The Future of the U.S. Weather Enterprise

The National Academies of Sciences, Engineering, and Medicine are planning to conduct a study that will outline a vision for the U.S. Weather Enterprise over the next 10-25 years and are reaching out to the weather community both to participate in the study and to help support it.

Motivation

The weather enterprise is in a time of rapid change. Advances in technology—from computing, artificial intelligence and communication to sensors and observation platforms—present opportunities and challenges for the weather enterprise. Innovations in other sectors, such as automated vehicles, increased air traffic, drones, and precision agriculture, are demanding more from the weather enterprise. We are on the brink of unprecedented improvements in forecasting, with hyper-local weather, subseasonal-to-seasonal (S2S) forecasting, probabilistic forecasting systems, impact-based forecasting, and earth system modeling offering promising prospects. The role of the private sector is evolving, with a new generation of companies deploying observations and advancing forecasts. While an energized and growing private sector opens up opportunities for exciting innovations, in some cases it may also create a more complicated landscape for the weather enterprise.

Discussions of how to improve weather forecasting capabilities in the United States bring many of these emerging challenges and opportunities to the forefront. Many questions have been raised during the last decade about how federal agencies support weather modeling, to what extent efforts at different agencies are coordinated, how best to coordinate federal efforts with the private and academic sectors, and how to ensure education and training keeps pace with technological innovation.

Proposed Statement of Task

The broad weather community will be engaged to develop a vision for the U.S. weather enterprise, identify a set of goals for advancing the enterprise during the next decade, and recommend critical investments, institutions, and coordination mechanisms to make rapid progress towards meeting these goals. Existing agency missions, laws and other Congressional guidance, strategic plans, and reports (e.g., research agendas, observational priorities) will serve as a foundation for the committee's analysis. Drawing upon a robust community engagement process, an ad hoc committee will author a consensus report addressing the following items:

- Describe the weather enterprise today
- Consider how the weather enterprise may change in the next few decades
- Develop a comprehensive ideal vision of a robust and successful weather enterprise for the next decade and beyond
- Recommend key steps to enable the weather enterprise to achieve the vision
Work Plan
This activity will be organized and managed by the National Academies’ Board on Atmospheric Sciences and Climate and will be conducted by an ad hoc committee of approximately 15-18 members. Efforts will be made to ensure that committee members reflect the complexion of the weather enterprise, including a mixture of academic, public sector, and private sector experts. The committee will design and facilitate a robust community engagement effort utilizing a combination of approaches, including requests for input, virtual engagement (e.g., website portal for materials related to the study, discussion board, webinars, archived presentations), and in-person engagement (e.g., committee information-gathering meetings, community workshops organized in coordination with professional society meetings, sessions at relevant workshops and conferences).

Supporting the Study
The National Academies are seeking support for this ambitious project from organizations across the weather community, including federal agencies, academia, industry, professional associations and societies, and individuals.

BASC Planning Team
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To learn more about this important study and how you can contribute, visit our website at http://dels.nas.edu/global/basc/weatherenterprise.

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