Webinar Meeting of the NOAA Science Advisory Board
September 9, 2019
Meeting Minutes

Location: Via Webinar

Public access location:
NOAA
1315 East-West Highway, SSMC 3
Room 8836
Silver Spring, MD

The presentation and documents for this meeting have been posted on the Science Advisory Board (SAB) website:

https://sab.noaa.gov/SABMeetings/SABMeetingDocuments.aspx#10424269-meeting-documents-for-9-september-2019-sab-meeting

SAB members in attendance:
Ms. P. Lynn Scarlett, Vice President for Policy and Government Relations, The Nature Conservancy (Chair); Dr. Robert L. Grossman, Frederick H. Rawson Professor and Jim and Karen Frank Director, Center for Data Intensive Science, University of Chicago; Dr. Everette Joseph, Director, National Center for Atmospheric Research (NCAR); Dr. Eugenia Kalnay, Distinguished University Professor, Department of Atmospheric and Oceanic Science, University of Maryland; Mr. Christopher Lenhardt, Domain Scientist, RENCI; Dr. Denise Reed, Professor Gratis, Pontchartrain Institute for Environmental Sciences, University of New Orleans; Dr. Robert Rheault, Executive Director, East Coast Shellfish Growers Association; Dr. Martin Storksdieck, Director, Center for Research on Lifelong STEM Learning and Professor, College of Education and School of Public Policy, Oregon State University; and Mr. Robert S. Winokur, Consultant (ret. NOAA, Navy)

NOAA senior management and Line Office representatives in attendance:
Mr. Kevin Wheeler, Deputy Chief of Staff for Policy, Office of the Under Secretary; Mr. Craig McLean, Assistant Administrator for Oceanic and Atmospheric Research; Mr. Harry Cikanek, Director, Center for Satellite Applications & Research, NESDIS; Ms. LeAnn Hogan, Science Advisor, NMFS; Dr. Bill LaPenta, OAR Office of Weather and Air Quality and Environmental Prediction Innovation Center (EPIC) Program Manager.

SAB working group representatives in attendance:
Dr. Brad Colman, co-chair of the Environmental Information Services Working Group; Dr. John

Snow, co-chair of the Environmental Information Services Working Group; Dr. Joellen Russell, interim chair of the Climate Working Group

Staff for the Science Advisory Board in attendance:
Dr. Cynthia Decker, Executive Director and Designated Federal Officer; Ms. Courtney Edwards; and Ms. Caren Madsen

Opening Statement of the Chair
Lynn Scarlett, The Nature Conservancy and Chair, NOAA SAB

Lynn Scarlett welcomed the attendees to the meeting and highlighted the one decision item for the Board on the day's agenda.

SAB Consent Calendar
Lynn Scarlett, The Nature Conservancy and Chair, NOAA SAB

- July 2019 SAB Meeting Minutes

Mr. Winokur made a motion to accept the item on the consent calendar; Dr. Storksdieck seconded the motion and it passed unanimously.

Recommendations from the SAB Environmental Information Services Working Group (EISWG) on the NOAA Environmental Prediction Innovation Center (EPIC) initiative.
Brad Colman, Climate Corporation and EISWG Co-Chair
John Snow, University of Oklahoma and EISWG Co-Chair

Summary

Lynn Scarlett reminded the SAB that the EISWG had updated the EPIC PowerPoint presentation prior to the meeting. She then opened the discussion by stating that several members of the EISWG attended the EPIC community workshop in Boulder in August 2019. Then between late August and early September, the EISWG had a series of virtual conversations about the EPIC initiative. These resulted in the strong endorsement by EISWG of the EPIC initiative, as described in the summary report of the community workshop prepared and presented on 8 August 2019.

Dr. Snow said that since the EISWG has legislative responsibility for monitoring initiatives such as EPIC (in the Weather Research and Forecasting Innovation Act of 2017, as amended in January 2019). Snow reviewed the purpose of the EPIC, the vision and mission, which came out of the August workshop. The working group initiated a review of the EPIC initiative last spring

Dr. Snow noted that on June 28, 2019, NOAA leadership discussed the EPIC priorities with the EISWG. Following that discussion, the EISWG was asked to provide input, but delayed until August workshop.

Dr. Snow went through the meeting summary recommendations found in the Carr et. al. Summary Deck. He said the goal of creating a culture of community cooperation may be the hardest one. Regarding sustained funding, he noted that Cloud computing is expensive and hoped they can convince one of the cloud computing groups to provide discount initially with idea being more business down the road if project continues.

Dr. Snow said the Boulder workshop focused around building a Cloud services community. He noted that the weather modeling community is different from the climate modeling community. It is much more independent and requires a high degree of openness and development of a community that works together. Dr. Snow went on to say that EISWG strongly endorses the EPIC program. Dr. Colman then went through the list of recommendations in the EISWG report letter.

Recommendation 1:

It is recommended that NOAA implement EPIC's governance structure and processes as soon as possible, with a focus on the managing institution, leadership team, and advisory boards, and providing the community clear statements of the EPIC vision, mission, and values.

Dr. Colman said the turnout of 200 at the Boulder workshop shows significant interest in the EPIC; the workshop leaders got input from various sectors in a diverse community. EPIC is all about leadership and being community focused. He noted that it's critical that NOAA put a leadership team in place that will be committed to the EPIC.

Recommendation 2:

It is recommended that NOAA work with the broader community to develop inclusive community engagement processes, and to anticipate and articulate the appropriate roles NOAA and other entities will play in EPIC.
Dr. Colman said the NOAA roles within the broader community have to be clearly articulated.

Recommendation 3:

It is recommended that early and direct efforts be made to welcome into the Unified Forecast System (UFS) research and development sandbox contributions from other dynamic cores, physical parameterization schemes, Earth-system observation strategies and data assimilation

techniques (atmosphere and ocean) and models (e.g., Model for Prediction Across Scales (MPAS), United Kingdom Meteorological Office (UKMO) Unified Model).
Dr. Colman said the diversity of this effort is important and that it's important that diverse communities grow and contribute to the UFS. He noted that the data simulation work in NOAA outperformed European counterparts.

Recommendation 4:

It is recommended that NOAA initiate a multi-agency R&D partnership program into which NOAA and other agencies contribute significant multi-year resources.
Dr. Colman said the budget is small and it's challenging to do a lot with a small budget. He said we have to be creative and find additional resources, working with the various research and development communities.

Recommendation 5:

It is recommended that NOAA organize its Cooperative Institutes that have existing capabilities in NWP and related areas into a nascent, distributed EPIC co-laboratory charged with quickly carrying out one or two narrowly focused R&D thrusts that have potential for near-term success.
Dr. Colman commented that NOAA should organize the CIs and look for ways to identify additional resources without having to spend more money (i.e. use the resources that already exist in the form of CI).

Recommendation 6:

It is recommended that NOAA immediately invest in and execute a Cloud implementation plan to promote community engagement and in support of research-to-operations.
Dr. Colman said that something similar to GPS-like capabilities could be created. He said the idea is to remove as many obstacles as possible, such as cost and accessibility of data in usable format.

The concluding comments in the EISWG presentation by Colman and Snow were:

- The EPIC initiative has great potential, yet realizing on that potential will not be easy
- Building trust and alignment across the broader enterprise will require a leadership team that is willing to work to remove obstacles and drive collaboration
- Success will require alignment around community priorities and a willingness across programs for individual sacrifice

- Early milestones and successes will be necessary to draw the broader community into the program; yet resources are sub-critical. Furthermore, the stability of long-term stable funding will be critical
- The findings and recommendations in the letter report were initial ones. The EISWG will continue to monitor progress with the EPIC initiative and submit additional recommendations when they are warranted.

Discussion

Chair Scarlett then asked the SAB members to provide feedback on the presentation and recommendations.

Dr. Storksdieck said he liked many of the big issues presented; he said it helped him understand the technical and cultural issues around the EPIC. He asked to what degree it's likely that Dr. Jacobs will respond favorably to the recommendations and if the working group feels Dr. Jacobs might prioritize them.
Dr. Colman said all of the recommendations are important and that it's important that the code be there as well as access to real-time data. He said global access to the data is a huge draw.
Dr. Snow said that, looking at the climate model, the working group would like to see a similar and parallel type of structure. He said the intent is to be open and transparent, and to provide support to those who want the data. He said a challenge is how to deal with the private sector and not get involved with a lot of proprietary issues.

Dr. Robert Grossman asked if there was anything in the recommendations about data being free, open, and accessible along with the source code for the models. Dr. Colman said this was contained in recommendation 6, that data put on the cloud would be open and accessible in at least near-real-time. This will be especially important to small users. John Snow also noted that for the community climate model, open access is key. He would like to see that in EPIC but realizes there could be a challenge for this with the private weather sector and its issues of proprietary use.

Mr. Winokur said he had no issues at all with the recommendations and supported them. However, he said he has questions about the private sector and the conspicuous absence of the private sector from the set of recommendations. He said that it looks like the weather community hasn't done anything collaborative in the past to address the issues. He said that is not quite true and there are many interactive interagency programs. He had one edit in the recommendation about management investing more in the Cloud. He said it's not up to the EISWG to tell NOAA to go and get more funding for the work.

Mr. Winokur also noted the absence of cybersecurity in the recommendations. He said cybersecurity is a major issue to deal with. He commented on another notable absence of the

internal management structure within NOAA, as related to the overall structure of EPIC. He also had a question as to what happens next and what will be done with the EISWG letter report.

Chair Scarlett said a cover letter will be drafted that will go from her, along with the attached recommendations, and that might be an appropriate place to address Mr. Winokur's concerns. She said the cover letter could address at least one aspect of the recommendation comments. Mr.Winokur asked if there were any additional independent recommendation from EISWG, or if they were just accepting and transmitting the recommendations that came out of the workshop.

Dr. Snow said the Request for Information (RFI) laid out some of the issues in the spring and that there is an overlap. He said the EISWG has gone beyond the workshop information and had looked at other information before the recommendations were drafted. Mr. Winokur said that he was trying to figure out the value added by the EISWG.

Chair Scarlett asked if there were concerns among the SAB members that would prevent an SAB vote on the EPIC recommendations.

Dr. Robert Rheault asked if, in relation to cybersecurity, EPIC was an international or just a domestic effort. He also wanted to know if EPIC would be only an internal NOAA effort. Dr. Snow said it was just domestic. He also noted the working group does not think it should be just within the agency, where it will be constrained by a large number of government regulations. He used the NOAA Cooperative Institutes (CIs) as an example. He said there was a history of independent organizations creating what was needed without a large number of regulatory constraints. He mentioned the idea of independence and possibly creating a "meta CI".

Dr. Colman said the cybersecurity issue was one that the EISWG didn't call out but said the group can go back and discuss it further. He said the topic wasn't absent at the workshop itself. He said the working group will address it more clearly in the next report.
Dr. Rheault said he was prepared to approve the recommendations of the EISWG. Chair Scarlett said the SAB could approve the recommendations but still acknowledge that there are follow-on items to pursue later.

Dr. LaPenta said he appreciated the recommendations by the EISWG and the community and suggested prioritizing the recommendations. Dr. Snow said that this is an evolving topic and that the EISWG can bring more recommendations forward in the future.
Dr. Reed made a motion to approve the recommendations. Dr. Storksdieck seconded. Chair Scarlett called for a vote to approve the recommendations. They were approved unanimously.

Chair Scarlett suggested that the EPIC topic be further developed for subsequent recommendations so that the EISWG endorsed recommendations can be moved forward with a letter to NOAA. Dr. Colman said he appreciated the feedback and being able to move on the recommendations in a timely way.

Public Comment Period

Dr. Decker noted that there were no public comments submitted via webinar or by anyone in the room.

Review of Actions

Dr. Decker said she will send around a list of actions from the meeting.

Adjourn

The meeting was adjourned at 12:00 p.m.