

U.S. Environmental Protection Agency (EPA) Board of Scientific Counselors (BOSC)
Air, Climate, and Energy Subcommittee
Conference Call Meeting Minutes
December 2, 2016

Date and Time: December 2, 2016, 1:30 p.m. to 3:30 p.m. Eastern Time

Meeting Minutes

Provided below is a list of the discussions that took place during the meeting with hyperlinked page numbers. The minutes follow. The agenda is provided in Appendix A, and the participants are listed in Appendix B.

Friday, December 2, 2016.....	1
Welcome and Opening Remarks.....	1
DFO Welcome.....	1
Public Comment Period	2
Discussion and Approval of Responses to Charge Questions.....	2
Introduction	2
Charge Question One.....	3
Charge Question Two.....	4
Charge Question Three.....	4
Wrap-up, Next Steps, and Adjourn	5
Appendix A. Agenda.....	A-1
Appendix B. Participants.....	B-1

Friday, December 2, 2016

The meeting generally followed the issues and timing as presented in the agenda provided in Appendix A of this meeting summary.

Welcome and Opening Remarks

Viney Aneja, Chair

Dr. Tim Benner, the Designated Federal Officer (DFO) for the BOSC ACE Subcommittee, opened the phone line, and requested that subcommittee members identify themselves. Ms. Sandra Smith, Dr. Patrick Kinney, Dr. Viney Aneja, Dr. Jeff Arnold, Dr. Charlette Geffen, Dr. Jinhau Zhao, Dr. Art Werner, Dr. Myron Mitchell, Dr. Constance Senior, Dr. Donna Kenski, and Dr. Louie Rivers. Dr. Benner stated that Dr. Elena Craft had a conflict, but would be joining for part of the meeting.

Dr. Benner welcomed everyone to the follow-up call for the BOSC ACE Subcommittee. Dr. Aneja also welcomed all attendees and thanked them for joining in the endeavor.

DFO Welcome

Tim Benner, Designated Federal Officer

Dr. Tim Benner, the DFO, opened the meeting. He discussed the rules for the meeting and stated that it was an open public meeting. He explained that the BOSC is a federal advisory committee and he is responsible for ensuring that all BOSC activities comply with the Federal Advisory Committee Act (FACA). All meetings are open to the public per requirements of FACA and include an opportunity for public comment. Minutes are being taken by the Environmental Protection Agency's (EPA's) contractor and would be made public on the BOSC website after being certified by the subcommittee's chair. An electronic public comment docket had been established in the *Federal Register*, and no comments had been submitted to that docket.

He reminded the attendees that all meetings involving substantive issues—whether in person, by phone, or by email—are open to the public. This applied to all group communications that include at least half of the subcommittee. As the liaison between the subcommittee and EPA, Dr. Benner (or any DFO) is required to attend all meetings. Announcements of the meetings would be placed in the *Federal Register* at least fifteen days prior to any meeting. In addition to the meetings being open to the public, Dr. Benner noted that all federal advisory committee documents are also available to the public.

Dr. Benner explained that he worked with EPA officials to ensure that all appropriate ethics regulations were satisfied. Subcommittee members and attendees needed to inform him of any conflicts of interest in any of the topics under discussion during any subcommittee deliberations. He mentioned that no member of the public had requested time to comment, but if anyone on the phone line would like to comment, there would be an opportunity to do so during the meeting. Public comments would be limited to three minutes each, and the phone line was for listening only.

The subcommittee asked if there are others on the phone line. Dr. Benner requested that the ACE staff identify themselves; Dr. Bryan Hubbell, Ms. Beth Hassett-Sipple, Dr. Alan Vette, Dr. Andy Miller, Ms. Laurel Schultz, and Ms. Donna Schwede identified themselves.

Public Comment Period

Tim Benner, Designated Federal Officer

Dr. Benner opened up the phone line for public comment. No response was received, so the comment period was closed.

Discussion and Approval of Responses to Charge Questions

Subcommittee

Dr. Aneja welcomed everyone again and thanked all members for contributing to the report. He specifically thanked Ms. Smith for working with him. He discussed the purpose of the call (i.e., to review the report for editorial issues, clarify points, and summarize recommendations). Dr. Aneja noted that editorial issues could best be handled electronically, and therefore requested that subcommittee members send any editorial issues via email to Dr. Aneja, Ms. Smith, and Dr. Benner. Dr. Arnold requested clarification on which version of the report was being used. Dr. Aneja and Dr. Benner confirmed that they were discussing the report which was emailed to the subcommittee that morning. Dr. Aneja requested clarification on the due date to the BOSC Executive Committee. Dr. Benner and Dr. Aneja agreed to send editorial comments by December 7, 2016.

Dr. Aneja stated that he would like to spend the majority of the time clarifying points on the three charge questions. He noted that the subcommittee had previously divided up into subgroups with approximately three members, and that each subgroup addressed one charge question. Each subgroup wrote a section of the report related to their respective charge question, which Dr. Aneja and Ms. Smith had edited and compiled.

Introduction

Dr. Werner commented that he would like to discuss the introduction prior to charge question one. Dr. Werner wanted the committee to clarify what the term “natural scientist” meant, as it may be too narrow to include things like engineers. Ms. Smith agreed, noting that the terms “natural science” and “social science” are used frequently throughout the report, but that the charge questions used the terms “social science” and “environmental science.” She asked the subcommittee if the report should change the term “natural science” to “environmental science.” An unidentified subcommittee member commented that engineering should be included somewhere in the terminology. Dr. Mitchell suggested using the term “natural science” to better define the focus. Dr. Aneja noted that the crux of the issue is that engineering is not included within the term “natural science.” Dr. Mitchell noted the document, which describes the theoretical model, states that engineering is covered by the term “natural science.” Dr. Mitchell suggested that the subcommittee should still clarify what is meant by the terms “natural science” and “social science.” Dr. Arnold commented that engineers will want to be accounted for separately. Dr. Aneja agreed with Dr. Mitchell, noting the need to define what is meant by the terms “natural science” and “social science.” Dr. Senior agreed with Dr. Arnold, and stated there is a need to include engineering.

Dr. Werner also stated that the introduction used the term “translational science,” which is defined for use only in translational medicine. Dr. Arnold stated that the subcommittee should not use the term “translational science,” and suggested replacing the term with “interdisciplinary science.” Dr. Mitchell noted that “translational science” is an important term for National Science Foundation (NSF) proposals. Dr. Arnold responded that the NSF use is not similar to the

subcommittee's use of the term. Ms. Smith suggested the subcommittee may have introduced unnecessary confusion in the word choice. Dr. Arnold commented that the field use of the term "translational science" is related to moving basic science into applied science, e.g., moving into applications in the health sciences. Dr. Arnold noted that the term "translational science" does not apply because the work done by EPA is already in applied sciences, and the subcommittee is trying to help augment applied science with social sciences. Dr. Mitchell agreed with the change after hearing this definition. Dr. Aneja noted a consensus on changing the term "translational science" to "interdisciplinary science" in the report.

Dr. Werner commented that there is a point in the report about nurturing and re-envisioning public health, but noted that it is not clear what it is being re-envisioned from. He suggested eliminating the term "re-envision" and instead using the term "nurture." The subcommittee agreed.

Dr. Rivers noted his concern that a further explanation of the definition of social science will be exclusive. He noted that if particular fields of social science are listed, it could be exclusive for those not included in the list. Dr. Aneja responded that he does not seek to eliminate the term "social science," but rather clarify the definition. Ms. Smith asked what terminology could be used to limit exclusivity. Dr. Rivers commented that he would review the report and suggest inclusive language.

Charge Question One

Dr. Aneja asked the subcommittee if there were any points of clarification related to charge question one.

Ms. Smith noted that there is a lot of use of the term "natural and social science" as a phrase together, and she asked if this should be modified to include engineering. The subcommittee agreed to add engineering wherever the phrase is used in the report. Dr. Werner commented that the phrase "natural and social science" could be replaced with "the environmental community." Dr. Aneja expressed concern that this phrase could be exclusive. Dr. Mitchell and Dr. Craft agreed with this point. Dr. Aneja suggested the phrase "natural science and engineering, and social science community," and the subcommittee agreed. Ms. Smith noted that the phrase had the necessary level of precision.

Dr. Zhao noted that, in the last paragraph of the report, most projects will continue with just natural science and engineering, and asked if that is appropriate. Dr. Aneja responded that his understanding was that social science should not be forced on all projects, which are based as natural and engineering, but only where it can add value. Dr. Zhao questioned if it was appropriate to use the word "most"? Dr. Mitchell suggested changing the word "most" to "some," to which Dr. Zhao agreed. Dr. Arnold recognized that the subcommittee does not want to inadvertently imply that some things are fenced off from this new model permanently. He noted that the subcommittee should ask, or suggest, for more specificity. Dr. Rivers noted that there is an implication that projects are doing well, but if the social factors are added, they might not continue to do well. He also expressed concern that the projects that are performing poorly based on social factors would be overlooked for further analysis because they are performing well on other factors. Dr. Arnold noted that wellness is not the only attribute to be used to judge whether social sciences should be added. Dr. Arnold mentioned that this is related to his thoughts on tradeoffs as part of charge question two and that it can be discussed further later.

Dr. Werner noted that a lot of ACE and ORD work supports specific regulatory programs, which are narrowly defined (e.g., developing standards for measuring a pollutant) and cannot use the new conceptual model. Dr. Arnold asked the subcommittee how they can make the division between the paragraphs that can and cannot use the model. Dr. Mitchell commented that a clarification sentence should be added. He also noted that ACE is doing well and that it is an important program. Dr. Zhao restated that the subcommittee agreed that the term “most” should be replaced by something else. Dr. Zhao also noted agreement with Dr. Arnold that the subcommittee should agree on guidelines on when it is, or is not, appropriate to use the conceptual model. Dr. Aneja asked the subcommittee if they are going to provide the guidelines, or if they should ask EPA to provide those guidelines. Dr. Zhao responded that he does not feel like the subcommittee has the necessary knowledge of the inner workings of EPA to effectively develop those guidelines, and believes that EPA should provide them. Dr. Arnold agreed and noted the need to provide more specific terminology than the word “some” in order for the subcommittee to fulfill their role as reviewers. He suggested that this be discussed as part of conversation on tradeoffs. Dr. Mitchell noted that the subcommittee should mention that this is a point of clarification for EPA to address. The subcommittee agreed.

Charge Question Two

Dr. Aneja asked the subcommittee if there were any points of clarification related to charge question two.

Dr. Mitchell noted that in the wildfire workshop example, there was a statement about a work-ready app. Dr. Mitchell requested clarification on what this app is called and its intended application. He also requested clarification on the statement on page nine, marked by the letter “D.” Dr. Craft noted that the capital letter “D” is related to the new guidance on identifying a specific person to make a decision, but she commented that she would review the notes and make the requested changes. Ms. Smith requested further clarification on the comment about indicators in the same paragraph. Dr. Craft noted that she would also review that comment.

Dr. Arnold commented that on page eight of the report there is information on tradeoffs and noted the editing has changed the meaning from what he originally submitted. Ms. Smith requested that Dr. Arnold submit new language for this section as part of his editorial review, to which Dr. Arnold agreed.

Dr. Senior noted that the paragraph about meeting goals seemed to require significant work and asked if Dr. Craft planned to rewrite this section. Dr. Aneja confirmed that is Dr. Craft’s intention.

Charge Question Three

Dr. Aneja asked the subcommittee if there were any points of clarification related to charge question three.

Ms. Smith requested clarification on the last set of bullets on page eleven, specifically related to the bullet referencing reaching out to teachers to expand interdisciplinary study. Dr. Werner commented that this referenced the need for high school teachers to teach their students that many of these problems are interdisciplinary. Dr. Mitchell suggested the bullets were redundant. Dr. Senior agreed that the third and fourth bullets shared similar content. The bullets discussed the need for expanded communication, but the report does not explain why it is important. Dr. Senior requested that Dr. Werner addresses this issue, to which he agreed.

Wrap-up, Next Steps, and Adjourn

Viney Aneja, Chair

Dr. Aneja stated that the subcommittee has discussed improvements to the document to clarify several issues. He asked if each assigned charge question group would like to address the specific issues discussed.

The groups for each charge question were:

- Charge Question One: Drs. Charlette Geffen, Constance Senior, Art Werner
- Charge Question Two: Drs. Elena Craft, Jeffrey Arnold, and Patrick Kinney
- Charge Question Three: Drs. Donna Kenski, Louie Rivers III, and Myron Mitchell

Dr. Mitchell stated his preference for Dr. Aneja and Ms. Smith to take the comments provided in this meeting and update the report to the best of their ability. Dr. Aneja responded that he and Ms. Smith would take care of all four sections and would reach out to individuals as necessary for clarification. Dr. Werner asked if he still needed to write the clarification pieces that were requested of him. Dr. Aneja responded that the subcommittee members that have identified rewrites should do so and send the updates to Dr. Aneja, Ms. Smith, and Dr. Benner. Dr. Benner stated that if any documents are sent to the entire subcommittee, it can be considered a meeting that should be public, so individual communication may work better. Ms. Smith clarified that each charge question group can still work together, to which Dr. Benner agreed.

Dr. Aneja noted that the report is still missing a section related to summarizing and providing recommendations. Dr. Aneja proposed that since each subgroup is familiar with their charge question that they create one to three lines of summary text and one to three bullets of recommendations for each charge question. Dr. Benner asked about the timeline given that they only have 7 days to finalize the document. The subcommittee discussed the schedule for subcommittee member editorial comments and charge question group development of recommendations and summaries in order to achieve submittal of the subcommittee report to the BOSC Executive Committee by December 23, 2016. After the discussion, Dr. Aneja asked that Dr. Benner send out an e-mail summarizing the timeline.

Ms. Smith challenged the subgroups to consider the most important recommendations and to put themselves in EPA's position, recognizing that EPA will be required to respond to each recommendation. She urged each subgroup to make recommendations they feel strongly about and that would be helpful. Ms. Smith noted that she personally feels that they should be supportive of the ACE program.

Dr. Kinney asked which version of the document to use in developing the bullet points. Dr. Aneja confirmed that the most current version is from December 1, 2016. Ms. Smith stated that the summary bullets should be prioritized by importance. Dr. Aneja requested that the contractor send out the conference call notes as soon as possible.

Dr. Aneja noted that the subcommittee had no other comments. The subcommittee reviewed the report and identified next steps. Dr. Benner thanked everyone for attending. He stated that he would distribute an email with the timeline and contractor's draft meeting notes.

The meeting was adjourned.

Appendix A. Agenda

**United States Environmental Protection Agency
Board of Scientific Counselors (BOSC)
Air, Climate, and Energy (ACE) Subcommittee
Meeting Agenda – December 2, 2016**

TIME	TOPIC	PRESENTER
Friday, December 2, 2016		
1:30.– 1:40 p.m.	Welcome and Opening Remarks	Viney Aneja, Chair
1:40 – 1:45 p.m.	DFO Welcome	Tim Benner, DFO
1:45 – 1:50 p.m.	Public Comments (if any)	
1:50 – 3:20 p.m.	Discussion and Approval of Responses to Charge Questions	Subcommittee
3:20 – 3:30 p.m.	Wrap-up, Next Steps, and Adjourn	Viney Aneja, Chair

Appendix B. Participants

BOSC ACE Subcommittee Members:

Viney Aneja, Chair
Sandra Smith, Vice Chair
Jeffrey Richard Arnold
Elena Craft
Charlette A. Geffen
Donna M. Kenski
Patrick Kinney
Myron James Mitchell
Louie Rivers III
Constance Senior
Art Werner
Jinhua Zhao

EPA Designated Federal Officer: Tim Benner, *Office of Research and Development*

Other EPA Attendees:

Dan Costa	Andy Miller	Alan Vette
Beth Hassett-Sipple	Laurel Schultz	
Bryan Hubbell	Donna Schwede	

Other Participants by Phone:

Heather Harrington (*Yale University*)

Contractor Support: Kevin Kurkul, ICF