

U.S. Environmental Protection Agency Board of Scientific Counselors

Executive Committee

Virtual Meeting Summary

February 4 and 5, 2022

Dates and Times: February 4, 2022, 1:00 p.m. to 4:00 p.m.; February 5, 1:00 p.m. to 4:00 p.m. Eastern Time

Location: Virtual

Executive Summary

On February 4 and 5, 2022, the Environmental Protection Agency's (EPA's) Board of Scientific Counselors (BOSC) Executive Committee (further referred to as the Committee or EC) convened in virtual meetings. The goals of the two-day meeting were to finalize the BOSC subcommittee reports. The meeting format allowed for presentations, open dialogue, Committee deliberations and questions, and EPA responses to questions.

Day 1 consisted of opening remarks and introductions, a summary of recommendations and suggestions developed in response to charge questions, and Committee deliberations about the Air, Climate, and Energy (ACE) and Sustainable and Healthy Communities (SHC) Subcommittee draft reports.

Day 2 consisted of an overview of the recommendations and suggestions developed in response to charge questions and Committee deliberations about the Chemical Safety for Sustainability and Health and Environmental Risk Assessment (CSSS/HERA) and the Safe and Sustainable Water Resources (SSWR) Subcommittee draft reports.

Thursday, February 4, 2022

Dr. Chris Frey, Deputy Assistant Administrator for Science Policy, Office of Research and Development (ORD), welcomed the EC members, EPA staff members, and other attendees. Dr. Frey stated the goal of finalizing the BOSC Subcommittee report, reviewed the BOSC committee structure, and discussed upcoming high-priority issues.

Dr. Paul Gilman, Chair, BOSC EC, described the meeting format, reviewed the meeting agenda, and confirmed there were no public comments.

Deliberation on the Air, Climate, and Energy Subcommittee Draft Report

Air, Climate, and Energy Subcommittee Draft Report

Dr. Charlotte Geffen, Chair, ACE Subcommittee, reviewed the three charge questions for the Subcommittee's draft report and summarized ACE priority issues related to environmental justice, climate change, inclusion of energy and social sciences in the research portfolio, partner engagement, research diversity, incorporating a systems approach, and effective dissemination of research results.

Ms. Sandra Smith, Vice Chair, ACE Subcommittee, summarized the strengths, suggestions, and recommendations of the three charge questions associated with the ACE draft report. She first

described Charge Question 1 and noted the per- and poly-fluoroalkyl substances (PFAS) work provides a good framework for complex problems associated with improving understanding of pollution sources and exposures within vulnerable communities. ACE suggests increasing research on air transport and deposition of PFAS and expanding methods of public outreach. ACE recommends coordinating with states to provide consistent and standardized procedures to collect and analyze samples, developing a strategy for focusing on health outcomes as part of the broader research on pollutants, and developing materials to assist with public understanding of the relevance of health-effects research within the ACE program.

She then reviewed Charge Question 2 and suggestions and recommendations associated with improving understanding of the adverse impacts of climate change on health. She noted ACE's breadth of research projects related to climate and the Subcommittee's suggestions for expanding research on climate impacts on the non-human environment and producing a synopsis of available models. She described the recommendations for expanding use of models and ensuring inclusion of climate-relevant emissions in ACE modeling and observational work.

Dr. Geffen discussed Charge Question 3 and ACE's suggestions and recommendations for implementing research on emissions and impacts from energy and transportation systems. She noted strengths include interagency cooperation on PFAS research, the existence of a strong suite of energy and transportation models, and effective dissemination of models to users. ACE suggests adding the ability to quantify health impacts to models and increasing the focus on short-lived climate pollutants. Recommendations include prioritizing inclusion of data on the impact of policies and technological changes on communities with environmental justice concerns and optimizing dissemination of information and model results to stakeholders

Air, Climate, and Energy Research Program National Program Director and Center Comment

Dr. Bryan Hubble, National Program Director, ACE Research Program, thanked everyone for their work. Dr. Gilman noted the quality of work and strong qualifications of Agency researchers before inviting questions. A short discussion about clarifications around the language included in the recommendations followed.

Deliberation on the Sustainable and Healthy Communities Subcommittee Draft Report

Sustainable and Healthy Communities Subcommittee Draft Report

Dr. Courtney Flint, Chair, SHC Subcommittee, and Mr. Matthew Naud, Vice Chair, SHC Subcommittee, thanked ORD staff for their support in developing the draft report. Mr. Naud then noted SHC's focus on application of ORD research on the beneficial reuse of waste.

Mr. Naud read Charge Question 1 and noted strengths of the US-Environmentally-Extended Input-Output (USEEIO) life cycle model, including its accessibility, comprehensiveness, and applicability to other tools and models. Suggestions include incorporating social science into the economic life cycle assessment and updating coding to incorporate this economic analysis. Recommendations include improving capability of the model for use in local scenario planning via additional inputs, increased outreach and partnerships, and standardization of guidance.

Mr. Naud then discussed Charge Question 2 focusing on the usability of ORD's construction and demolition (C&D) materials research and use of the Leaching Environmental Assessment

Framework (LEAF) to improve leaching predictions. He described improvements in identifying and quantifying relative percentages of materials found in C&D waste, acknowledged areas for improvement in C&D materials recycling, and noted barriers to reusing C&D materials, including PFAS contamination. Suggestions include establishing partnerships and expanding research dissemination. Recommendations include developing definitive dissemination plans for LEAF and C&D research and expanding the LEAF model to include a broader range of climatic conditions potentially impacting leaching of chemicals of concern.

Sustainable and Healthy Communities Research Program National Program Director and Center Comment

Mr. Tim Watkins, Acting National Program Director, SHC Research Program, thanked the Subcommittee for their work in reviewing SHC research and agreed strengthening partnerships is important. Dr. Greg Sayles, Center Director for the Center for Environmental Solutions and Emergency Response (CESER), commented about common themes found in the suggestions and recommendations and noted they would inform the development of the next strategic research plan.

Board of Scientific Counselors Executive Committee Deliberation

Dr. Gilman opened deliberations. Several EC members provided clarifications related to the recommendations and suggestions. Dr. Gilman noted the EC is unanimous in recommending transmittal of the draft report to ORD.

Friday, February 5, 2022

Mr. Tom Tracy, Designated Federal Officer, Office of Science Advisor, Policy, and Engagement, convened the meeting and welcomed participants.

Deliberation on the Chemical Safety for Sustainability and Health and Environmental Risk Assessment Subcommittee Draft Report

Chemical Safety for Sustainability and Health and Environmental Risk Assessment Subcommittee Draft Report

Katrina Waters, CSS/HERA Subcommittee Chair, described CSS research focus areas, including chemical evaluation, complex systems science, and solutions-driven translation and knowledge delivery. She then discussed the suggestions and recommendations arising from Charge Question 1 related to strengthening CSS research products. Suggestions include developing a framework to track use of CSS tools and product updates, accelerating efforts to demonstrate scientific confidence in methods and models, and improving community outreach. Recommendations include focusing on National Air Monitoring Systems (NAMS) validation, establishing an outreach program, and improving tool documentation.

She then reviewed Charge Question 2 relating to strengthening CSS solutions-driven research to meet stakeholder needs. Suggestions include increasing efforts to identify tribal needs and support state partners and providing clarity on stakeholder engagement best practices. Recommendations include prioritizing solutions-oriented research to address evolving partner

needs and considering user feedback about emerging environmental concerns for technical improvements to increase tools' utility.

Dr. Gilman asked whether there were any questions regarding the need to clarify language in the report. Dr. Leslie Rubin emphasized the importance of community outreach, especially to tribal communities.

Chemical Safety for Sustainability Research Program National Program Director and Center Comment

Dr. Annette Guiseppi-Elie, National Program Director for the CSS Research Program, mentioned various ways CSS has incorporated Subcommittee advice in their research. She stated her approval of the suggestions and assured participants CSS will incorporate them into current and future strategic planning. She noted CSS is encouraging collaboration across programs and research areas within the scientific community as well as focusing on broader community outreach. She mentioned CSS also has climate change and climate justice on their research agenda. She then invited questions. A brief discussion of clarification around the topic of outreach ensued.

Deliberation on the Safe and Sustainable Water Resources Subcommittee Draft Report ***Safe and Sustainable Water Resources Subcommittee Draft Report***

Dr. Lucinda Johnson provided a brief description of Charge Question 3 for the Safe and Sustainable Water Resources (SSWR) report. She noted the breadth of the two aspects of the Harmful algal blooms (HABs) portfolio and innovative research techniques complex modeling. Subcommittee suggestions include determining the toxicity of HABs, forecasting HABs to mitigate and prevent exposure, and integrating social and economic factors into ecosystem impact assessments. Recommendations include ensuring model development and validation captures a range of critical ecosystem types and sites representing different communities.

Dr. Steve Weisberg, Acting SSWR Subcommittee Vice Chair, provided an overview of Charge Question 1 focusing on nutrient problems. He noted the challenge of nutrient dynamics research scalability. The Subcommittee suggests developing a clear strategy for assessing the scalability of indicators and recommends expanding research on nutrient concentrations and endpoints and documenting ORD's nutrient research strategy and associated projects.

He next reviewed Charge Question 2 focusing on handling of nutrient problems and noted the challenge of effectively disseminating findings. The Subcommittee suggests expanding modeling to include assessments of stormwater sources, developing tools applicable to legacy-nutrients-dominated systems, and establishing a better connection between source identification research and best management practices. The Subcommittee recommends developing an effective communication strategy focused on lessons learned that is relevant for various geographic and spatial scales.

Safe and Sustainable Water Resources Research Program National Program Director and Center Comment

Dr. Suzanne van Drunick, National Program Director for the SSWR Research Program, and others representing CESER, the Center for Environmental Measurement and Modeling (CEMM), the Center for Public Health and Environmental Assessment (CPHEA), and the Center for Computational Toxicology and Exposure (CCTE) thanked the Subcommittee for their efforts and noted the applicability of the suggestions and recommendations for their various programs.

Board of Scientific Counselors Executive Committee Deliberation

The EC unanimously agreed to transmit the report to ORD.

Meeting Agenda and Other Meeting Materials

The [agenda](#)¹ and other meeting materials can be accessed at [BOSC Executive Committee Meeting: February 2022 | US EPA](#).

Meeting Participants

BOSC Executive Committee Members:

Paul Gilman, *Chair*
Lucinda Johnson, *Vice Chair*
Viney Aneja
Shahid Chaudhry*
Kari Cutting*
Courtney Flint
Charlette Geffen
Matthew Naud
Paula Olsiewski
Joseph Rodricks*
Leslie Rubin
Sandra Smith
James Stevens
Justin Teeguarden
Katrina Waters

**did not attend any meetings*

BOSC Air, Climate, and Energy Subcommittee Members:

Bart Croes
Michael Kleinman
Louie Rivers III
Annette Rohr*

**did not attend any meetings*

BOSC Chemical Safety for Sustainability and Health and Environmental Risk Assessment Subcommittee Members:

Richard Becker
Chris Gennings
Jennifer McPartland*
Gina Solomon

**did not attend any meetings*

¹ [BOSC EC Meeting Agenda \(epa.gov\)](#)

BOSC Homeland Security Subcommittee Members:

Monica Schoch-Spana

BOSC Safe and Sustainable Water Resources Subcommittee Members:

Steve Carr*

Kate Lajtha

Michelle Lorah

Tim Verslycke

Stephen Weisberg

**did not attend any meetings*

BOSC Sustainable and Healthy Communities Subcommittee Members:

James Kelly

Rainer Lohmann

Barret Ristroph

EPA Designated Federal Officer (DFO): Tom Tracy, *Office of Science Advisor, Policy, and Engagement*

Presenters:

Susan Burden, *Scientific Support Advisor and PFAS Executive Lead, Office of Research and Development*

Justin Conley, *Reproductive Systems Biologist, Office of Research and Development*

Chris Frey, *Deputy Assistant Administrator for Science Policy, Office of Research and Development*

Alice Gilliland, *Deputy Directory, Center for Environmental Measurement and Modeling*

Annette Guiseppi-Elie, *Associate Director for Science, Center for Computational Toxicology and Exposure*

Chris Impellitteri, *Associate National Program Director, Safe and Sustainable Water Resources Research Program*

Richard Judson, *Research Chemist, Center for Computational Toxicology and Exposure*

Andrew Kraft, *Biologist, National Center for Environmental Assessment*

Max Krause, *Environmental Engineer, Office of Research and Development*

Hannah Liberatore, *Physical Scientist, Center for Environmental Measurement and Modeling*

Bill Linak, *Chemical Engineer, National Risk Management Research Laboratory Air and Energy Management Division*

James McCord, *Chemist, Center for Environmental Measurement and Modeling*

Marc Mills, *Environmental Engineer, Office of Research and Development*

John Offenberger, *Senior Research Chemist, Exposure Methods and Measurements Division*

Beth Owens, *Assistant Director, Health and Environmental Risk Assessment*

Lara Phelps, *Senior Advisor, Office of the Science Advisor*

Phillip Potter, *Center for Environmental Solutions and Emergency Response*
 Greg Sayles, *Director, Center for Environmental Solutions & Emergency Response*
 Kirk Scheckel, *Division Director, Land Remediation & Technology Division*
 Erin Shields, *Center for Environmental Measurement & Modeling*
 Jody Shoemaker, *Chemist, Exposure Methods and Measurement Division*
 Tom Speth, *Associate Director, Center for Environmental Solutions and Emergency Response*
 Kris Thayer, *Director, Chemical and Pollutant Assessment Division*
 Rusty Thomas, *Director, Center for Computational Toxicology & Exposure*
 Thabet Tolaymat, *Environmental Engineer, Center for Environmental Solutions and Emergency Response*
 Jim Voit, *Chemist, Center for Environmental Solutions and Emergency Response*
 Cavin Ward-Caviness, *Computational Biologist, Public Health and Integrated Toxicology Division*
 Tim Watkins, *Director, Center for Environmental Measurement and Modeling*
 Barbara Wetmore, *Toxicologist, Center for Computational Toxicology and Exposure*

Other EPA Attendees:

Heidi Bethel	Stiven Foster	Garret Nelson
Cheryl Brown	Earl Gray	Katie Paul Friedman
Wayne Cascio	Joshua Harrill	Minday Pensak
Kacee Deener	Cheryl Hawkins	Paul Randall
Naomi Detenbeck	Tala Henry	Michelle Rogow
Kathie Dionisio	Susan Hester	Elizabeth Sams
Nick Dugan	Erin Hines	Risa Sayre
Alice Gilliland	Anne Holleran	Imran Shah
Ann Grimm	Bryan Hubbell	Avanti Shirke
Scot Hagerthey	Michael Hughes	Larry A Sievers
Maria Hegstad	Sherri Hunt	Matt Small
Bryan Hubbell	Scott Jenkins	Jamie Strong
Sherri Hunt	Samantha Jones	Dawn Taylor
Scott Jenkins	David Katz	Laura Taylor
David LaRoss	Vasu Kilaru	Thabet Tolaymat
Taylor Lass	Steph Kim	Emily Trentacoste
Candice Lavelle	Christy Lambright	Scarlett VanDyke
Thomas Long	Taylor Lass	Jim Voit
Aly Lorenz	Michelle Latham	Cavin Ward-Caviness
	David Lattier	Leah Wehmas
Aaron Dixon	Monica Linnenbrink	Joe Williams
Nicki Evans	Madeline Luster	Catherine Wooster-Brown
Logan Everett	Charles Maurice	Suzanne Yohannan

Other Attendees:

Astrika Adams	Simone Genna	Alejandra Leija
Lara Beaven	Heather Golden	Charles Maurice
Nancy Beck	Melissa Horton	Thomas McOsker
Christine Chaisson	Quinn Jackson-Elliot	Ed Monachino

Chris Nietch
Stuart Parker
Mary Ross

Kate Schofield
Jessica Slomka
Hale Thurston

Linda Wilson
Tiffany Yelverton

Contractor Support:
Afroditi Katsigiannakis
Jaycee Mayer
Leah West
Sam Whately