



National Advisory Council for Environmental Policy and Technology Teleconference

Call-In Number: 202-991-0744, Conference Code: 7667917#

**Wednesday, February 28, 2018
12:00 – 4:00 p.m. EST**

MEETING SUMMARY

Welcome, Introductions and Overview of the Agenda

Eugene Green, Designated Federal Officer (DFO) for the National Advisory Council for Environmental Policy and Technology (NACEPT or Council), Federal Advisory Committee Management Division (FACMD), Office of Resources, Operations and Management (OROM), Office of Administration and Resources Management (OARM), U.S. Environmental Protection Agency (EPA); and William Ross, Jr., NACEPT Chair, Council Member, Gillings School of Global Public Health Advisory Council, University of North Carolina at Chapel Hill (UNC–Chapel Hill)

Mr. Eugene Green (NACEPT DFO, EPA) welcomed the NACEPT members, thanked everyone involved in drafting the report, and called the roll. A list of meeting participants is provided in Appendix A.

Mr. William Ross, Jr. (NACEPT Chair, UNC–Chapel Hill) also extended his welcome to the NACEPT members and other participants. He added his appreciation for everyone's efforts in drafting the second report on citizen science. He provided an overview of the agenda, which is included as Appendix B.

The official certification of the minutes by the Chair is included as Appendix C.

Public Comments

Eugene Green, NACEPT DFO, FACMD, OROM, OARM, EPA

Mr. Green called for public comments; none were offered.

Discussion on Latest Integrated Draft of NACEPT's Report on EPA and Citizen Science: Building Collaborations and Partnerships

William Ross, Jr., NACEPT Chair, Council Member, Gillings School of Global Public Health Advisory Council, UNC–Chapel Hill; Council Members

Mr. Mark Joyce (FACMD, OROM, OARM, EPA) reminded the members that the purpose of the teleconference is to discuss concerns with the current draft of the report so that they can be addressed and then approve the report. The report will be edited based on the discussion during this call, and because of time and other constraints, the edited report will not be sent to all of the members. The report language must be finalized by the end of March so that it can be published by the end of April.

Mr. Dan Bator (ORD, EPA) reported that all comments have been incorporated into the current draft of the report. Several EPA staff members were given the opportunity to provide input; this will be discussed on this call. The report includes 10 recommendations, with the first section still focusing on investing in partnerships to move citizen science from information to action.

Mr. Ross solicited comments about the draft from each NACEPT member present. Ms. Darlene Cavalier (Arizona State University) thought that the report, although solid, takes a “safe” approach; she believed that it would be more advantageous to take some risks, particularly in terms of the recommendations. She would like the second report to identify and describe opportunities to take action on the recommendations from the first report. Dr. Ramesh Chawla (Howard University) liked the report. Dr. Irasema Coronado (The University of Texas at El Paso) indicated that the concerns that she had submitted previously had been addressed, and she has only minor editorial comments.

Ms. Barbara Jean Horn (Colorado Parks and Wildlife) agreed with the previous comments and wondered if NACEPT was as bold as it could be in its recommendations. EPA leadership will need to lead a cultural shift at the Agency, and based on the EPA input that Mr. Jay Benforado (ORD, EPA) shared with the Council, the report did not state this as boldly as necessary. Developing a timeline for implementation could help leadership understand that integrating citizen science into EPA’s culture is feasible even within the current budget climate. The report’s discussion of technology (Recommendation 10) should be framed within the context of citizen science.

Mr. Robert Kerr (Pure Strategies, Inc.) agreed that the report could be bolder and more direct in describing opportunities. He would like the report to be less cautious and make the point that citizen science can help the Agency implement activities in times of budget constraints. Ms. Bridgett Luther (Code Blue Innovations) thought that the report is comprehensive and agreed that it needs to be bolder. She would like to see how the comments from EPA will be incorporated into the report. Mr. Jeffrey Mears (Oneida Nation) thought that the report reads well, but he also would like to see it strengthened to make the Council’s points very clear. Dr. Graciela Ramirez-Toro (InterAmerican University of Puerto Rico) thought that the report should emphasize that citizen science is not separate from the Agency’s current work; it can be incorporated relatively easy into current Agency activities.

Mr. Benforado thought that language could be added to the cover letter and the introduction to make the report bolder and emphasize NACEPT’s recommendations. Some of the EPA leadership comments indicated that prioritization and a timeline were needed; however, as an external committee, NACEPT may not be in the best position to comment on implementation issues. Agency leadership will need to determine how citizen science is implemented within EPA. Specific examples will help to illuminate how EPA can take advantage of citizen science to address its pressing problems and challenges (e.g., abandoned mines, drinking water testing).

Ms. Horn agreed that NACEPT must tell EPA what needs to be done but not how to do it. A consistent approach should be implemented across regions and programs that is adaptable within each region and program. A sentence or two describing what is meant by a paradigm or cultural shift also should be added to the beginning of the report. Many people do not understand that it means changing how institutions do business.

The NACEPT members agreed to include a paragraph in the report introduction describing the urgency of enacting a cultural shift and examples of implementation (i.e., how citizen science can be applied to priority Agency issues such as lead, abandoned mines, drinking water testing and so forth). Dr. Alison Parker (ORD, EPA) asked the NACEPT members to provide specific examples that could be included. Ms. Cavalier gave the example of Dr. Caren Cooper (North Carolina State University) and Dr. Mark Edwards (Virginia Tech) receiving support for a national citizen science project to test water pipes for lead. Ms. Horn, Dr. Coronado and Mr. Benforado volunteered to work on this paragraph.

Ms. Horn noted that NACEPT is not designed to create continued accountability in reporting. Perhaps the recommendation to form an advisory board should be highlighted. This advisory board should be equivalent to the advisory boards that the Agency consults with regarding accountability in mining, extraction, utility and other industries. EPA should create a sounding board for accountability that will help the Agency to consistently implement citizen science within its activities. Dr. Ramirez-Toro noted

that the interviews with EPA staff could be a resource to determine the best examples to show how citizen science can be implemented at the Agency.

Dr. Parker asked for input regarding the diagram on page 14 and whether the right groups are included. Some concern has been expressed about the inclusion of industry. The NACEPT members agreed that industry needs to be included, and the term will be changed to “private sector.” Ms. Horn described the content of Figure 3, which highlights EPA’s various, diverse relationships with those who can help the Agency implement citizen science activities. Mr. Benforado wondered whether the figure could be simplified to emphasize its main point, which is the diversity of EPA’s relationships. The figure legend also could describe the figure better. Ms. Horn said that the figure could be simplified by removing the boxes on the right side. Ms. Luther thought that the figure effectively highlights the points of connection. Mr. Benforado noted that the final graphic should not imply federalism; Ms. Horn attempted to avoid this by drawing the figure horizontally rather than placing EPA at the top. An alternate idea is to place EPA in the center with spokes out to its various connections. A contractor will be developing the graphic for the final report; the Editing Team will seek input about the graphic from Dr. Horn, Dr. Coronado, Mr. Kerr and Ms. Luther. Mr. Kerr suggested including a reference to the examples to help the reader make the connections among the examples. Dr. Ramirez-Toro added that the specific acts (e.g., Clean Water Act) that relate to the examples can be included to show where EPA draws its authority.

Dr. Parker explained that some concerns have been expressed about the imbalance in media highlighted in the report, as water is the main focus of many of the examples. She asked the Council members for suggestions on how to correct the imbalance, either by adding additional air, waste or toxics examples as available or removing some of the water examples. Mr. Ross had not noticed the imbalance. Dr. Ramirez-Toro noted that adding examples related to the Resource Conservation and Recovery Act, Clean Air Act, and so forth would help to address any perceived imbalance. Mr. Benforado suggested including a table listing the various media (i.e., air, water, land, waste) and an example or two for each to show that citizen science can help all of EPA’s program areas. A visual object placed at the beginning of the report will help the reader to understand that the citizen science approach can be used throughout EPA in all of the media program areas.

Dr. Parker explained that the contractor had suggested including a case study in the section on technology to highlight how federal agency/industry partnerships can foster citizen science; she asked for input about this idea and whether any of the members knew of any specific examples that could be highlighted. Ms. Cavalier thought that such examples exist in the area of sensors, and this could be a place to be bolder and also be transparent about the challenges involved in federal-industry partnerships. Mr. Benforado agreed that sensors would be an appropriate area to explore for such a case study. Ms. Horn commented that Mr. Dwane Young (EPA) has worked effectively within the area of data visibility and developing tools to help groups submit data to the Water Quality Portal. EPA currently is piloting its “How’s My Waterway?” website and worked with open source software companies in this effort. Ms. Cavalier and Mr. Benforado will develop a case study that includes sensor and Water Quality Portal examples.

Dr. Parker stated that NACEPT must select an appropriate title for the report, which had been discussed during the November 2017 NACEPT teleconference. Currently, the working title is: *Information to Action: Strengthening Citizen Science Partnerships for Environmental Protection*. Alternate titles are as follow:

1. *Environmental Protection Belongs to the Public: Moving From Information to Action Through Partnerships in Citizen Science*
2. *Environmental Protection Belongs to the Public: Harnessing Information and Action Through Partnerships in Citizen Science*
3. *Partnering With the Public: Moving Information to Action Through Citizen Science*

4. Citizen Science at EPA: Moving Information to Action

Mr. Ross and Mr. Kerr prefer alternate title #1. Ms. Luther and Dr. Chawla prefer the current working title. Dr. Ramirez-Toro likes the selected title but would like EPA to be included. The NACEPT members decided that the final title of the report would be *Information to Action: Strengthening EPA Citizen Science Partnerships for Environmental Protection*.

The Council members discussed the report by section.

Executive Summary: The NACEPT members did not have comments about this section.

Chapter 1: Mr. Benforado noted the description of the methodology to develop the report, including interviews, on page 8 and asked whether a list of interviewees should be included in the report. The NACEPT members decided not to include a list of interviewees. The Council members concurred that the chapter is well written.

Chapter 2: Links to pertinent online material will be included, and the contractors will ensure that the figure callouts are located near the figures. Figures 1 and 2 should be placed closer together and near Recommendation 1. Mr. Benforado thought that the last column in Figure 2 mixes two categories that could be placed in separate columns. Ms. Horn and Mr. Ross liked combining outcomes and results, which should be the emphasis of the figure, in one column. Appropriate state abbreviations will be added to Table 1. Figure 4 will be redesigned so that its aesthetic matches the rest of the report.

Ms. Horn thought that a cultural shift will be needed for EPA to adopt the recommendation that the Agency develop a mechanism to approve Quality Assurance Project Plans (QAPPs). A QAPP describes a data objective and the quality of data that will be generated to achieve that objective. A continuum of approval exists for QAPPs, and EPA must improve how it operates on that continuum. Mr. Benforado explained that two concerns exist around EPA providing QAPP approvals: resource limitations and determining the dynamic of citizen science data. Dr. Parker commented that EPA already approves QAPPs for organizations conducting EPA-funded research; the NACEPT recommendation is to apply this approval process to any external organization seeking such approval. Mr. Benforado suggested providing more explanation to make this clear. Dr. Ramirez-Toro noted that the level of expertise in evaluating QAPPs varies within the Agency. EPA's role may be to facilitate or provide guidance rather than to approve so that partnerships remained balanced. A NACEPT member commented that community groups want to be validated; perhaps "validate" is a better term than "approve."

Mr. Benforado thought that this chapter should reference Mr. Omega Wilson's (West End Revitalization Association) work on equity and equality.

Chapter 3: Mr. Benforado suggested adding an opening paragraph under Recommendation 5 describing the role of local government, the nuanced relationship that EPA has with local governments, and why this is an important issue. It should stress that NACEPT envisions an increased role for local governments in local citizen science projects, and EPA must help to foster this.

Chapter 4: A NACEPT member recommended including a non-water-related example within Recommendation 7 to highlight the fact that citizen science can be applied to media other than water. This might be a good place to include an example about toxics. Mr. Benforado thought that the first text box underneath Recommendation 7 should be moved to Recommendation 5 regarding local governments. Dr. Ramirez-Toro agreed that this text box could be moved and provided her perspective of local government interactions with neighborhoods and communities. Most local governments do not have primacy. A NACEPT member commented that individual quotes could be pulled from Dr. Cooper's bird projects.

Chapter 5: In response to a question from a NACEPT member about licensing, Mr. Benforado explained that many citizen science projects require apps or tools. Some of these cannot be used without paying for a license. Open licensing creates an infrastructure that allows free use of apps and tools and eliminates a potential barrier to communities and groups performing citizen science. The report will be revised to include a definition of open licensing or use more accessible terminology (e.g., open source).

A NACEPT member would like Recommendation 9 expanded to include communities in addition to the private sector. Another NACEPT member agreed that everyone, from citizens through the EPA Administrator, will need to understand data use. The term “private sector and other stakeholders” will be used in the recommendation and the text. The phrase “EPA can develop standards” in the second paragraph of Recommendation 9 will be revised to “EPA can develop practices” because the term “standards” is regulatory language within the Agency.

Ms. Horn commented that Recommendation 10’s action item is missing the message that EPA should serve as a conduit to bring technologies to the citizen science movement. The Agency could facilitate access to technologies through partnerships and must be a leader in this area. EPA could develop best practices for citizen scientists who need to understand the technologies and appropriate use of tools under the context in which they will be collecting and using data. Making the information about apps and tools discoverable is another important role for the Agency.

Mr. Kerr moved that NACEPT approve the revised report, which will include the revisions discussed during the teleconference. Dr. Coronado seconded the motion, which the NACEPT members approved unanimously.

Action Items and Next Steps

William Ross, Jr., NACEPT Chair, Council Member, Gillings School of Global Public Health Advisory Council, UNC–Chapel Hill; Council Members

Mr. Green requested that NACEPT members provide all additional materials for the report to the Editing Team no later than Friday, March 9; this includes all information for any outstanding references, particularly the dates of interviews. Photographs are needed for the report as well. NACEPT members will find and submit photographs (with appropriate permissions) no later than Friday, March 9.

Mr. Joyce announced that this is his final NACEPT meeting and report, as he is retiring on March 30. He has enjoyed working with NACEPT and thanked the members for their dedication and support. Mr. Ross and the NACEPT members thanked Mr. Joyce for his leadership and wished him well.

Adjournment

Mr. Green thanked Dr. Coronado for her efforts on the Spanish translation of NACEPT’s first report on citizen science. The Spanish version will be published soon. Mr. Benforado thanked the NACEPT members and EPA staff for their work on the report. Mr. Ross thanked the NACEPT members for their participation and adjourned the meeting at 2:44 p.m. EST.

Action Items

- The NACEPT members agreed to take the following actions and implement the following changes to the current draft of the report:
 - Develop a paragraph in the introductory material describing a cultural shift and implementation, including examples of how citizen science can be applied to priority Agency issues (e.g., lead, abandoned mines, drinking water testing); include a sentence or two in the cover letter and executive summary. *Responsible parties: Editing Team, Ms. Horn, Dr. Coronado and Mr. Benforado.*
 - Change “industry” to “private sector” in the diagram on page 14. *Responsible party: Editing Team.*
 - Develop Figure 3 with the contractor. *Responsible parties: Editing Team, Ms. Horn, Dr. Coronado, Ms. Luther and Mr. Kerr.*
 - Create a table with one or two citizen science examples for each media program area to visually show how the citizen science approach can be used throughout EPA in all of the media program areas (i.e., not just water). *Responsible parties: Mr. Ross, Mr. Kerr, Dr. Coronado and Mr. Benforado.*
 - Develop a case study highlighting air sensor work and Mr. Young’s data visibility efforts to highlight the successes and challenges of federal-private partnerships and the algorithms used to make decisions. *Responsible parties: Ms. Cavalier and Mr. Benforado.*
 - Place Figures 1 and 2 closer together and near Recommendation 1. *Responsible parties: Editing and Contracting Teams.*
 - Locate figure callouts near the appropriate figures. *Responsible party: Contracting Team.*
 - Add appropriate state abbreviations to Table 1. *Responsible party: Editing Team.*
 - Redesign Figure 4 so that its aesthetic matches the rest of the report. *Responsible parties: Editing and Contracting Teams.*
 - Revise the language about QAPP approval to be more encompassing. *Responsible parties: Editing Team and Ms. Horn.*
 - Reference Mr. Wilson’s work on equity and equality in Chapter 2. *Responsible party: Editing Team.*
 - Add an opening paragraph under Recommendation 5 describing the role of local government, the nuanced relationship that EPA has with local governments, and why this is an important issue. *Responsible parties: Mr. Ross, Mr. Benforado and Ms. Laureen Boles.*
 - Include a toxics example under Recommendation 7. *Responsible party: Editing Team.*
 - Move the first text box under Recommendation 7 to Recommendation 5. *Responsible party: Editing Team.*
 - Determine whether Dr. Cooper can provide a quote for Recommendation 7. *Responsible party: Editing Team.*
 - Include a definition of open licensing or use more accessible terminology in Recommendation 8. *Responsible party: Editing Team.*
 - Expand Recommendation 9 to include “other stakeholders” in addition to the private sector. *Responsible party: Ms. Shannon Dosemagen and Editing Team.*

- Change the phrase “EPA can develop standards” in the second paragraph of Recommendation 9 to “EPA can develop practices.” *Responsible party: Editing Team.*
- Add the message that EPA should serve as a conduit to bring new technologies to the citizen science movement to the action item under Recommendation 10. *Responsible parties: Ms. Cavalier, Ms. Luther and Editing Team.*
- NACEPT members will:
 - Provide all additional information, including information related to references, to the Editing Team no later than Friday, March 9.
 - Provide photographs (with appropriate permission) for the report no later than Friday, March 9.

Appendix A

National Advisory Council for Environmental Policy and Technology (NACEPT) Meeting Participants

NACEPT Members

Ms. Darlene Cavalier

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Dr. Ramesh C. Chawla

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Dr. Irasema Coronado

Professor
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Ms. Barbara Jean Horn

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Mr. Robert Kerr

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Dr. Graciela I. Ramirez-Toro

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Other Participants**John Kinsman**

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Kristen LeBaron

The Scientific Consulting Group, Inc.
Gaithersburg, MD

Appendix B

Agenda for the February 28, 2018 NACEPT Meeting



National Advisory Council for Environmental Policy and Technology (NACEPT) Agenda

Wednesday, February 28, 2018

12:00 p.m. – 4:00 p.m. EST

U.S. EPA William Jefferson Clinton East Building, Room 1132

1201 Constitution Avenue NW

Washington, D.C. 20460

Call-In Number: 202-991-0744, Conference Code: 7667917#

- 12:00 p.m. Welcome, Introductions, and Overview of Agenda**
- Eugene Green
NACEPT Designated Federal Officer
- Bill Ross
NACEPT Chair
- 12:15 p.m. Public Comments**
- 12:30 p.m. Discussion on Latest Integrated Draft of NACEPT's Report on EPA and Citizen Science: Building Collaborations and Partnerships**
- Bill Ross
NACEPT Chair
- Council Members
- 3:30 p.m. Action Items and Next Steps**
- Bill Ross
NACEPT Chair
- Council Members
- 4:00 p.m. Adjournment**

Appendix C

Chair Certification of Minutes

I, William G. Ross, Jr., Chair of the National Advisory Council for Environmental Policy and Technology (NACEPT), certify that this is the final version of the complete minutes for the teleconference held on February 28, 2018, and that the minutes accurately reflect the discussions and decisions of the meeting.



William G. Ross, Jr., NACEPT Chair

April 10, 2018

Date