

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

**BOARD OF SCIENTIFIC COUNSELORS
DRINKING WATER RESEARCH PROGRAM SUBCOMMITTEE**

**Conference Call Summary
June 6, 2005
1:00 p.m.–4:00 p.m. EDT**

Welcome

Dr. Gary Sayler, Chair, Drinking Water Research Program Subcommittee

Dr. Gary Sayler, Chair of the Board of Scientific Counselors (BOSC) Drinking Water Research Program Subcommittee, welcomed the participants to the conference call. He announced that Dr. Michael Luster would be replaced by Dr. Mary Ward, a specialist in environmental epidemiology with the National Cancer Institute.

Ms. Edith Coates introduced herself as the Designated Federal Officer (DFO) for the subcommittee's program review. She announced that several members of the public had requested participation on the conference call, including Drs. Jennie Ward Robinson and Teresa Radebaugh from the Brita Water Research Institute, who were present on the call.

Dr. Sayler announced a change in the agenda; Dr. Larry Reiter would present first. The agenda is included as Appendix A.

Drinking Water Research Program: Background for Program Review

Dr. Lawrence Reiter, Director, National Health and Environmental Effects Research Laboratory (NHEERL), U.S. Environmental Protection Agency (EPA)

Dr. Larry Reiter, Director, NHEERL, presented background information on the Office of Research and Development (ORD), EPA's strategic planning process, the issue of core and problem-driven research, and the multi-year planning process. He noted that previous BOSC subcommittees have found this kind of introduction to be effective in orienting their members.

Dr. Reiter described three major components of EPA: program offices, regional offices, and ORD. Program offices, such as the Office of Air and Radiation or the Office of Water (OW) are responsible for setting policies and regulations in response to legislative mandates developed by Congress. The 10 regional offices are involved in the implementation of regulations; they interface with the states in this effort. ORD is charged with developing the science that is needed to inform decisions, either at the level of the program offices or at the regional level. This relationship is important, because the research planning process is participatory, requiring

representation from the program offices and the regions to ensure that each program addresses the key science issues facing the regulatory program.

In 1995, ORD was reorganized along the risk assessment paradigm. Under this reorganization, three national laboratories were created: the National Exposure Research Laboratory, which is responsible for evaluating fate, transport, and exposure of organisms to environmental stressors; NHEERL, which considers health or ecological impacts from exposure to stressors; and the National Risk Management Research Laboratory, which is responsible for implementing different approaches to prevention or mitigation of risk from environmental stressors.

In addition, EPA has two national centers: the National Center for Environmental Assessment, which develops risk assessment guidelines and performs risk assessments on different high-priority chemicals, and the National Center for Environmental Research (NCER), which is the helm of the extramural grants program (i.e., the Science To Achieve Results Program). NCER is responsible for administering the grants program as well as the fellowships program.

In the last few years, EPA has added two new centers in response to the events of September 11, 2001, and the establishment of the U.S. Department of Homeland Security. EPA's National Homeland Security Research Center (NHSRC), headquartered in Cincinnati, is responsible for building decontamination and water safety. The National Center for Computational Toxicology, located in Research Triangle Park, was established to introduce genomics and computational methods into addressing some of the Agency's needs. To a certain extent, these are virtual centers. They have a core staff, but they rely on the other laboratories and centers to conduct much of the research identified by their planning process.

Office of Research and Development

ORD employs nearly 2,000 people, or approximately 10 percent of the Agency's workforce, and has an annual budget of about \$600 million. The extramural research grant program is funded at approximately \$100 million. (These numbers vary from year to year, and the workforce currently is undergoing some erosion.) ORD's work is conducted at 13 different facilities across the United States. The primary goal is to develop credible, relevant, and timely research.

The three components of ORD's mission, to: (1) conduct research that can be used by the Agency in making informed decisions; (2) provide technical advice and assistance to the program offices and the regions on scientific issues (a role that has increased significantly in the past 3 years); and (3) provide scientific leadership. ORD is in a strong position to provide scientific leadership, not only within the Agency, but also on a national and international level. ORD can provide an understanding of critical environmental issues and encourage the scientific community to align its research to address those problem areas. These three components provide the major themes for the different program reviews.

Dr. Reiter described the planning process within EPA. The process begins with the Agency's Strategic Plan. The Government Performance and Results Act (GPRA) requires each federal agency to develop a strategic plan. In its current (second) edition, EPA's Strategic Plan has defined five goals, which, generally, are linked to the statutes for which EPA has responsibility.

These goals address: (1) clean air and climate, (2) clean and safe water, (3) land preservation and restoration, (4) healthy communities and ecosystems, and (5) compliance and environmental stewardship. ORD developed its own strategic plan, based on these five goals. As ORD identifies high-priority research areas, it develops research strategies. These research strategies define the critical scientific questions facing the Agency in each area. From the research strategies, ORD develops Multi-Year Plans (MYPs). Using the MYP as a tool, ORD identifies long-term research goals and lays out a roadmap for achieving those goals. ORD engages scientific staff from the laboratories and centers to participate in the development of the MYPs. The MYPs are influenced by EPA's annual performance plan, administration guidance, and the ORD planning process. The MYP serves as a roadmap to identify research priorities over a 5-10 year period. When the MYP is complete, most of the laboratories and centers develop implementation plans. The divisions then put together their research programs and produce the appropriate research outputs, which are fed back at the various levels in this process. All of these stages include stakeholder (i.e., programmatic, regional, and external scientific community) input, and all of these steps undergo an external peer review.

Core Research and Problem-Driven Research

In 1997, the National Academy of Sciences (NAS) issued the *ROPE Report* (Committee on Research Opportunities and Priorities in EPA), which was significant in shaping ORD's research program. It described the distinction between core research and problem-driven research. Core research investigates fundamental physical, chemical, and biological processes. For example, core research might address crosscutting risk assessment/risk management uncertainties, irrespective of a particular contaminant. Problem-driven research investigates problems that have been identified already by the Agency (e.g., drinking water—specific issues in the Safe Drinking Water Act [SDWA] are driving the research agenda). In the *ROPE Report*, NAS recommended that EPA balance the two types of research somewhat equally. In reality, approximately 40 percent of EPA's resources support core research, and 60 percent support problem-driven research. Much of the core research, however, affects EPA's ability to address many specific problems facing the Agency.

The process for determining where the research should be focused, particularly problem-driven research, is a "feedback loop." It begins by identifying existing and emerging issues, then uses risk assessment to prioritize the issues and identify the largest uncertainties. It then narrows the focus based on EPA's mission needs and, finally, improves understanding and reduces uncertainties related to those issues. This new level of understanding feeds back to the first step, identifying existing and emerging issues.

Many of EPA's research areas are interrelated. For example, within the Drinking Water Research Program there is a Human Health Research Program with several components, such as the evaluation of susceptible populations. Information that becomes available in that area will affect the structuring of the program in the Drinking Water MYP. Safe pesticides/safe products is another example. As new screening and prioritization approaches are developed, they will be useful in determining the extent to which the Agency should address new entries on the Contaminant Candidate List (CCL).

The Multi-Year Planning Process

The MYP is a planning tool for identifying and addressing the Agency's highest priority science questions. It also provides information to assist and support resource decisions—not only what areas to focus on, but also where in the Agency (across the laboratories and centers) the work will be carried out. The long-term goals serve as communication tools to show how the program will produce results that are important to EPA, as well as to establish performance measures in the context of accountability. The information in the MYP, as well as the results that come from the subcommittee's review of the program, will have a significant impact on the Office of Management and Budget's (OMB) Program Assessment Rating Tool (PART) review. The MYP also is an effective tool for articulating ORD's research both inside and outside of the Agency. Currently, ORD has a total of 15 major MYPs. Eleven address problem-driven research, and four address core research.

In summary, Dr. Reiter reiterated that ORD is organized along the risk assessment/risk management paradigm. The strategic planning process identifies key research needs related to the mission of the Agency and helps structure the research programs to address the high priority needs. Research needs are met with a balance of problem-driven research and core research. The problem-driven research builds on the core research. As a result, there is a process for incorporating state-of-the-science information into the research program as specific problems are addressed. The MYP process determines the laboratory and center approach to address these needs over a 5-10 year period.

Administrative Procedures

Ms. Edith Coates, DFO, Drinking Water Research Program Subcommittee, EPA

Ms. Coates reviewed the administrative procedures related to travel and reimbursement. She will send travel vouchers to those subcommittee members who did not receive them. At the end of the face-to-face meeting, scheduled for June 21-23, 2005, in Cincinnati, she will collect receipts so that she can reimburse participants for their expenses. Drs. Raymer, Johnson, Sedlak, and Sayler were asked to keep track of the hours spent on homework. Ms. Coates will collect the timesheets at the end of the face-to-face meeting and at the next meeting, which is approximately 3 weeks after the meeting in Cincinnati.

Dr. Sedlak mentioned that Ms. Coates could find an updated address for him on his e-mail message. Ms. Coates will call Dr. Raymer about flight information. Dr. Selene Chou did not receive the latest package with the insert. Ms. Coates replied that it should arrive today. The information was not necessary for this conference call; however, anyone who has not received the package should contact Ms. Coates by e-mail.

Overview of OMB's PART and Research and Development (R&D) Criteria

Ms. Jennifer Robbins, ORD, Office of Research Management and Administration, EPA

Ms. Jennifer Robbins provided an overview of the PART process and OMB's investment criteria for R&D. She explained that although this is not the main driver of the BOSC review, the BOSC

review will be used to implement the R&D investment criteria and provide evidence for the PART review.

The PART review was developed by OMB to evaluate all federal programs. It is a questionnaire comprised of approximately 30 questions and a separate measures tab in which to include performance measures for the program.

The questions are divided into four sections: (1) purpose/design, (2) strategic planning, (3) program management, and (4) program results. OMB assigns a numeric weight based on the responses. The program is given a score that equates to a rating: effective, moderately effective, adequate, results not demonstrated, or ineffective. Results are based on annual and long-term performance goals, with an emphasis on outcomes. External program evaluations are addressed in both the strategic planning and the results section.

Each program provides OMB with a self-assessment. The PART questionnaire is completed, evidence is added, and the package is submitted to OMB for review. An OMB examiner meets with representatives from the program, asks questions, and discusses the information. The examiner is responsible for determining the program's status on each question. When OMB completes the assessment, the Agency is given an opportunity to make an appeal. Finally, the PART information is released with the President's budget the following year. OMB hopes to review 100 percent of all federal programs within 5 years.

ORD has had several PART reviews. For the fiscal year (FY) 2005 budget review, the following programs were reviewed: Particulate Matter Research, Pollution Prevention, and Ecosystem Protection. All three received a rating of "results not demonstrated." This rating was based on performance goals and measures. OMB did not consider the programs to be sufficiently outcome oriented. Section 4 of the PART questionnaire (i.e., the section on results) counts for one-half of the total score. Subsequently, ORD revised the goals and measures for these programs and, currently, is in discussion with OMB regarding them. Last year, the Endocrine Disruptors Program was reviewed in preparation for the FY 2006 budget. ORD and the Office of Prevention, Pesticides, and Toxic Substances participated in a joint PART review for this program, and received a rating of "adequate."

OMB will review two new programs this year for the FY 2007 budget, Human Health Research and Drinking Water Research. Currently, ORD and OMB are discussing which programs will be reviewed for the FY 2008 and FY 2009 budget cycles.

Dr. Sayler commented that the PART review for the Drinking Water Research Program already has started. Ms. Robbins added that ORD sent information to the examiner and has met with him. Currently, ORD is encouraging him to attend the Drinking Water Research Program review.

Dr. Sayler asked how the BOSC report will be used by ORD and OMB. Ms. Robbins explained that it will be included as evidence to OMB and referred to in questions, where relevant, in the submission to OMB. She added that the report will not be available, even in draft form, in time for the PART review. This is, in part, why ORD is encouraging the examiner to attend the

review. Dr. Saylor commented that the subcommittee plans to present the draft of this report at the next BOSC Executive Committee meeting in early September.

A participant commented that he had read the PART review of the Endocrine Disruptors Research Program. The review sounded very positive, but it was rated only “adequate.” He asked whether the subcommittee should assume that criticisms of the program could cause a problem in the PART process. Ms. Robbins replied that he should not be concerned with that possibility; OMB is looking for honest feedback.

R&D Criteria

The Office of Science Technology and Policy and OMB developed the R&D criteria as part of the President’s Management Agenda, which was issued in 2000. The R&D criteria were issued approximately 1 year later as a means of evaluating federal research programs. The elements of the R&D criteria have been incorporated into the PART reviews as specific R&D questions. The criteria include quality, relevance, and performance. In this context, relevance refers to national priorities, agency missions, and customer needs; quality means that the programs must maximize the quality of the research in which they invest; and performance refers to setting and achieving appropriate outcome goals and measures.

The criteria for relevance include the following:

- ✧ The purpose of the research program should be clear.
- ✧ The program responds to a specific existing environmental problem, relevant to EPA’s mission, national priorities, and primary clients.
- ✧ The program demonstrates an outcome-oriented design.
- ✧ The program’s benefits (e.g., contribution to outcomes) are unique or extend beyond similar government or private-sector contributions; program coordination is effective in minimizing or avoiding duplication.
- ✧ There are a small number of performance goals focused on scientific progress to answer key questions (or reduce uncertainty) linked to the program’s outcomes.

The criteria for quality primarily are concerned with how funds are allocated to ensure quality in the grants program. These criteria require that:

- ✧ Merit-based procedures are used to ensure the program’s scientific quality and leadership. The program compares favorably to similar programs (i.e., in other agencies).
- ✧ When the program allocates funds extramurally (e.g., through assistance mechanisms) it ensures merit-based competition, relevance to the program’s objectives, and independent review by subject matter experts.

- ✧ When the program allocates funds non-competitively (e.g., to federal laboratories), appropriate merit-based procedures are used.
- ✧ The program may conduct benchmarking of scientific leadership and other factors as one means of assessing program quality.

The criteria for performance include the following:

- ✧ The program identifies relevant inputs (e.g., stakeholder guidance, human capital, research infrastructure, and information technology) to ensure that implementation results in the intended research activities and outputs.
- ✧ Performance goals should serve to answer key research questions and track how the program will improve scientific understanding.
- ✧ The program should assess the research progress and priorities periodically.
- ✧ The program should demonstrate that it meets performance goals.
- ✧ The program should obtain client feedback.

Dr. Sayler asked Ms. Robbins to comment on the difference between outputs and outcomes. She explained that an output is a tangible product, generally an item such as a model or a paper or report. An outcome is a desired state that arises from the program's efforts. OMB describes an outcome as being outside the control of the program. In the case of the drinking water program, the long-term outcome would be that the water is clean and safe to drink. That is farther in the future than ORD is willing to set goals for in a research program. A short-term outcome would be that OW uses ORD's products to inform its regulations, thereby leading to cleaner and safer water.

Each of the three criteria (quality, relevance, and performance) requires prospective and retrospective review by independent experts. The BOSC review contributes prospectively to ensure that the plans are appropriate and retrospectively to assess the level of performance and the effectiveness of the program management. Ms. Robbins added that a 5-page document related to criteria was provided separately to the subcommittee members.

Ms. Robbins presented a diagram that illustrated the elements of effective program design. Program design begins at the right-hand side of the diagram, with the ultimate outcomes in mind. Each step in the process moves towards the left, considering: the clients, the clients' needs, the activities required to produce the outputs, and the resources required to produce the outputs. The evidence that comes out of these stages is provided to OMB and others to illustrate what has been achieved, to indicate whether or not client needs are being met, and to provide data to demonstrate performance.

Ms. Robbins explained that there are different spheres of influence affecting research progress and results. Program Managers have direct control over how resources are spent, activities are

managed, and outputs are produced. Program Managers also have some influence over whether the clients use the products. For example, they can perform such activities as technology transfer, outreach, and client interaction (e.g., to determine priorities). EPA, however, has only an indirect influence over what happens when the products are used. For that reason, the programs have focused their outcome goals at the short-term outcome level, which is client behavior—whether clients are using the products, how they are using the products, and what their feedback is on the products.

Ms. Robbins showed how the elements of the PART review align with the program design model. PART Section 1, Program Purpose and Design, examines efforts on the right side of the model to ensure that the program is focused on the appropriate outcomes. Section 2, Strategic Planning, determines whether the program is planned appropriately. Section 3, Program Management, addresses activities on the left-hand side of the model to evaluate program management. Section 4, Program Results, evaluates goals and achievement.

Dr. Sayler added that the PART process is a major driver, and that the subcommittee will make an important contribution to the overall drinking water program with this review. It is helpful, therefore, to understand how the PART process works.

Program Logic and Goals

Dr. Gregory Sayles, Acting National Program Director, Drinking Water Research Program Review

Before beginning his presentation, Dr. Gregory Sayles discussed materials for the subcommittee members' binders. He noted that there is a new page with contact information. The agenda is the same, but the dates have changed. His presentation, Program Logic and Goals, is summarized in a new section in the binder. In response to an earlier question about the percentage of resources allocated for extramural grants, Dr. Sayles noted that the information is included in a chart. Also included is a bibliometric analysis of the impact of their outputs, particularly the peer review journal articles, in terms of the number of citations, where they are published, and the ranking of the journals. *The Proceedings of the U.S. EPA's Research on Microorganisms in Drinking Water Workshop, 2003*, also is included.

A few more items will be provided to the subcommittee, including: a list of scientific leadership and awards, a list of the kinds of technical assistance provided to clients, and a summary (under development) of the impacts of the program. Dr. Sayles added that the impacts of the program on their clients' work is shown throughout the binder and will be shown throughout the poster sessions. Currently, they are working to compile it into one location.

Dr. Sayles explained that the purpose of his presentation was to provide some clarity for the materials that were provided to the subcommittee, particularly information to help the subcommittee answer the first two charge questions, which are related to program relevance and design. His presentation also showed how the program design process that Ms. Robbins described applies to drinking water.

Safe Water Drinking Act

The original SDWA was passed in 1974 and was amended in 1986 and 1996. In 1996, Congress added two major provisions for EPA: (1) the periodic review of contaminants that currently are regulated (also known as the Six-Year Review Process), and (2) a process for considering currently unregulated contaminants (also known as the CCL process).

The SDWA requires that the Agency use “sound and objective science” to carry out its missions. In addition, specific provisions are included for EPA to conduct drinking water research in the following areas:

- ✧ Microbial pathogens and disinfectants and disinfection byproducts (M/DBP) rules
- ✧ Health effects of *Cryptosporidium*, disinfection byproducts (DBPs), and arsenic
- ✧ Subpopulations at greater risk
- ✧ Biological mechanisms
- ✧ Waterborne disease occurrence
- ✧ Sulfate and radon
- ✧ Research to support the CCL.

SDWA Six-Year Review

Currently, there are 91 existing regulated contaminants (including chemicals and microbes). The next major Six-Year Reviews will occur in 2008 and 2014. When OW considers existing contaminants in the Six-Year Review process, it decides whether to keep or change the contaminants’ regulatory status. In preparing to do so, OW asks ORD to perform specific work for certain regulated chemicals. This could involve health effects work, better detection methods, a different type of risk assessment, or new considerations for treatment or management of residuals. This is how ORD’s work feeds into the Six-Year Review.

Contaminant Candidate List

The CCL process (i.e., the process for bringing new chemicals and microbes into the regulations) involves three steps. The first step is the listing process—selecting a particular contaminant for further consideration. Once on the list, the next step is to determine whether the contaminant should be regulated. OW has a detailed process for making that determination, and ORD’s research informs that decision. When it is decided that a contaminant should be regulated, the next step is to implement the new regulation. There are research requirements involved in that step as well.

For the first step, deciding whether to consider a contaminant, the Drinking Water Research Program is involved with innovative methods for listing, computational methods for prioritization, and research into health effects. For step two, regulatory determination, ORD conducts work in the area of health effects, risk assessments, and treatment studies. Step three, implementation of the regulation, can involve additional work on monitoring methods and treatment approaches.

Drinking Water Research Program Logic Model

The logic model articulates the purpose of the program in the context of EPA's strategic goals. Dr. Sayles presented a diagram that was developed specifically for the Drinking Water Research Program. Starting at the right side, the long-term goal is to keep drinking water safe and improve public health. Working toward the left of the diagram, the preceding step, the environmental outcome, is to reduce or eliminate contaminants in drinking water, which is EPA's GPRA Objective 2.1. Preceding the environmental outcome are intermediate outcomes, in which regions, states, and local water authorities reduce or eliminate emissions of the contaminants. Short-term outcomes leading to the intermediate outcomes include OW using new scientific knowledge, data, and approaches that were developed by ORD to inform decisions under the SWDA for regulated and unregulated contaminants. The next box identifies OW as the primary client for the Drinking Water Research Program. The general drinking water research community is a secondary client, as are EPA's regional offices and state and local water authorities. The next box contains outputs, such as research contributions and publications, for the intended clients. Activities, such as intramural and extramural research, lead to these outputs. The final box identifies the resources necessary to conduct the program.

The purpose of this logic diagram is to show how the Drinking Water Research Program fits into the greater strategy of protecting drinking water in the United States. According to new OMB guidance, long-term goals cannot be stated as outputs (i.e., products such as reports). Goals must be stated as outcomes (e.g., ways in which OW uses ORD's research products to meet SDWA requirements). OMB guidance also requires that long-term goals be measurable and support the mission of ORD and the Agency. ORD will be accountable for OW using ORD's research results.

In the past 6 to 8 months, the Drinking Water Research Program has revised its long-term goals to be more outcome-oriented. There are two revised long-term goals, both designed around the two provisions in the SDWA—the Six-Year Review and the CCL process. The first long-term goal will be measured by whether OW uses ORD's new scientific data, knowledge, and approaches in their Six-Year Review decisions. ORD has proposed that this be evaluated qualitatively by an external, expert review panel. The panel will determine the level of progress toward this goal as “excellent,” “adequate,” or “inadequate.” The determination will be made after the Six-Year Reviews in 2008 and 2014, according to whether OW used ORD's work in those reviews.

The second long-term goal is the use of ORD's relevant, timely, and leading-edge data, tools, and technologies by OW in its CCL decisions. A determination of “excellent,” “adequate,” or

“inadequate” will be made by an external, expert review, tied into the CCL dates for 2008 and 2011. These goals are proposed for the subcommittee’s review as well as OMB’s feedback.

Drinking Water MYP

The Drinking Water MYP is the key document used to plan research and products. It is developed with ORD’s clients, particularly OW and the regions. The MYP is scheduled for revision this fall, with input from the subcommittee, OMB, and the Science Advisory Board’s (SAB) 2004 review of the MYP.

In the 2003 MYP, Long-Term Goal 1 addressed regulated contaminants, including arsenic, DBPs, and streamwater/groundwater pathogens. Long-Term Goal 2 was related to CCL chemicals and pathogens. Long-Term Goal 3 included distribution systems and source water protection as emerging areas in the research program. In the process of developing new, measurable MYP goals, the distribution systems work was moved to Long-Term Goal 1, and source water protection work was moved to Long-Term Goal 2. The planning for these areas is ongoing; when the new MYP is developed, the work will be divided more precisely between Long-Term Goals 1 and 2.

Dr. David Sedlak asked whether tracking the long-term goals to outcomes has limited the kind of research to be conducted. Are there ways to be more proactive in anticipating future regulations or threats to drinking water that would affect the long-term goal, but do not fit cleanly with SDWA or Long-Term Goals 1 and 2? Dr. Sayles explained that developing long-term goals is a balance between understanding the breadth of the kind of research that needs to be carried out (i.e., both anticipatory and specific regulatory needs) and realizing the need to be accountable. Consequently, when new issues come along, they will have to fit into the framework. Long-Term Goal 2 likely will be the more future-oriented goal. It includes chemicals that are on the CCL, as well as work on contaminants and other issues that will influence the CCL. Dr. Sayles added that he welcomed input from the subcommittee on this issue.

Dr. Sayler commented that the Drinking Water Research Program has been pigeonholed as problem-driven research. He asked whether fundamental research is secondary to the goals of the program, and if the program has the flexibility to move into areas where future activity might be anticipated. Dr. Sayles explained that there are core research programs in ORD that can address the fundamental and/or anticipatory activities. There are mechanisms and planning efforts to ensure that information is cross-linked with the drinking water work. Basically, however, the Drinking Water Research Program was established to provide research information for OW and other clients to use in carrying out their missions.

Dr. Sayler asked if Dr. Sayles anticipates an interface between the Drinking Water Research Program and EPA’s Homeland Security Research Program. He added that drinking water and homeland security seem to have some natural interaction, but considering the purpose for the Drinking Water Research Program, there might not be sufficient latitude to work in that area. Dr. Sayles answered that ORD’s NHSRC has asked his group to work on some areas that have overlapping uses (e.g., some early warning approaches for source water and distribution systems). Integrating these programs is an emerging subject to be addressed in the next MYP.

NHSRC has its own, well established, Water Security Division now, with funding. Sharing resources would be beneficial, and there are good examples in which that has worked. One of the posters will address this issue.

Dr. Sayler added that if the work is used by NHSRC (i.e., an outcome), it makes the programmatic relevance quite positive. Dr. Sayles agreed and added that one of NHSRC's clients is the water security group in OW.

Dr. Chou commented that the topic of source water protection belongs under Long-Term Goal 1 as well as Long-Term Goal 2. Dr. Sayles replied that they did not intend to place all of the source water protection work under Long-Term Goal 2 or all of the distribution systems work under Long-Term Goal 1. They are in the process of aligning the work, and the programs are placed under those goals temporarily. The work will be allocated more appropriately in the next few months.

Dr. Sayler asked if the SAB review of the MYP would be available for the subcommittee to review before the next meeting. Dr. Sayles replied that he would like to have it available, but he did not know the exact procedures. Dr. Sayler suggested that Dr. Sayles investigate this issue. Dr. Sayles agreed to do so, adding that he would prefer that the subcommittee focus on other materials, given that the SAB has reviewed the MYP already.

Dr. Sedlak asked about the percentage of effort dedicated to original research versus translating research into products, and whether the result of the evaluation changes the way resources are allocated. Dr. Sayles answered that both kinds of activities occur, but he does not have data to indicate how it is broken down.

Dr. Sedlak noted that EPA is one of many organizations that conducts original scientific research. He added that extensive focus on client needs could result in less focus on original research and less ability to compete at that level. He asked whether the subcommittee should consider this as part of their charge. Dr. Sayler replied that the charge cannot be changed, but the subcommittee can keep this in mind as they review the program. Dr. Sayles added that ORD is the primary resource for OW in both synthesis work and technical guidance. The actual research is oriented toward OW's needs, and the Drinking Water MYP is developed jointly with OW.

Dr. Barbara Walton commented that the general rule for the drinking water program at NHEERL is that Principal Investigators spend 20 percent of their time translating scientific findings or responding to OW on technical issues. Approximately 80 percent of their time is devoted to primary research.

Dr. Sayler reiterated that the ORD extramural budget is approximately \$100 million. He asked what percentage of that amount supports drinking water research. Dr. Sayles explained that the total funding for the Drinking Water Research Program is approximately \$40 million per year. The funding for the grants program is approximately \$4 million, or 10 percent. That amount does not include administrative support for the grants program.

Dr. Saylor commented that the \$4 million set aside for drinking water research grants is approximately 4 percent of the total amount of extramural grant funding. The \$40 million for ORD's Drinking Water Research Program is less than 10 percent of the total ORD budget. Dr. Sayles noted that the \$100 million targeted for the extramural grants program has eroded in the past several years.

Questions and Discussion of Charge

Dr. Gary Saylor, Chair, Drinking Water Research Program Subcommittee

Dr. Saylor asked if the subcommittee had any questions. He noted that the charge questions focus specifically on the PART issues (i.e., the programmatic relevance and the issue of outcomes rather than outputs) and added that the PART review appeared to be a significant driver. The subcommittee members had no questions.

Dr. Saylor reviewed the writing assignments. He explained that the report would focus on issues of relevance, quality, and performance. At the previous meeting, an outline was discussed and lead writers for each section were assigned. Dr. Saylor reiterated the report sections and lead writers:

Executive Summary: Drs. Saylor and Johnson
Long-Term Goal 1: Dr. Sedlak (Dr. Chou assisting)
Long-Term Goal 2: Dr. Ward (Dr. Raymer assisting)
Leadership: Dr. Johnson (Dr. Sedlak assisting)
Program Resources: Dr. Chou (Dr. Saylor assisting)
Communication and Coordination: All subcommittee members

The sections of the report that discuss Long-Term Goals 1 and 2 will be organized with an introduction, a focus on the program design, the relevance (including the clients), progress, quality, strengths and challenges, and some discussion of resource availability or adequacy. The subcommittee will work collectively on the Communication and Coordination section. This topic has become important to the BOSC, because the Agency is increasing its efforts to communicate its work to clients and the public. Dr. Saylor noted that most of the writing would be done during the next meeting.

Dr. Sedlak asked if Dr. Saylor was comfortable with the BOSC Endocrine Disruptor Review Report. Dr. Saylor answered that he was comfortable with it, but the BOSC still is reviewing the structure of the report. They have not come to a final conclusion about what a BOSC program review report should look like, but every time one is finished, it evolves closer to a final product, and the Endocrine Disruptor Report read well.

Dr. Saylor stated that the BOSC Executive Committee would like to see a draft of this report at its meeting in early September. The subcommittee's goal is to finish a rough draft of the report by the end of the meeting in Cincinnati on June 23. More communication after the meeting will be necessary to complete the draft. Ideally, the subcommittee members should agree on the final document; however, there will be room in the report to discuss any areas of disagreement.

Dr. Sayler stressed the importance of the poster sessions at the meeting in Cincinnati. The sessions are expected not only to provide technical information, but also to place EPA's Drinking Water Research Program in the larger context, including long-term goals, international activities, and ways that the outcomes might be used.

Dr. Sayler reviewed the assignments for attending the poster sessions. Everyone should try to see as many posters as possible, but the goal with these specific assignments is to have a subcommittee member knowledgeable on each topic. The poster assignments were as follows:

Arsenic: Drs. Chou and Sayler
Surface Water/Groundwater Pathogens: Drs. Sedlak and Ward
DBPs: Drs. Raymer and Ward
Distribution Systems: Drs. Johnson and Sedlak
Homeland Security: All subcommittee members
Long-Term Goal 2, CCL: Drs. Ward and Raymer
Innovative Methods: Drs. Chou and Sayler
Source Water Protection: Drs. Sedlak and Johnson

Dr. Sayler reminded the subcommittee members that they could communicate with each other individually, but they could not meet as a group to conduct subcommittee work. Federal Advisory Committee Act guidelines require the process to be open and public.

Ms. Coates confirmed that the Office of Science Policy will provide a contractor to take notes at the next meeting, and that she also will attend. Dr. Sayler reminded the members to ask him or Ms. Coates for any additional information they might need. Ms. Coates asked again if any members of the public would like to identify themselves or comment. The two participants from Brita Water had no comments. Ms. Coates thanked them for joining the discussion.

Dr. Sayler thanked the members of the subcommittee for their participation and added that he would send the writing assignments to them by e-mail. The meeting was adjourned at 3:00 p.m.

Action Items

- ✧ Dr. Sayles will ascertain whether the SAB review of the Drinking Water MYP is available for distribution to the subcommittee members.
- ✧ Ms. Coates will send travel vouchers to subcommittee members who need them.
- ✧ Ms. Coates will collect receipts and process reimbursements for participants' expenses.
- ✧ Drs. Raymer, Johnson, Sedlak, and Sayler will track the hours spent on homework and submit timesheets at the end of the next two meetings.
- ✧ Ms. Coates will contact Dr. Raymer with flight information.
- ✧ Dr. Sayler will send the writing assignments to subcommittee members by e-mail.

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APPENDIX A

**Teleconference Agenda
June 6, 2005
1:00 p.m.–4:00 p.m. EDT**

**US EPA Board of Scientific Counselors
Drinking Water Subcommittee
Draft Meeting Agenda for
June 6, 2005
1:00 - 4:00 PM EST**

**US EPA Board of Scientific Counselors
Drinking Water Subcommittee**

**Conference Call
Participation by Teleconference Only**

June 6, 2005

1:00 – 1:10 p.m.	Welcome	Dr. Gary Saylor Chair, Drinking Water Subcommittee Dr. Jim Johnson Vice-Chair, Drinking Water Subcommittee
1:10 – 1:30 p.m.	Administrative Procedures Brief review of Administrative Procedures Receipts, Time Sheets Logistics for Face-to-Face Meeting	Edie Coates (EPA) DFO, Drinking Water Subcommittee
1:30 – 1:45 p.m.	EPA Programmatic Issues OMB PART Review	Jennifer Robbins (EPA) Program Analyst, ORD/ORMA
1:45 – 2:15 p.m.	EPA's DW Research Program: Introduction EPA/ORD Organizational Structure Strategic (Multiyear) Planning:	Dr. Larry Reiter (EPA) Director, National Health and Environmental Effects Research Laboratory
2:15 – 2:45 p.m.	Overview of DW Program Logic, Goals	Dr. Gregory Sayles, Acting National Program Director for DW Research
2:45 – 3:15 p.m.	Questions and Discussion of Charge	Dr. Gary Saylor Chair, Drinking Water Subcommittee
3:15 – 3:45	Review of Writing Assignments Review of Poster Review Process Identification of Additional Information	Dr. Gary Saylor Chair, Drinking Water Subcommittee

3:45 – 4:00 p.m.

Public Comment

4:00 p.m.

Adjourn
