

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

**BOARD OF SCIENTIFIC COUNSELORS
GLOBAL CHANGE RESEARCH SUBCOMMITTEE**

**Conference Call Summary
December 6, 2005
11:00 a.m.–12:30 p.m. EST**

Discussion of the Draft Report

Milton Russell, Ph.D., Chair, Global Change Subcommittee

Dr. Russell asked the Subcommittee members if Chapter 2 of the draft report reflected their intended message. Dr. Coutant replied that it did convey the intended message and he appreciated the positive tone, noting that the advice and critique were secondary to the positive conclusions.

Dr. Balbus agreed that the report was excellent and captured the Subcommittee's discussions very well. He mentioned a sentence on page 7: "The Subcommittee found that the mission of the program has changed over recent years and that the direction of the program has appropriately shifted to meet that new mission." Dr. Balbus commented that this sentence makes the program sound somewhat directionless. The Global Change Research Program is embedded in a larger, interagency program that controls to some extent the overall mission of the program. The intended message is that external factors have changed the program's mission. Dr. Coutant suggested stating that the national context has changed. Dr. Russell proposed using the word "evolved" rather than "changed," as the text explains that this is a natural and appropriate evolution and that the change is well designed. Dr. Duke suggested that they include the context of the program within the national Climate Change Science Program (CCSP), which provides some of that external direction. Dr. Wilkinson added that part of the mission is to respond to White House and other policy mandates, which the program has done. The mission is evolving as that direction changes. Dr. Russell stated that he and Dr. Duke will revise that sentence. Ms. Nierenberg and Dr. Reck agreed that, in general, Chapter 2 conveyed the Subcommittee's intended message very effectively.

Dr. Russell asked for specific suggestions regarding the report. Dr. Wilkinson commented that the words "partial disconnect" on page 8 conveyed the wrong message. He suggested using "consistent with" or "a complementary role to ORD's [Office of Research and Development's] programmatic goals." Dr. Russell replied that the previous paragraph argues that there is a disconnect with ORD's programmatic goals and states that the major thrust for the U.S. Environmental Protection Agency (EPA) and ORD is regulatory support. That creates tension for a program such as the Global Change Research Program and, therefore, generates difficulties that the program may have encountered and overcome. Ms. Nierenberg asked for Dr. Russell to clarify his comment. Dr. Russell explained that the previous paragraph states that EPA's basic

mission is to provide scientific support for its environmental, largely regulatory agenda; that is the way the Agency and the laboratories are organized and the programs are focused. The Global Change Research Program had to move people from either a science-driven or a regulatory-driven culture into a pragmatic, problem-solving culture. Dr. Russell thought that the paragraph and the Subcommittee's discussion argued that the program is very consistent with ORD's scientific culture in terms of scientific quality and it is performing the right work in the right way, even though it is different from most of the programs in ORD. Dr. Wilkinson agreed with Dr. Russell's message, but cautioned that it might be misinterpreted. Ms. Nierenberg suggested rearranging the order of the words, and Dr. Coutant suggested using the word "divergence" to strengthen the connection between the two paragraphs. Dr. Russell explained that he included the issue of divergence so that the Board of Scientific Counselors (BOSC) Executive Committee and others, who are accustomed to the more pure science portions of ORD, would understand that this program is different, has a different culture, and is meeting a different social need.

Dr. Wilkinson asked about a sentence in the first paragraph on page 11 that states "...the program must be driven not by scientific logic or curiosity...." Because this statement could be misinterpreted, he suggested deleting those words. Dr. Russell agreed to make the change.

Dr. Wilkinson mentioned the text on page 14, "...while curiosity-driven science may depend on the hope system...." He noted that EPA staff had received unwarranted criticism in this context, and he cautioned that this comment might be perceived negatively, although he agreed with the point being made. Dr. Russell replied that he thought "curiosity-driven science depends on hope" was correct, but agreed to rewrite the sentence or eliminate it to avoid potential negative interpretations.

Dr. Balbus commented that the washing machine analogy did not enhance understanding of stakeholder engagement and that the paragraph worked well without it. Dr. Coutant replied that he thought it was helpful. Dr. Russell noted that such analogies have been useful in other contexts, but that he and Dr. Duke will reconsider it.

Dr. Russell asked if any conclusions, themes, or issues from the focus chapters were missing in Chapter 2. Dr. Coutant asked if Dr. Russell had reviewed the recommendations in each of the focus chapters to ensure they all were captured in the front part of the report. Dr. Russell replied that he had not done so systematically but he had read through and thought about the focus chapters. He asked if a list of recommendations was needed in Chapter 2 if they were going to be included in the executive summary. Dr. Russell explained that the recommendations in the focus chapters generally were appropriate to the specific focus chapters, although some might be universal. Chapter 2 provided the Subcommittee's overall view of the program, so every recommendation was not included. Dr. Coutant noted that certain recommendations had been highlighted as possible candidates to be brought forward. Dr. Wilkinson agreed that those recommendations should be included in Chapter 2.

Dr. Wilkinson commented that two levels of synergy seemed to emerge. One is synergy between research efforts in the different focus areas, where much good work is benefiting goals in multiple areas. The other is between EPA's core mission (i.e., regulation and maintaining

environmental quality) and the program's global change research effort. He suggested including a positive comment about how these synergies enhance the value of the overall effort.

Ms. Nierenberg suggested another synergy between the focus areas and the place-based work, including how the focus areas have used place-based research and how they should reconsider this type of research as they anticipate the next phase of the regional assessment. She added that this idea might be related to a recommendation that EPA take a more active role with other agencies individually and with the CCSP as a whole. Dr. Russell commented that these were excellent ideas. Dr. Duke agreed and added that the last sentence in the place-based section captured the core of the discussion about the place-based work. This could be combined with Ms. Nierenberg's comments about the relationship with the more formalized regional assessments. Dr. Russell replied that it would be useful to point out the synergies and that he would add a few paragraphs along those lines.

Dr. Balbus mentioned the issue of breadth versus depth. The overwhelming breadth and the limited resources are mentioned in several places in the draft report, including a statement that the program's breadth made it difficult for the Subcommittee to complete a rigorous and thorough review. The report, however, does not address this issue (i.e., the tension between covering numerous areas and providing sufficient depth in any one area) as an overarching theme. Dr. Balbus added that the program seems to have established a good balance.

Dr. Coutant remarked that, in the ecosystem focus area, the program selected a few pursuits from an extensive array of possibilities. The choices seemed to be good, and perhaps a statement to that effect could be added. Dr. Russell replied that Dr. Balbus's point was that a choice had to be made between doing many things and doing a few things well. He added that each Subcommittee member has commented about the small budget for each area, and yet the program has achieved results despite those limited resources. The question is whether it is appropriate for the program to continue to attempt to be as many things to as many people as it has been. Dr. Coutant agreed and explained that in the ecosystems area, the program decided to focus in depth on a few things. Dr. Reck added that the resources were insufficient to address the issue of climate variability, which can be very different at one point as opposed to an entire region and can have profound implications.

Dr. Russell asked if the issue of breadth versus depth should be included in the report and, if so, how it should be handled. Ms. Nierenberg replied that the program has used breadth very creatively to identify potential directions to pursue. EPA's broad perspective could contribute in this regard, both within the Agency and in an interagency context. There also might be a way to frame the issue of breadth in a regional context. Dr. Wilkinson noted that this is a common problem for research programs and recommended adding a positive comment about the excellent work and the appropriate balance being achieved with limited resources. Dr. Balbus reiterated Ms. Nierenberg's point about the relationship between breadth and depth and the program's evolution over time. In a setting where there is much uncertainty and significant discovery to be made, a broad approach is appropriate at first. Next, however, the program should determine which areas to research deeply. The program has taken this approach in the health focus area. Dr. Russell commented that the report should not add anything unless there is something unique to say. The issue of breadth versus depth is a constant in research, but a statement that the program is working broadly toward depth is worth including. Dr. Reck suggested adding that the

extramural funding was a real advantage. Drs. Russell and Duke agreed to work on this issue and invited additional suggestions after the conference call.

Dr. Russell asked if there were any inconsistencies between Chapter 2 and the focus chapters that should be considered. Hearing no responses, he asked if there were any passages that were likely to be misunderstood. Ms. Nierenberg asked about a recommendation in the ecosystems chapter. Dr. Coutant explained that Ms. Nierenberg was referring to recommendation 4 on page 28, in which better integration between the place-based efforts and the other focus areas was encouraged. He agreed to revise the wording to make it clearer.

Dr. Russell asked whether the focus chapters should be edited to make them consistent in style and tone. Dr. Reck asked if resources were available to have this done by a professional editor. Dr. Russell explained that it might be possible to have an editor assist with issues such as format, but a substantive and structural edit would require someone who is knowledgeable about the topics and who has been part of the Subcommittee proceedings. It also would require much more work and significant oversight by the Subcommittee. Dr. Wilkinson added that the audience for this report is ORD, which likely would consider content to be more important than a highly polished document. Dr. Russell recommended against spending time or money for this type of edit.

Dr. Russell called for discussion of the individual focus chapters, beginning with Dr. Balbus on the health chapter, and added that he was very impressed with each of the focus chapters. Dr. Balbus agreed that the chapters were well written and showed a great deal of thoughtful attention. He explained that he had received and incorporated suggestions from Ms. Nierenberg. He thought the recommendations section, particularly the future directions, was a little weak. He planned to improve that section and add information about the breadth versus depth question and its evolution and the use of intramural versus extramural resources. He did not have any other significant changes to make.

Dr. Russell asked Dr. Coutant to discuss the ecosystems chapter, which he noted was interesting because of the synergy with the water quality chapter. Dr. Coutant reiterated that he wanted to soften the recommendation about the place-based effort. He also wanted to add a comment about a *Science* article, "Ecosystem Service, Supply, and Vulnerability to Global Change in Europe," which provided a broad overview of potential climate change consequences for Europe in the next century. It was written by several authors and addresses agriculture, water, land use, and other topics. Other than these additions and some further editing, Dr. Coutant was satisfied with the ecosystems chapter.

Dr. Duke replied that he was uncomfortable with the response to the question on page 31, "Have the Global Program and its scientists played leadership roles?" The assertion that prominent leadership is not advantageous under current federal policy reads as a political statement. Dr. Coutant replied that he welcomed Dr. Duke's guidance; comments at the face-to-face meeting indicated that the scientists wanted to work without drawing attention to themselves. Dr. Coutant would like to show that these are prominent leaders in their field, but they seemed to be cautious about standing out too strongly under the current situation. Dr. Duke agreed with the

concept, but remained uncomfortable with the wording. Dr. Russell requested that Drs. Duke and Coutant work together to revise the language.

Dr. Wilkinson stated that he planned to rearrange some text on page 35 of the water quality chapter. He planned to move up number 3 and rewrite sections 1 through 4. He did not have any content changes; his intent was to revise the language to sound more positive. Dr. Duke commented that the reordering would address his concern about some slight redundancies.

Dr. Reck remarked that she did not have any major revisions to the air quality chapter, and she was pleased with the way that the report fit together. Dr. Balbus added that the content was very good, but several sections, particularly at the bottom of page 41, should be expanded. He agreed to provide a thorough review of the chapter in the next few days. Dr. Coutant mentioned the reference to U.S. Department of Energy (DOE) national laboratories. He learned that the national laboratories were not permitted to be funded by this EPA program. He also discovered that the Pacific Northwest National Laboratory (PNNL) has two contracts with DOE; one is to conduct the government work there, and the other is to conduct Battelle's work onsite. It might be worthwhile to determine whether this work was done through Battelle or PNNL. Dr. Russell thought that the connection between paragraphs might infer an improper association. He believed that Dr. Coutant was correct about the use of Science To Achieve Results (STAR) grant funds and that collaborative work conducted at DOE laboratories contributed to the understanding of the science in these areas. Dr. Gamble agreed to obtain a definitive statement from the laboratories about this issue. Dr. Reck emphasized that clarification would be important both for EPA and DOE. She added that these activities play an essential role in the national global change research effort. It is important to show that EPA is not working alone; it is integrating with activities at other agencies, and this is a very positive point to make.

Dr. Russell remarked that Ms. Nierenberg's chapter on place-based and regional work was one of the most difficult to develop, and he asked for her comments. Ms. Nierenberg explained that it was lengthy because of the history involved and the fact that there are different, very diverse, regional projects. She would like to shorten the chapter. She added that most of her concerns had been addressed, particularly the issue of adaptation being only in a long-term sense. She also had wanted to clarify a concern about how the program is showing real connection to current decisions; however, that issue was addressed in the front and back chapters. Ms. Nierenberg noted that, in the "wisdom" chapter, Dr. Russell added text about options for framing the issue of a separate investment in a regional program. He achieved a difficult balance in providing guidance for reframing the issue without doing the job for them. She would like to edit her chapter to reflect some of this guidance. Dr. Wilkinson complimented Ms. Nierenberg for the way she handled a challenging and complex chapter. He suggested that she did not need to edit the chapter simply to reduce the length; it was more important to maintain the content. He explained that this was delicate because the experience in this area has been very instructive, and the Subcommittee had different ideas about how to move forward, which Ms. Nierenberg captured very well. Ms. Nierenberg replied that the chapter benefited from discussions with Drs. Wilkinson and Coutant.

Dr. Russell asked if the Subcommittee members were in agreement with the substance, presentation, and comments about the report so far. Dr. Reck requested an opportunity to review

the executive summary. Dr. Russell replied that the Subcommittee members will have a chance to review the executive summary, which he planned to distribute by e-mail by December 14. This will allow Subcommittee members a few days to review it and respond with comments. All of the Subcommittee members agreed with the substance of the report.

Dr. Russell stated that he and Dr. Duke will consult with each other and check with Dr. Gamble about some external constraints. They will send an e-mail to the Subcommittee members outlining the next steps, which will be consistent with what was discussed earlier in this conference call. Dr. Duke explained that his comments might be delayed because of other commitments. Dr. Russell suggested that the Subcommittee members contact to him and Dr. Duke about any problems they might have in completing the next steps.

Dr. Gamble asked if there were any members of the public who wanted to make a statement. No members of the public asked to speak.

Dr. Gamble thanked the Subcommittee members for their dedication and expressed her pleasure in working with them. She also thanked the Subcommittee members on behalf of EPA and complimented them for their expertise and excellent work. She complimented Dr. Russell for his leadership. Dr. Coutant complimented Dr. Gamble for her excellent work as the Designated Federal Officer. Dr. Russell added that this has been an educational and enjoyable effort. He hoped that it will be valuable for the program and EPA. Dr. Russell explained that the Subcommittee members will have a chance to review the final draft report before it is submitted to the BOSC Executive Committee. The final report, however, will be issued to ORD by the BOSC Executive Committee. Dr. Russell adjourned the conference call at 12:30 p.m.

Action Items

- ✧ Drs. Russell and Duke will revise the sentence, “The Subcommittee found that the mission of the program has changed over recent years and that the direction of the program has appropriately shifted to meet that new mission.”
- ✧ Dr. Russell will delete the sentence on page 11 that states “...the program must be driven not by scientific logic or curiosity....”
- ✧ Dr. Russell will rewrite the text on page 14, “...while curiosity-driven science may depend on the hope system...” to avoid a potential negative interpretation.
- ✧ Drs. Russell and Duke will reconsider the use of the washing machine analogy.
- ✧ Dr. Russell will include in Chapter 2 those recommendations that had been highlighted as possible candidates to be brought forward in the report.
- ✧ Dr. Russell will write a few paragraphs about synergies between: (1) research efforts in the different focus areas, (2) EPA’s core mission and the program’s global change research effort, (3) focus areas and the place-based work.
- ✧ Drs. Russell and Duke will develop text about how the program is using a broad approach to work toward depth in selected areas and mention the benefits of using extramural funding.
- ✧ Dr. Coutant will clarify and soften recommendation 4 on page 28. He also will add a comment about the *Science* article and edit his section further.
- ✧ Dr. Balbus will strengthen the recommendations section in the health chapter, particularly the text about future directions. He also will add text about the breadth versus depth question and its evolution and the use of intramural versus extramural resources.
- ✧ Drs. Duke and Coutant will revise the response to the question on page 31, “Have the Global Program and its scientists played leadership roles?”
- ✧ Dr. Wilkinson will rearrange text on page 35 of the water quality chapter. He will move up number 3 and rewrite sections 1 through 4 to sound more positive and eliminate redundancies.
- ✧ Dr. Balbus will provide Dr. Reck with a comprehensive review of the air quality chapter.
- ✧ Dr. Gamble will obtain a definitive statement from DOE about the contracts under which the air quality work was performed.
- ✧ Ms. Nierenberg will edit her chapter to reflect Dr. Russell’s guidance regarding the issue of a separate investment in a regional program.

- ✧ Dr. Russell will send copies of the revised draft report to the Subcommittee members for their review by December 14, 2005.
- ✧ Drs. Russell and Duke will consult Dr. Gamble about external constraints and send an e-mail to the Subcommittee members outlining their next steps.
- ✧ Subcommittee members will contact Dr. Russell about any problems that they might encounter in completing the next steps, as well as any comments about issues, such as the concern about breadth versus depth.

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APPENDIX

Conference Call Agenda

Agenda

U.S. Environmental Protection Agency Office of Research and Development BOSC Global Change Subcommittee

**Conference Call
Tuesday, December 6, 2005
11:00 a.m. – 1:00 p.m. EST**

11:00 a.m.	Welcome	Milton Russell Subcommittee Chair
11:05 a.m.	Reminders for Global BOSC Subcommittee	Janet Gamble (ORD) Designated Federal Officer
11:10 a.m.	Chapter by Chapter Review of Draft Report	BOSC Global Change Subcommittee
12:30 p.m.	Identification of Final Action Items	Milton Russell
12:45 p.m.	Public Comments	
12:55 p.m.	Adjourn and Final Comments to Committee	Milton Russell and Janet Gamble