

**U.S. EPA Office of Research and Development
Charge to the Board of Scientific Counselors (BOSC)
Subcommittee for the Air, Climate, and Energy Research Program
Virtual Meeting on October 12-14, 2021**

Introduction: The mission of the EPA Office of Research and Development (ORD) is to provide the best available science and technology to inform and support public health and environmental decision making at federal, state, tribal, and local levels. Having incorporated BOSC recommendations into the planning phase for ORD's Air, Climate, and Energy (ACE) national research program, ORD is now seeking BOSC input focused on implementation of the research portfolio.

The ACE research program includes nine research areas (RAs) which will be addressed over two ACE BOSC Subcommittee meetings in 2021. Each BOSC meeting will focus on specific themes and emphasize different elements of the ACE portfolio to illustrate core capabilities and innovative thinking to address critical partner research needs. By the end of this cycle, the ACE BOSC Subcommittee will have been provided an implementation overview of all nine ACE RAs and more in-depth information on a selected set of research deliverables (products and outputs). To illustrate ACE's integrated and partner-oriented approach, information will be provided at the October '21 BOSC subcommittee meeting on three areas of focus:

- 1) Characterizing source emissions and developing ambient measurement methods for air toxics and contaminants, especially those related to emerging pollutants of concern,
- 2) Understanding the impacts of a changing climate and developing solutions for adapting to those impacts, and
- 3) Modeling the impacts of the Nation's transforming energy and transportation systems.

The Agency is moving forward to tackle Administration priorities of addressing the climate crisis and environmental justice issues. Existing work under the current ACE strategic plan contributes to understanding and addressing these two issues. The meeting format will include an introduction to scientific challenges, examples of work within the ORD Research Centers to address these challenges, and an opportunity to interact with scientists leading specific research activities. Please note that only selected air-related aspects of PFAS will be covered in this BOSC subcommittee review, with the broader aspects of ORD's PFAS research portfolio being reviewed by the BOSC Executive Committee in a separate process.

Charge Questions:

Q1: The ACE research program is implementing research to develop new methods to quantify source and near-source emissions, as well as ambient levels, of toxic air pollutants and contaminants of emerging concern. These methods are needed to identify pollutant sources and levels of exposure for communities and individuals.

What suggestion(s)/recommendation(s) does the Subcommittee have on ORD's implementation of its air toxics and contaminants of emerging concern measurements methods research, and how this research will improve our understanding of these pollution sources and exposures, particularly for disproportionately impacted communities? [RA1, RA2, RA4]

Q2: Climate change is expected to continue to increase the negative environmental and human health impacts of wildfires, flooding, drought, and other extreme events. Developing the knowledge and

approaches to build resilience and adapt to these events is critical to preparing communities and protecting vulnerable populations and ecosystems.

What suggestion(s)/recommendation(s) does the Subcommittee have on ORD's implementation of research to understand effects of climate-driven changes on natural and human systems, adverse impacts on human health and the environment from climate stressors, and approaches to prevent or reduce these impacts? [RA6]

Q3: The Nation's energy and transportation systems are experiencing major transformations in response to economic drivers and to meet the Biden Administration's goal of net-zero carbon emissions by 2050. Understanding the dynamic changes in these complex, interconnected systems is important for understanding impacts of policies and technology changes on emissions of greenhouse gases, air pollutants, and other health and environmental impacts.

What suggestion(s)/recommendation(s) does the Subcommittee have on ORD's implementation of its research portfolio to gain a better understanding of how energy and transportation systems may evolve and the consequences for emissions and other impacts. [RA5]