on the computational toxicology and biotechnology initiatives, and today's meeting will include a presentation on the new homeland security initiative. Another area for potential BOSC involvement is the consequences of global climate change (GCC) on a regional scale and how it affects human health and ecosystems. He is asking both the BOSC and SAB to look at EPA efforts in this area and to assess the soundness and appropriateness of the inputs into the models. He stressed the need for a sound basis so that there is confidence in the model outcomes. Dr. Windom mentioned that global processes are usually tied to ozone, and asked if there are other aspects of global climate change that the BOSC can examine, such as mercury. Dr. Gilman replied that mercury emissions should be examined both regionally and globally because of the long-range transport issues. He noted that a better understanding of GCC will feed back into other fundamental regulatory and voluntary programs. Dr. Bus mentioned that, because of increased wealth in the United States, people are moving into pristine environments and changing them dramatically. Does ORD plan to conduct more sociological research that addresses such issues? Are there plans to look at the effects of GCC on the elderly population? Dr. Gilman said that he would like to create a program that parallels the children's program focused on asthma. The children's program includes education as well as research on the practices and activities to reduce asthma and the environmental contributions to asthma. In much the same way, research could be done that looks at the environmental impact on senior health and what effect an aging population has on the environment. In spring 2003, ORD will visit five universities to discuss these research issues. Dr. Gilman stated that he would like the BOSC to provide input on this topic as well.

Dr. Acosta asked if the post-docs are being recruited to replace the retiring researchers or to fill new positions. Furthermore, he wondered if there was a plan in place to replace the large group of retiring senior ORD researchers. Dr. Gilman replied that there is a strategy to replace ORD retiring researchers, but the plan could be more robust. About one-third of the post-docs are hired by ORD, the remainder go to industry, universities, and other organizations. The post-doc program was not, however, created to address the issue of retiring scientists. In fact, the post-doc program was instituted to bolster the skills available to the intramural program. He commented that the Agency also uses the AAAS fellows program to recruit new staff. Dr. Gilman said that the post-doc program also was intended to build the population of scientists outside the Agency who have a better understanding of EPA and its programs.

Dr. Windom asked if senior staff could be encouraged to retire so that their positions could be filled by new researchers. Dr. Gilman replied that a number of individuals are waiting to retire until they have published the results of their research. These staff are waiting to retire because the Agency cannot provide them administrative support once they retire. Dr. Gilman suggested that some of them might retire if the Agency could continue to provide them administrative support until the papers have been published. Dr. Windom commented that because there is no mandatory retirement age at EPA, there may not be many positions to fill in the Laboratories and Centers. Dr. Gilman noted, however, that he did not think that lack of retirement would be a significant problem in ORD. The larger problem is that the federal government is unable to be flexible with its staff. Identifying areas on which to focus extramural research is one means of combating this problem.

ORD Budget Update. Dr. Schnoor asked for an update on the budget. Dr. Gilman reported that the NIH and National Science Foundation (NSF) received the highest budget increase in FY03; increases that are

largely attributable to homeland security. EPA was a latecomer to homeland security, and most of the funding in FY02 was devoted to emergency response. Because Congress has not passed the appropriations bill, EPA's Homeland Security Research Center, which was not funded in FY02, is spending money that is not yet in ORD's budget. There is \$75 million for this Center in the FY03 budget, but that money has not been appropriated yet. Dr. Gilman expressed his hope that the budget would be approved by the state of the union address.

Dr. Gilman reported that the Science To Achieve Results (STAR) grant fellowship program was fully funded in one house of Congress, and half funded in the other. This was rather surprising because EPA's budget request did not include funding for the STAR grant fellowship program.

Dr. Rogene Henderson (Lovelace Respiratory Research Institute) asked if the current administration is less concerned about air pollution control than the previous administration. Dr. Gilman replied that the environmental arena is perhaps the most political one inside the beltway, so it is difficult for Governor Whitman to say anything about the environmental that does not trigger criticism from one faction or another. Dr. Gilman mentioned the issue of increasing the number of coal-fired power plants, which is viewed by some as a disincentive for new technology. He stated that the Bush Administration is committed to cleaner air. This administration has put forth the Clear Skies Initiative, which is different from the existing Clean Air Act. This initiative should lead to a 70% greater reduction in pollutants over the next 2 decades. Basically, this is a heated political debate, but a dispassionate look suggests that the Administration and the Congress are proposing interesting ideas and initiatives.

Dr. Rae Zimmerman (New York University) asked if ORD had the human resources to address the GCC issues described earlier. Dr. Gilman responded that the initiative is relatively small, about \$20 million. ORD has some resources and will rely on collaboration with others to fill any gaps.

Dr. Schnoor stated that he liked the new "consultation" approach implemented by Dr. Gilman. He asked if Dr. Gilman saw the BOSC operating in this manner in the future. He asked how Dr. Gilman wanted the BOSC to respond to these consultations. Dr. Gilman replied that letters following the consultations are appropriate to provide advice and recommendations. However, it was not his intent for the consultations to be a one-time event, rather he would like ORD staff to come back and report to the BOSC so that there will be a continuing dialog on these topics. He suggested that the BOSC may want to participate in conference calls with appropriate ORD staff involved in these new initiatives between meetings, or invite key speakers to provide an update for one of the initiatives at the next BOSC meeting. This dialog would be helpful to ORD and go beyond the advice in the initial letter, and the advice would be more meaningful as the members become more familiar with the initiative. Dr. Schnoor said that the BOSC may want to create Ad Hoc Committees to track these initiatives over time. Dr. Gilman stressed the need for timely input during the planning and early implementation stages.

Disclosures

Dr. Schnoor asked the BOSC members to disclose any items not reported on Form 3110, such as employment, research grants, consulting, large stock holdings, and other potential conflicts of interest.

Dr. Schnoor is employed at the University of Iowa, and he has research grants from the Department of Energy (DOE), NSF, Unions Oil of California, Ashland Chemical, and Department of Defense (DoD). He also is an editor for the journal *Environmental Science & Technology*, for which he receives a small stipend. Dr. Schnoor also is editing a series of books for Wiley and serves on various NRC panels. In addition, he serves on NRC's Water Science and Technology Board.

Dr. Jim Johnson is employed at Howard University, and has research grants from DOE and EPA. He also serves on NRC's Board of Environmental Studies and Toxicology (BEST), the Board of the Civil Engineering Research Foundation, and a panel at the University of Southern California, which includes three DOE laboratories.

Dr. Rogene Henderson is employed at the Lovelace Respiratory Research Institute. She has grant support from the EPA, DOD, NIH, and American Petroleum Institute, and does consulting for the Health Effects Institute. Dr. Henderson also serves on NRC's Board of Environmental Studies and Toxicology, as well as American Cancer Society and Army panels. In addition, Dr. Henderson is a National Associate of the National Academies.

Dr. Anna Harding is employed at Oregon State University, and she receives grant funding from EPA and DOE's Pacific Northwest National Laboratory. She performs grant review for the Centers for Disease Control and Prevention (CDC) and George Washington University.

Dr. Ann Bostrom is employed at Georgia Institute of Technology. She has grant support from EPA and the Mid-Atlantic Earthquake Center, which is funded by the NSF. Currently, Dr. Bostrom consults for SRI, and is on an NRC committee. Dr. Bostrom also is an elected officer for the Society for Risk Analysis.

Dr. Bus is employed at Dow Chemical Company. He is a board member for the CIIT Center for Health Research, a co-chair for the American Chemistry Council's Long-Range Research Initiative, and a reviewer for a National Institute of Environmental Health Sciences (NIEHS)/EPA panel. Dr. Bus is on the board of trustees for ILSI/HESI, and serves on the National Academy of Sciences (NAS) Toxicogenomics Emerging Issues Committee. He owns Dow stock and his retirement is dependent on the long-term stability of the company. He also serves as adjunct faculty at Michigan State University and provides consulting services to the University of Michigan and Wayne State University.

Dr. Rae Zimmerman is employed at the Robert F. Wagner Graduate School of Public Service at New York University. She receives grant funding from NSF, EPA, Columbia University, and CDC. She coordinates a workshop for the American Planning Association, and serves as a member of the Society for Risk Analysis for which she is co-directing the First World Congress on Risk. Dr. Zimmerman also is on the National Drinking Water Council's Research Working Group, serves on the NAS Committee on Review and Evaluation of the Army Chemical Stockpile Disposal Program.

Dr. Daniel Acosta is employed at the University of Cincinnati. He is the Chair of the National Center for Toxicological Research Science Advisory Board, and serves on the NIH Committee on Alternative Toxicological Methods, a US Pharmacopeia toxicology committee, the CDC Center for Environmental Health Science Advisory Committee, and the Toxicology Excellence for Risk Assessment (TERA) Board of Trustees. Dr. Acosta provides consulting services to the RJ Reynolds Tobacco Science Advisory Board, is the editor of *Toxicology In Vitro*, and serves as an expert witness for several legal firms.

Dr. Juarine Stewart is employed at Clark Atlanta University. She receives grant funding from the NIH and NSF.

Dr. Herb Windom is employed at Skidaway Institute of Oceanography. He receives grant funding from the NSF, National Oceanic and Atmospheric Administration (NOAA), and Autism Research Institute. The Skidaway Institute of Oceanography does laboratory analyses for Westinghouse Savannah River Laboratory and other clients. Dr. Windom also serves on two SAB review panels—metals research plan and contaminated sediments.

Dr. Schnoor indicated that the five members who are not present at this meeting will be asked to make their disclosures at the next BOSC meeting.

Approval of September 2002 Meeting Minutes

Dr. Schnoor asked if there were any comments on the September 2002 meeting minutes. He suggested several changes to the consultation on biotechnology (page 3) of the minutes. It was agreed that the vote to approve the minutes would be postponed until Friday.

Nominations Discussion

In the next year, five or more members will be cycling off the BOSC Executive Committee. Dr. Schnoor indicated that an open solicitation for new members needs to be completed by July 2003. To generate a list of nominees, ORD will:

- ? Prepare and distribute a letter to groups and associations requesting nominations.
- ? Poll the EPA Laboratories and Centers for nominees.
- ? Publish a notice advertising the BOSC vacancies in the Federal Register.
- ? Solicit recommendations from the BOSC Executive Committee members.

Dr. Preuss described the process that was used by the previous Nominating Committee. ORD contacted the nominees to ask them if they would be willing to serve on the BOSC, and to request a resume. Each nominee who submitted a resume was entered into a spreadsheet. The BOSC Nominating Committee reviewed the qualifications of the nominees and narrowed the selection for presentation to the Executive Committee. Finally, the BOSC Executive Committee selected a short list (with more names than vacant positions) of qualified individuals from the list who could fill the vacant positions, and submitted this list to the AA/ORD. The final selection was made by the EPA Deputy Administrator. Dr. Peter Preuss (ORD/NCER) said that this process could be altered by the Nominating Committee, but the process needs to be as open and transparent as possible. Dr. Windom asked if the names of the nominees had to be posted on the Web for public comment prior to final selections. Ms. Shirley Hamilton (ORD/NCER) replied that she did not think the nominees had to be posted on the Web; however, she agreed to check with the office within EPA that was responsible for committee management for confirmation. She added that the final list of nominees should be submitted to the Deputy Administrator by late August or early September. Ms. Hamilton noted that the Federal Register notice requires 30 days, followed by a 60-90 day response time. Dr. Bus suggested that the Nominating Committee review the list that was generated by the previous Nominating Committee. Dr. Schnoor agreed to provide this list to the Committee, but he asked that the individuals be renominated for this process.

Dr. Schnoor stressed the need to begin the nominating process very soon, and pointed out that the Nominating Committee should take into consideration the expertise of the BOSC members who are cycling off the Executive Committee, as well as the future directions of the BOSC so that there is an appropriate balance of expertise on the Committee. Dr. Johnson offered to be the Chair of the Nominating Committee, and Drs. Windom, Stewart, Harding, and Henderson agreed to serve on the Committee. Dr. Johnson asked Ms. Hamilton to provide him a copy of the notice that was published in the Federal Register to solicit nominations for the previous Nominating Committee. Dr. Preuss stated that EPA will prepare the notice and send it to the Nominating Committee members for input.

Drs. Zimmerman, Schnoor, Bus, Dorward-King, and Bostrom will be cycling off this year, or soon after. Dr. Bostrom agreed to remain on the Committee until the Ad Hoc Communications Subcommittee has completed its review. Dr. Acosta agreed to remain on the BOSC until 2004. Drs. Chameides and Clark will be asked to remain on BOSC for one more year as well. The BOSC Executive Committee will, therefore, be losing expertise in health and toxicology, risk and policy, risk communication, and environmental chemistry. Overall, there will be four to five vacant positions that will need to be filled. Currently, the Executive Committee has strong expertise in toxicology, but it is weak in ecology. The BOSC members discussed many disciplines that should be represented on the BOSC. These include: social and behavioral science, wildlife and fisheries ecology, economics, risk assessment and policy, human ecology, environmental chemistry, exposure risk assessment, biotechnology, computational toxicology, and ethics. Furthermore, the Nominating Committee should consider geographic diversity when they are choosing nominees. The BOSC members then voiced their opinions about the two most important disciplines they think should be represented on the Executive Committee. Risk assessment and policy received eight votes, wildlife and fisheries ecology received five votes, behavioral science received three votes, exposure and risk assessment received two votes, and ethics and computational toxicology each received one vote.

BOSC Future Directions

Dr. Preuss asked if there was any interest in further involvement in any of the five consultations (i.e., computational toxicology, biotechnology, homeland security, global climate change, and environmental measurements and monitoring) they have heard or will hear. Does the BOSC want to get more involved in any of these areas? Dr. Preuss indicated that Dr. Gilman will be asking the BOSC to establish a group that could be consulted by EPA on a more regular basis. He noted that this group could address other areas as well. There currently are eight topics on which the BOSC could focus future efforts: (1) the Report on the Environment, (2) computational toxicology, (3) biotechnology, (4) global climate change modeling, (5) measurements and modeling, (6) communications, (7) Mercury Multi-Year Plan, and (8) homeland security. Dr. Windom asked about the objectives of the consultations. Is ORD asking for the BOSC's advice or are these presentations intended to simply inform the BOSC of ORD activities? Dr. Johnson noted that the BOSC member's opinions regarding these topics are recorded in the meeting minutes; however, these are individual opinions based on first impressions and not a consensus opinion. Drs. Bostrom and Henderson both expressed their discomfort with providing advice on topics on which they are not overly familiar. They both thought it would be helpful if the BOSC members were provided some briefing materials to familiarize themselves with the topic to be presented prior to the consultation. Another option would be to provide input at the meeting following the presentation, which would allow the members adequate time to review the presentation and any other materials. Dr. Johnson stated that such an approach would parallel the NRC model. Dr. Bostrom proposed the following general approach to BOSC consultations:

- (1) Briefing materials are distributed to the BOSC members in advance of the presentation.
- (2) The presentation is made at the BOSC meeting.
- (3) The BOSC members discuss the presentation topic among themselves following the presentation.
- (4) The BOSC provides advice, opinions, and recommendations concerning the topic—at the meeting (if timely input is essential), in a conference call, or in a letter to Dr. Gilman.

Dr. Schnoor supported Dr. Bostrom's proposal, and stressed the importance of determining ORD's expectations regarding these consultations. He noted that Dr. Gilman prefers quicker, harder-hitting

advice from the BOSC about the projects on which they are consulted. Dr. Bostrom suggested that it might be helpful to augment the expertise of the Executive Committee for these consultations. Dr. Schnoor stated that these experts could provide information to the BOSC, but unless they were BOSC members they could not advise EPA. Dr. Preuss noted that a single approach would not be appropriate for all consultations. They will vary depending on the needs of the ORD group requesting the consultation. He added that some projects will require immediate BOSC advice and guidance, while other projects will be ongoing for months and possibly years. Furthermore, ad-hoc subcommittees might be formed if the consultation is complex or requires long-term input following the initial consultation. For example, an ad-hoc subcommittee might be useful for the Report on the Environment. Dr. Preuss noted that there also is the issue of the third review of the Laboratories and Centers. He assumes that BOSC will want to continue to perform that activity. Dr. Bus reminded the BOSC members that the Laboratories and Center have requested that the Subcommittees serve as an ongoing resource.

Dr. Johnson asked if there were any crosscutting issues among the proposed future directions. Dr. Schnoor identified two crosscutting issues: measurements and risk communications issues. He noted that risk and risk communication are key elements in all of the future directions. It was decided that the BOSC would select several consultations on which to follow-up; however, the selection will be made after the BOSC members hear the consultations on homeland security and the Report on the Environment.

Future Meetings

The May 22-23, 2003, meeting needs to be rescheduled because Dr. Schnoor will be unable to attend on those dates. It was decided that the meeting would be held May 15-16, 2003. Furthermore, it was determined that this meeting will require 2 full days because the Communications Ad Hoc Subcommittee needs to meet and make their report to BOSC. The September meeting is scheduled for September 11-12, 2003, with a full day on the 11th and a half of a day on the 12th.

Consultation on ORD's Homeland Security Research Strategy

Tim Oppelt, the newly appointed Director of EPA's National Homeland Security Research Center (NHSRC), briefed the BOSC on this new research initiative within ORD. The goal of the Homeland Security Research program is to provide, within 3 years, appropriate, affordable, reliable, tested, and effective technologies and guidance for preparedness, detection, containment, decontamination, and risks of chemical and biological attacks on buildings and water systems. The strategy for EPA homeland security is to provide critical infrastructure protection; preparedness, response, and recovery; communication and information; and protection of EPA personnel and infrastructure. The research program scope will encompass biological and chemical hazards, buildings and large structures, the water supply, wastewater treatment and infrastructure, and rapid risk assessment. Mr. Oppelt noted that the Center received no new FTEs (full-time equivalents). By January 2003, 22 ORD staff had been reassigned (on detail) to the NHSRC, and 55 other staff will provide part-time support to the Center. Existing EPA employees were used to staff the Center so that the work could be initiated very quickly. Most of the staff is located at ORD's facilities in Cincinnati, where the Center is headquartered, and Research Triangle Park, NC; others are in Las Vegas, NV; Edison, NJ; Washington, DC; and Atlanta, GA. The staff members are in the process of receiving top-secret clearances.

The key operating principles for the NHSRC are:

- ? Short-term, high-intensity applied effort.
- ? Understanding and focusing on meeting user needs (i.e., building managers).
- ? High-quality and useful products, quickly.

- ? Partnerships within ORD, EPA, and between other agencies and the private sector.
- ? Targeting of key knowledge gaps.

The NHSRC will form several collaborations both within EPA and with other agencies. Some examples of the collaborations within EPA include: Office of Water/ORD Water Security Task Force; the Environmental Technology Verification (ETV) program; and the Office of Solid Waste and Emergency Response (OSWER)/Office of Prevention, Pesticides, and Toxic Substances (OPPTS) anthrax technical support. Examples of collaboration with other agencies include: Edgewood Chemical and Biological Center (ECBC) Memorandum of Understanding (MOU); Food and Drug Administration (FDA) MOU; DOE MOU; U.S. Air Force MOU; joint research with the CDC, FDA, and ECBC on water disinfection; DoD Technical Support Working Group; Los Angeles municipal water district; Office of Homeland Security's Building Air Safety Committee; and DoD Counterproliferation Research Committee.

The program approach for the NHSRC is to perform facility analysis and containment assessment to develop a threat scenario. This will lead to an identification of the critical events (i.e., the events most likely to happen). Furthermore, an understanding of the needs in terms of risk, detection, containment, treatment, and response will develop from this research. The NHSRC will focus on the current state of knowledge and the gaps in research needs. A research plan then will be developed to address those gaps. Facility analysis will focus on larger buildings (e.g., offices, apartments, schools, hospitals, theaters, light industrial) and buildings with specialized features (e.g., transportation facilities, manufacturing facilities, power plants, stadia). Water infrastructure facility analysis will include water supply and wastewater.

There are many potential scenarios for a chemical/biological/toxic material attack on buildings and many questions pertaining to such an attack. How are the toxic agents brought in? Which agents are critical for the different modes of attack? How are toxic agents spread within the building? There are several potential scenarios for an attack on the water supply including source water, water treatment, water storage and distribution, and water use. The NHSRC will research how to keep the water system and supply safe by evaluating the vulnerabilities in the current system and developing prevention and protection strategies. The NHSRC will provide critical events analysis—what is the likelihood of events and what would be the impact of such events.

There is a Safe Buildings Program that will evaluate modes of detection (early warning, protect responders, inform cleanup), containment (protect the occupants/responders, and isolate the contaminants), disposal (packaging, transport, destruction, and landfill), and decontamination (efficacy/compatibility, safety/cost, and optimization). Detection research activities for buildings will focus on laboratory and field testing of detectors, evaluation of and enhancements to sampling and analysis methods for surfaces, and development/modification of detectors for indoor environments. There are several containment research activities for buildings including the effects of HVAC design/operation on dispersal, effects of human activities and environmental conditions on dispersal, studies of indoor sinks/re-emissions, development of guidance for safe havens in buildings, and guidance for retrofitting protective filters into existing structures. Decontamination research activities for buildings will consist of laboratory and field testing of decontaminants on indoor materials; fumigant penetration studies on indoor materials; studies of costs, risks, and special methods for high-value materials; and support to OPPTS in licensing sterilants. Disposal research activities for building contaminants will focus on specifications for safe packaging and transport, assessment of conditions for safe incineration, specifications and conditions for landfilling, and support to OSWER for disposal of contaminated and decontaminated wastes.

There will be a parallel Water Security Research Program that will focus primarily on the water supply; wastewater systems is a secondary focus. The Water Security Research Program includes:

- ? Characterization and detection to provide early warning, rapid screening, and informed response actions.
- ? Response and mitigation, which included evaluating point of use (POU) and point of entry (POE) monitors, alternative treatments, and the impacts of cyber and service interruptions.
- ? Prevention and protection, which includes evaluation of the efficacy of existing protections and the distribution of those protections.

The NHSRC's characterization and detection research efforts will focus on bioagent concentration methods, screening protocols for unknowns, and ETV verifications (sensors and biomonitors). Research on prevention and protection of the water supply will focus on the efficacy of conventional treatments, the fate and transport of a contaminant in distribution systems, distribution system pilot plant evaluations, and treatment byproducts. Response and mitigation research activities consist of validating field portable monitors, evaluating water decontamination methods, understanding emergency treatment capacity, and evaluating POU/POE devices.

The Rapid Risk Assessment Research Program addresses information systems and tools (hazard data, exposure models, risk assessment models), risk estimation (threat scenarios, buildings and water, and response level guidance), and risk communication (rapid risk assessment, communication to the public and responders, and technical assistance). This program is assessing the current databases and developing short-term inhalation toxicity limits for five priority chemical/biological agents in three effects categories (i.e., none, tolerable, and overtly toxic), and planning a risk communication interagency workshop for February 2003. Mr. Oppelt provided an update of the Center's progress. Five homeland security technology centers have been established; solicitations for water and air monitoring/detection and wastewater decontamination were issued. A strategy meeting was held with ETV verification partners in October 2002, and verification testing of CN monitors and microtox screening will begin in February 2003. Water disinfection studies on *B. cereus*, a surrogate for anthrax, have begun. The Water Distribution System Studies Facility (WATERS) was established in January 2003, at the T&E facility. The water distribution fate and transport field study was completed in November 2002. The near-term NHSRC products are as follows:

- ? Water Screening Methodology—March 2003
- ? Water Disinfection Efficacy Report—June 2003
- ? Draft Guidance Documents for Water Security and Building Protection—March 2003
- ? Water distribution system fate and transport assessment—May 2003
- ? Acute and Short-Term Guidance Limits for 5-10 Chemical and Biological Warfare Agents—June 2003
- ? ETV Verification Reports—June 2003
- ? State of the Art Report on Building Decontamination—April 2003
- ? Fumigant Efficacy Study Report—May 2003.

The audiences for these products are water utility managers, first responders, building managers, and facility managers, etc. There is a natural balance between human health and the environment in this research; however, for now, NHSRC research is focused on human health. The NHSRC is trying to determine when there should be a response, but not necessarily what that response should be. Mr. Oppelt stated that much of the infrastructure is in place to perform the needed experiments. Dr. Windom asked how the tools that are identified would be put into practice. Mr. Oppelt replied that the NHSRC is not trying to develop regulations, but rather to provide the necessary tools and guidance needed to keep buildings and the water supply safe.

Dr. Bus asked about ecological threats, for example, releasing radiation in the Chesapeake Bay. Mr. Oppelt said that monitoring and early warning systems would be useful in such as scenario. Dr. Windom asked how people who need this information would have access to it and yet be able to keep it secure. Mr. Oppelt acknowledged the difficulty of keeping the information secure while making it readily available to those who need it. He said that an effective communication strategy for NHSRC results is being developed. Dr. Schnoor mentioned that a new consulting industry has developed around keeping industrial plants safe. Also, most water treatment plants are conducting their own vulnerability assessments. Will the NHSRC have access to this information? Mr. Oppelt responded that the Center does not need access to specific facilities, but it would be beneficial to look at all facility assessments to determine if there is a threat that has been overlooked. Two of the Center staff members have been cleared to review these assessments. Dr. Bus noted that most chemical companies are conducting assessments. Mr. Oppelt said that he may want to talk with Dow staff about what they are doing to determine if the research program is on target. Dr. Johnson asked if the Center will be able to develop an effective strategy for buildings. Mr. Oppelt replied that the Center will develop/identify the tools needed by building managers to develop strategies to protect/prevent attacks. The NHSRC will provide the guidance and tools required to make the buildings safer. It will be up to the building managers to employ the tools and guidance to improve building safety. For example, the Center will provide guidance on how many sensors are needed and the optimal placement of the sensors in a building. Dr. Johnson noted that, in general, universities are open environments. Are there plans for the NHSRC to develop a model for universities that preserves the openness of the community while keeping it safe? Mr. Oppelt said that strategies for universities would probably revolve around early detection rather than prevention.

Dr. Schnoor asked what the BOSC could do for NHSRC in the future. Mr. Oppelt replied that the BOSC could provide follow-up consultations, review the draft implementation plan (probably available in February 2003), and provide for an ongoing dialog with Center staff. Dr. Gilman mentioned that it might be helpful to invite some of the BOSC members to future NHSRC meetings, such as the waste water systems stakeholder meeting to be held February 5-7, 2003. Ms. Hamilton agreed to distribute information about the meeting to the BOSC members. Dr. Johnson noted that the BOSC could provide ORD a different perspective on the Center to ensure that there are no large gaps in the research program.

Friday, January 10, 2003

A First Consultation: EPA's Report on the Environment

Dr. Preuss presented to the BOSC the EPA's Report on the Environment. Preparation of the report was initiated 12 months ago in response to a statement made by EPA Administrator Christine Todd Whitman regarding cleaner air, purer water, and better-protected land.

“My goals for the agency are to make our air cleaner, our water purer, and our land better protected. These are the results that we are working hard to achieve. Our progress towards these goals will be the measures of our success. To know whether we are making progress towards these goals, we need high quality information about the state of the environment. It is also important that we hold ourselves accountable to the American public and report to them on our progress in reaching these goals we have set for ourselves.

The Indicators Initiative and State of the Environment Report are critical steps in our more comprehensive approach to identifying priorities, focusing resources on areas of greatest concern, and managing our work to achieve measurable results.”

—Christine Todd Whitman, November 2001

Dr. Preuss stated that two reports will be generated: the Indicators Initiative Report and the State of the Environment Report. The ORD and the Office of Environmental Information are responsible for preparing the reports, both of which are due for release in spring 2003.

Agency-wide workshops were held to identify the major themes, develop a series of questions to answer about the environment, and develop initial indicators recommendations. This represents a departure from the Agency’s usual approach, which is matching indicators to questions, rather than questions to indicators. It actually encompasses a quality review of the indicators.

Dr. Preuss indicated that the State of the Environment Report will have five chapters: Ecological Conditions, Human Health, Land, Air, and Water; and the chapters are in the question/indicator format. There are three categories of indicators:

- ? Category I: sampling is done such that there is a valid national sample, appropriate QA/QC has been done, and there is a peer-reviewed data set.
- ? Category II: indicators are good, but there is not enough information for national scope.
- ? Category III: indicators are sound, but there are not enough data on them for analysis.

What is the ecological condition of major ecosystems? This question will be answered using the SAB framework as a base from which to work. The SAB framework is a simplified catalog of issues rated on landscape condition, biotic condition, chemical and physical characteristics, ecological processes, hydrology and morphology, and natural disturbance regimes. Ecosystem indicators from the Heinz Report, which is a working document that includes more than 100 indicators, also will be incorporated. Finally, additional indicators that may “link” conditions to exposures/stressors addressed in the Land, Air, and Water chapters will be included.

In terms of human health there are three main questions that are going to be answered:

- ? What are the trends for health and disease in the United States?
- ? What do we know about exposure?
- ? What do we know about linkages between exposure and health effects?

Much of the data for this chapter came from the National Health and Nutrition Examination Survey (NHANES). Dr. Preuss presented an example questions/indicators page for human health.

For land, the report addresses three main areas: (1) land use, (2) chemicals in the landscape, and (3) waste and contaminated lands. Dr. Preuss presented an example questions/indicators page for land. He noted that the chapter on air is very broad in that it covers: (1) outdoor air, (2) acid deposition, (3) indoor air, (4) stratospheric ozone, and (5) climate change. The chapter on water covers: (1) water and watersheds, (2) drinking water, (3) recreation in and on the water, and (4) consumption of fish and shellfish.

Currently, ORD is facilitating an interagency review of the reports, and looking for additional reviews from the Environmental Council of the States, Tribes, and external experts. There also will be an SAB review of the report in the spring. The next step in the process is to determine how the questions can be improved, so that the report identifies the “best” set of questions. What additional indicators are needed to better respond to the questions? Are there large gaps in national coverage? Can improvements be made to existing data collection efforts? The idea is to improve what data are collected now to advise on how to collect better national data. What data and research are needed to better support existing indicators? How can states and other groups effectively participate in planning and strategizing? What research is needed to better understand the linkages between exposures or stressors and human health and ecological conditions. This report will advise on how to develop better strategic plans.

Dr. Preuss explained that the BOSC could assist this effort by actively consulting with ORD and getting involved in discussions about the directions and content of the Indicator Strategic Plan. The BOSC also could review the early drafts of the plan. In addition, the BOSC could convene forums and workshops to bring experts from the various fields together, and the BOSC could facilitate peer review.

Dr. Johnson suggested that the BOSC begin by reviewing the draft report and going forward from there. Dr. Windom asked if there would be any forecasting in the report. Dr. Preuss replied that there is no forecasting; EPA was simply providing the facts as objectively as possible without extrapolation. Dr. Zimmerman mentioned that this report was very much needed and asked about its relationship to the Council on Environmental Quality (CEQ) reports. Are there links between health and ecology? Dr. Preuss responded that the report is similar to the CEQ reports, but EPA’s report contains a larger amount of data. There are areas in the report where EPA tried to forge links between health and ecology such as with aging, land use, sprawl, urbanization, etc. Dr. Preuss noted, however, that this is a difficult task because there are limited national data. He stated that this report is not the “final word” on the state of the environment; there will be gaps that will need to be filled and corrected as the Agency moves forward. Dr. Harding asked how this report differs from the Heinz report mentioned earlier by Dr. Preuss, and he responded that the Heinz report focused only on ecological condition; EPA’s report is focusing on air, water, land, etc. Another difference was that the Heinz group used a consensus process to identify the indicators.

Dr. Henderson asked if EPA’s report also addressed human health morbidity. Dr. Preuss responded that ORD is trying to include data on morbidity, but that has been difficult because reporting morbidity is voluntary in the human health arena. Therefore, ORD is using the data that are available. Most of that data, however, is insufficient for answering national questions. Much of the available data comes from the National Health Interview Survey (NHIS), which asks people about their health. Data on infectious disease is not always reported, and much of the data on cancer comes from the Surveillance, Epidemiology, and End Results (SEER) databases, which do not provide national coverage. Dr. Preuss mentioned that the PEW foundation reported that there are not enough of the right indicators to measure human health in a comprehensive way.

Dr. Bus asked if ORD was consulting other agencies, for example, the U.S. Department of Agriculture (USDA) for food quality indicators. Dr. Preuss replied that ORD has made an attempt to work with other agencies, but there has been varied response from these agencies. He noted that more than half of the indicators are from other agencies; however, most of these indicators do not have a national scope. Dr. Zimmerman asked who rated the indicators as Category I, II, and III. Dr. Preuss replied that an external review panel scored the indicators, and EPA staff rated the indicators as Category I, II, or III based on that external input. Dr. Stewart mentioned that it would have been helpful to have received the report prior to this consultation. Dr. Preuss responded that providing the report to the BOSC prior to the meeting would have made the draft a public document, and the Agency was not ready for it to be distributed to the public. The consultation was provided at this meeting so that the report could be added to the BOSC’s

future directions agenda. Dr. Windom asked if this would be an ongoing initiative at EPA. Dr. Preuss said that EPA would like to update this report in the future. Dr. Stewart asked if this report would inform the research conducted at the ORD Laboratories and Centers. Dr. Preuss replied that he certainly hoped that would happen. ORD anticipates that the report will be used to address gaps in the research, and to drive the future strategic planning of the Laboratories and Centers. Dr. Schnoor asked about the external reviewers for the report, and the selection process. Dr. Preuss indicated that EPA is selecting individuals who have a high degree of familiarity with the issues and materials. He added that the report also will be reviewed by the SAB.

Dr. Schnoor then asked about the role of the BOSC in this process. Dr. Johnson suggested that the BOSC assist ORD in developing a strategic plan that will help correlate the report with the strategic plans of the Laboratories and Centers. Dr. Windom suggested that because the BOSC has considerable experience with communication, the members could help with marketing the report to the right audiences. Dr. Bostrom asked if the BOSC could be involved in the outreach and communication efforts. Dr. Preuss responded that the Office of Communication is developing a strategy for communication of the report.

Dr. Schnoor suggested that BOSC form an ad hoc committee to deal with the implications of the reports on the Laboratories and Centers. Dr. Johnson agreed that this ad hoc committee could help identify gaps and develop pathways of research for the ORD Laboratories and Centers. Dr. Schnoor suggested that this ad hoc committee be formed at the May 2003 meeting. Dr. Bostrom said that the BOSC would need a copy of the Environmental Indicators report. Dr. Preuss replied that the Indicators report has not even been started. Dr. Bostrom asked if the BOSC could be involved in preparation of that report. Dr. Johnson suggested that the BOSC receive a consultation on the reports at the May meeting, after the BOSC has had a chance to read the draft State of the Environment report. The BOSC then could draft a letter report on the report.

Dr. Preuss asked the BOSC for substantive advice regarding the draft State of the Environment Report, and guidance about what would be useful to include in the Indicators and Strategic Planning report. Dr. Schnoor asked if the BOSC could work with the SAB to review the report. He suggested that Drs. Windom, Henderson, and possibly Chameides interact with the SAB concerning review of the report.

BOSC Communications Subcommittee Report

Mike Moore, ORD's Communications Director, introduced Mike Brown, the new Assistant Associate Administrator of Communications at ORD. Mr. Brown stated that he supported the efforts of the BOSC Communications Ad Hoc Subcommittee. He was brought into ORD to provide public affairs and communications expertise. He has accepted the charge to lead effort to elevate the reputation of the EPA and the science conducted by the Agency, and to use communication as a tool to advance EPA science. The overall goals of the communication effort is to communicate the results of science to the public and to demonstrate the importance of EPA's research. Mr. Brown noted that, to affect a cultural change, it is important to have an open, transparent, and proactive exchange. Dr. Johnson noted that the people who can understand the science are usually not the ones to whom the science needs to be communicated. Mr. Brown agreed, and added that the communication initiative is so new that those issues have yet to be worked out.

Dr. Bostrom then provided the following update on the progress of the Communication Subcommittee:

? The Subcommittee has agreed to the points made by the BOSC in the draft report.

- ? The Subcommittee asked Dr. Bostrom to talk with Dr. Gilman about the next steps for the Subcommittee.
- ? Dr. Bostrom spoke with Dr. Gilman and Mr. Brown to obtain input regarding how to proceed with the communication review efforts.
- ? Dr. Bostrom then met with Mr. Brown to discuss the next steps. It was decided that a formal letter report was not necessary.

Based on discussions with Dr. Gilman and Mr. Brown, the next steps in the process are:

- ? The Subcommittee will hold a 1-day workshop in conjunction with the next BOSC meeting to discuss best communication practices in the ORD Laboratories and Centers as well as best practices in other agencies.
- ? The letters that have been previously drafted and vetted will be distributed to the Laboratories and Centers.
- ? People from other agencies will be invited to the May workshop.
- ? Following the workshop, the Subcommittee will prepared a summary report that includes formal recommendations for ORD that were derived from the workshop.

Dr. Bostrom commented that other agencies that could be invited to the workshop include, but are not limited to: NIH, NSF, NRC, CDC, NAS, and NIEHS.

Dr. Schnoor asked Dr. Bostrom to articulate the goal of the workshop, and she replied that the goal of the workshop is to identify the best practices of communicating research results so that these approaches can be used by ORD to improve communication of EPA research results. Dr. Bostrom noted that the workshop is being held in conjunction with the next BOSC meeting to elevate its status among other federal agencies. Dr. Henderson commented that most scientists communicate their results through publications in refereed journals. Dr. Bostrom pointed out that the scientific community is the major audience of peer reviewed journals. She note that there are other audiences to which EPA must effectively communicate its results such as the public, Congress, other agencies, and EPA Program and Regional Offices. She reminded the BOSC members that the NCERQA Communications Strategy identified 11 audiences. Mr. Brown added that research results have implications beyond regulations including consumer information, human health, and other applications.

Dr. Bus mentioned that it is valuable to bring in other agencies to examine how they communicate. Dr. Johnson agreed that a collection of agencies would be a useful benchmark for EPA communications. Dr. Windom asked if non-governmental organizations (NGOs) would be invited to the workshop. Dr. Bostrom said that there are no plans to invite NGOs to the workshop; however, she thought that was an interesting idea.

Dr. Schnoor said that invitations to these agencies should be issued soon if EPA wants them to participate in the workshop. Mike Moore volunteered to help identify the individuals at the agencies who should be invited. Dr. Preuss also will be involved in identifying invitees. Dr. Schnoor noted that the workshop will be a public meeting, and he reminded the BOSC members that all communications should be sent through Ms. Hamilton. Dr. Bostrom concluded the Communications Subcommittee update by stating that she will take responsibility for sending the letters to the Laboratories and Centers.

Mike Moore then gave a presentation that described the communication strategies currently in place at ORD. He noted that this is the first time EPA scientists have been asked to communicate information beyond the normal scope. The old reward system was based on publishing in journals, not providing interviews to reporters. Mr. Moore indicated that this system has changed because the Agency recognizes the importance of promoting how EPA science has benefitted our society. There are results that can and should be communicated. He noted that there are barriers in place to ensure that the science does not get released before regulatory decisions are made. Dr. Zimmerman mentioned that some papers in the peer review system actually get the attention of the media.

Mr. Moore reported that there is a new events calendar at ORD that should be brought to the attention of the Laboratory and Center Directors. This calendar is created 6 months in advance and certain events are chosen for press-related activities. They currently are working with the Public Relation's Directors to identify the "hot topics" in the Laboratories and Centers. Mr. Moore indicated that there are several communications vehicles currently available:

- ? ORD is working with the Office of Public Affairs (OPA) to promote meetings, seminars, and conferences that communicate research results.
- ? There are Regional communications staff who are responsible for communicating EPA science. Recently, there was a summit of the Regional Laboratory Directors in Atlanta where they developed the publication "Working Together to Integrate Science in Decision-Making."
- ? Integration of work that currently is being done. For example there are STAR grants in every state and there should be communications between the Regional Directors so that the Regions are kept abreast of what is going on between and within Regions.
- ? There are new "theme months" in the OPA, including science month. Last year, there was a very successful science forum that was held during science month. It was a great opportunity for people within EPA to learn about the science being conducted at the Agency. There also was a tour with the media and science writers that was aimed at promoting the role of science within the EPA.
- ? There are several promotional and informational booklets that describe the science at EPA.

Estella Waldman (ORD/NCER) then provided some examples of the outreach tools being used by ORD. She showed the BOSC many examples of publications, booklets, pamphlets, Web sites, and handouts that all are designed to promote EPA science. Dr. Bostrom said she is thankful that Dr. Gilman is interested in improving communication at so many different levels.

BOSC Future Directions Discussion Continued

As mentioned in the earlier discussion of future directions, there are eight topics for consideration by the BOSC:

1. Report on the Environment
2. Computational Toxicology
3. Biotechnology (Genomics/Proteomics)
4. Global Climate Change Modeling
5. Homeland Security
6. Environmental Measurements and Modeling
7. Communications

8. Multiyear Plans, especially Mercury.

The BOSC discussed each of these initiatives and topics to determine which generated the most interest among the members. Dr. Windom asked which issues were crosscutting and, therefore, had major implications for the other initiatives. He thought that Environmental Measurements and Modeling could cut across numerous initiatives. Numerous crosscutting questions could be answered under this broad topic, such as: How does the Agency ensure consistency in environmental measurements? Who is responsible for ensuring consistency? How is consistency validated? How are the measurements utilized? Dr. Schnoor noted that there was a recent initiative to double the NSF budget over the next 5 years; perhaps they should focus part of that new money on environmental cyber infrastructure. The United States has fallen behind the world in computing and network science, and modelers cannot use each other's data because of the differences in models. Dr. Bostrom mentioned that there was an obvious connection between the Report on the Environment and Environmental Measurements and Modeling. Dr. Henderson agreed with that and added that the BOSC should give thought to pursuing genomics and proteomics, as there is a plethora of data on the effects of exposure to toxins on genomes. Dr. Bus thought other agencies were dealing with that issue and he thought it would be redundant for the BOSC to focus its energies there.

Dr. Henderson asked Dr. Preuss to define computational toxicology. Dr. Preuss said that, in simple terms, it is a way to move from simple things to methods that allow one to get much more information. For example, a library of metabolic pathways would allow one to model the effects of toxic compounds. Dr. Preuss noted that this is a new area for ORD and they are still trying to define it; perhaps the BOSC could help define a pathway for computational toxicology.

Dr. Schnoor mentioned that the BOSC could help with the new homeland security efforts at ORD. Dr. Henderson agreed, especially because it is such a new initiative. Dr. Stewart asked that, given the immediacy of the research, should the BOSC work to evaluate the role of the Laboratories and Centers in this and future homeland security research. Dr. Bostrom agreed that some activities would have broad implications for ORD research. Dr. Johnson added that new tools will emerge from computational toxicology, genomics, and homeland security research that will have a broad impact on ORD, STAR grants, and other Agency efforts.

Dr. Bus noted that biotech crops and food would, in the future, present enormous scientific and technical challenges. He recommended that ORD be involved in driving the science for good regulations, and that this topic should not fall off the BOSC's radar screen. Dr. Schnoor replied that the EPA could only regulate the food supply as it relates to pesticides; therefore, this only applies to Bt corn as of now. Dr. Bostrom reminded the members that the BOSC was to followup on a number of issues mentioned during the last meeting, such as the Mercury Multi-Year Plan. Dr. Schnoor said that he did follow up with Dr. Gilman, and was told that the plan was not ready to come back to the BOSC.

The BOSC members decided that their future directions would focus on: the Report on the Environment, Homeland Security Research, Environmental Measurements and Modeling, and the Mercury Multi-Year Plan.

ORD Laboratory/Center Reviews Followup

Drs. Schnoor, Bostrom, and Chameides have now vetted the NERL report. Dr. Bostrom found several areas in the report that require further clarification. On page 16, section 3.1.5, paragraph 2, there should be a sentence or two more about the frustrations mentioned and more specific ways to resolve them. Dr. Stewart agreed to review her notes from the site visit and to add these sentences. On page 19, section

3.3.1, at the end of paragraph one, there is a statement about the lack of diversity at NERL. Earlier in this meeting, Dr. Gilman mentioned the great diversity resulting from the post-doc program. Should this be added to the report? On page 21, section 3.3.3, paragraph three, there is a significant point in the text that is not discussed in the recommendations section. Dr. Stewart said that the point was deliberately not addressed in the recommendations section because of its political implications. On page 23, top paragraph, there is another statement about diversity that seems at odds with Dr. Gilman's comment on the post-doc program. These issues of diversity should be clarified. Dr. Schnoor concluded the discussion by saying that, overall, the report was very good. He asked that the report be distributed to the members once these comments have been addressed.

Common Themes of the Five Laboratory/Center Review Reports

Dr. Schnoor identified the following common themes in the five Laboratory/Center Review Reports:

1. Strategic planning is in all five reports.
 - ? All the Laboratories and Centers should update and make their strategic plan a priority.
 - ? There is too much emphasis on top-down and not enough emphasis on bottom-up planning.
 - ? There is an issue of Multi-Year Plans (MYPs) versus Laboratory and Center strategic planning. The MYPs seem to have more of a focus; therefore, the strategic plans of the Laboratories and Centers are not getting adequate attention.
2. The topics of benchmarking and measures of success arose in all five reports. The BOSC composed a letter report to Dr. Gilman regarding measures of success.
3. Communications was a theme in all five reports.
 - ? There are some problems in that bench scientists do not always know what is in the works.
 - ? Professional communications specialists are needed.
 - ? The Web sites are generally good.
4. Workforce planning is mentioned in all five reports. There are many questions regarding workforce planning:
 - ? What is the proper role of the post-docs?
 - ? What are the plans to replace an aging staff?
 - ? How can the Laboratories and Centers adjust to new issues and priority changes?
 - ? A visiting scientists program is needed to allow ORD scientists to go on sabbatical, and allow outside scientists to do a sabbatical in ORD Laboratories and Centers.
 - ? The STAR Fellowship program should be maintained.
5. The need for social scientists was mentioned in all five reports.
 - ? Some new economists have been hired, but more are needed.
 - ? The Laboratories/Centers need exposure scientists, epidemiologists, and behaviorists.
 - ? There also is a need for risk communication professionals.
6. Positive successes were common among the reports, including:
 - ? Reorganization is no longer an issue.
 - ? There is a better balance between ecology and human health.

- ? The Web sites are better
- ? The MYPs are clearly crosscutting.
- ? The BOSC views the post-doc program positively.
- ? The BOSC supports the STAR Fellowship program.

Dr. Johnson asked that there be a letter report on common themes. Dr. Schnoor agreed to draft that letter report. Dr. Windom wondered if the letter should be sent to the Laboratories and Centers with the reports. He also asked that the Laboratories and Centers prepare a response to the BOSC regarding the reports. Dr. Preuss said that he would try to obtain a response from the Laboratories/Centers. Dr. Bostrom asked that the Laboratories and Centers be publicly commended on their successes in the letter report.

Action Items

- ? Dr. Johnson agreed to chair the Nominating Committee, and Drs. Windom, Stewart, Harding, and Henderson volunteered to serve on this Committee.
- ? Dr. Schnoor agreed to provide to the Nominating Committee members the list of individuals developed by the previous Nominating Committee; however, he asked that the individuals be renominated for this process.
- ? Dr. Schnoor asked Dr. Zimmerman to represent the BOSC at the waste water systems stakeholder homeland security meeting February 5-7, 2003.
- ? Mr. Oppelt indicated that he may want to meet with Dow staff about what they are doing to protect Dow's chemical facilities to determine if ORD's research program is on target.
- ? Dr. Schnoor suggested that BOSC form an ad hoc committee to deal with the implications of the reports on the Laboratories and Centers. He suggested that this ad hoc committee be formed at the May 2003 meeting.
- ? Dr. Schnoor will ask Drs. Windom, Henderson, and possibly Chameides to interact with the SAB concerning review of the Report on the Environment.
- ? Dr. Schnoor suggested that invitations to the May workshop on best communication practices be issued soon if EPA wants them to participate in the workshop. Mr. Moore and Dr. Preuss volunteered to help identify the individuals at the agencies who should be invited.
- ? Dr. Bostrom will distribute the letter from the Communications Subcommittee to the Laboratories and Centers.
- ? Dr. Stewart agreed to address the comments on the NERL report (i.e., rewrite the paragraph on page 16 as well as clarify the references to diversity on pages 19 and 23 of the report. She will send the revised report via e-mail to Ms. Campbell and Ms. Hamilton.
- ? Ms. Campbell will distribute to the Executive Committee members the revised NERL report for final review and approval.
- ? Ms. Campbell will prepare the transmittal letter signed by Dr. Schnoor and submit the letter, along with the final Laboratory/Center review reports to Ms. Hamilton for submission to the AA/ORD, and

the BOSC members. She also will distribute the final reports (via e-mail) to the appropriate Subcommittee members.

- ? Dr. Schnoor agreed to draft a letter report on the common themes identified in the five Laboratory/Center review reports. The letter will be sent to the Laboratories and Centers along with the reports.
- ? Dr. Preuss will ask the Laboratories and Centers to prepare a response to the BOSC review reports.
- ? Ms. Hamilton will distribute the list of action items from the meeting separately from the meeting minutes.
- ? The BOSC's future efforts will focus on: the Report on the Environment, Homeland Security Research, Environmental Measurements and Modeling, and the Mercury Multi-Year Plan.

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