



December 2015

Commission on the Weather, Water, and Climate Enterprise

2015 Report

Mary M. Glackin, Commissioner

A comprehensive report was provided to AMS Council in September 2015. See <http://www2.ametsoc.org/cwwce/index.cfm/reports-and-studies/cwwce-report-to-council-sept-2015/>. This report provides highlights of accomplishments since that time and supplements more detailed information on the [Commission web site](#).

Board on Global Strategies (BGS) – Under the leadership of Chair Melinda Marquis, BGS has continued its focus on engagement with international visitors. They will participate in the 2016 NOAA/WMO International Workshop. Also they have worked to co-sponsor five sessions at the annual meeting. The Energy Committee continues to be very active and has a jam-packed program with its 7th Conference on Weather, Climate, and the New Energy Economy (7Energy). They continue to explore social media with the addition of a twitter account. Other BGS highlights are shown in the attached. This concludes Melinda’s term as Board Chair. We greatly appreciate her efforts as inaugural chairs. They have exceeded our expectations. Steve Zebiak will assume the Chair in January.

Board on Enterprise Economic Development (BEED) - Planning for the 2016 AMS Washington Forum is in full swing under the leadership of Chair, Shawn Miller. It will be conducted on April 12-14, 2015, in the AAAS Building. The 2016 theme is “Leveraging Environmental Intelligence to Enhance Risk Management.” This theme provides continuity with the risk management discussions conducted at the AMS Summer Community Meeting, and it also provides an environment in which we can further engage on practical uses of Earth Sciences with both policymakers and new areas of the private sector. Additional BEED items are highlighted in the attached.

Board on Enterprise Strategic Topics (BEST) - The 4th Symposium on the Weather, Water and Climate Enterprise will kick off on Monday, January 11th with key note remarks from Paul Pisano, winner of the Kenneth Spengler award. The symposium is also comprised of 5 panel discussion sessions covering topics of weather risk and business, water needs in developing countries, partnerships between the US and Asia, earth system prediction and the North American Climate Services Partnership (NACSP). There are also a few general presentation sessions covering enterprise topics for a Weather-Ready Nation and water needs in developing nations. A link to the full program can be found here: <https://ams.confex.com/ams/96Annual/webprogram/4WXCLIMATE.html> Co-chairs Andrea Bleistein and Chris Strager will step down in January and incoming Chair Sheldon Drobot will assume leadership. We very much appreciate Andrea and Chris’s leadership especially in their efforts to assist the new committees under the BEST.

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BEST's Climate Services Committee chaired by Stephanie Herring continues to work with AMS staff to launch a Climate Services Provider Directory. AMS is identifying a vendor to provide the underlying technology. Following beta testing, the Committee is developing plans to roll out this fee for membership/advertising service. While focused initially on climate, it will be extensible to other areas with Service Key Codes.

Weather Enterprise Economic Evaluation Team (WEEET) - As reported in September, the WEEET has been unsuccessful in locating a source for needed funds. The CWWCE and WEEET leadership discussed a number of follow-on opportunities given this disappointing result of two years effort. Two options were identified. One, is an AMS Statement from the concepts that the WEEET developed. Work is underway to develop a précis for Council consideration. The second option, if the first one does not materialize, will be the pursuit of a publication in BAMS. The goal of either option is to allow the information developed by the WEEET to date to become openly available so-as to become the building blocks if and when such an effort becomes a funded reality. Chair Scott Rayder, Bryce Ford, and CWWCE Past Commissioner, Matt Parker will populate the committee to conclude these efforts.

Board on Enterprise Communications - The report from the 2015 AMS Summer Community Meeting is being finalized and will be available shortly. The BEC has agreed the theme of the 2016 meeting will be centered on Water; the meeting will be held in Tuscaloosa AL on July 19-21st. A town hall meeting will be held on Wednesday, January 13th to solicit community input on the meeting. Due to other obligations, co-chair Eileen Shea will step down in January. Doug Hildebrand will continue as chair.

Research to Operations Forum – The Commission is exploring the desirability of hosting some virtual or physical forum that would be designed to connect research ready to transition to application to interested parties. It will be informed by the AMS Policy Programs December workshop on this topic.

Steering Committee – The Steering Committee of the Commission continues to be active. Attached is the agenda for their meeting scheduled on January 9th. Note this is the first year the Commission has organized a meeting for the chairs of the boards and committees to assist them in fulfillment of their duties. This agenda is shown as well in the attachment.

This concludes my term as Commissioner. The volunteer spirit of AMS members is amazing and it is a privilege to work with them. I look forward to assisting in-coming Commissioner Bill Mahoney and Future Commissioner Pam Emch.



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**AMS Commission on the Weather, Water, and Climate Enterprise
(CWWCE)
Commission Leadership Meeting**

**Saturday, 9 January 2016
New Orleans, LA**

9:00 to 2:00 PM (with working lunch)

Attendees: Current and incoming board and committee chairs, Commissioners, AMS staff, interested members of the Commission Steering Committee

Goal: To ensure CWWCE leadership have appropriate knowledge of the Commission, AMS procedures, etc. and to identify any needed changes in Commission procedures and/or strategic priorities.

Tentative Agenda:

8:15	Breakfast/Informal Discussions
9:00	Welcome/Introductions (Commissioners)
9:15	Overview of CWWCE history, goals, objectives, and trends (Bill Mahoney and Matt Parker) <ul style="list-style-type: none">• How do our boards and committees support the mission?• What adjustments, if any, are needed• What are the objectives of the AWF, SCM, Symposium, etc.• What adjustments, if any, are needed• What are the objectives of the AWF, SCM, Symposium, etc.
10:15	Meeting Planning (Commissioners and Sotiria Qirjazi) <ul style="list-style-type: none">○ Discuss meeting planning policies, procedures, timelines○ Best practices in meeting planning and coordination
10:45	Break
11:00	AMS Policy Program – Overview and Linkages (Paul Higgins)
11:30	AMS Communications overview and linkages (Tom Champoux)
12:00	Discussion of CWWCE website maintenance (Brian Mardirosian)
12:30	Lunch – Website Tutorial
1:00	<ul style="list-style-type: none">• Board and Committee Engagement in upcoming Commission Meetings:

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	<ul style="list-style-type: none">○ AWF 2016 (Shawn Miller)○ SCM 2016 (Doug Hilderbrand)○ NNoN Workshop (Chris Strager)○ 2017 AMS Annual Meeting/CWWCE Symposium (Andrea Bleistein/Sheldon Drobot)
1:30	Research to Operations: How might the Commission support this critical area? (tentative; Commissioners)
2:00	Adjourn



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AMS Commission on the Weather, Water, and Climate Enterprise (CWWCE)

Steering Committee Meeting

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Saturday, 9 January 2016

New Orleans, LA

3 – 5:30 PM

Attendees: Steering Committee members, CWWCE Board Chairs, Commissioners and interested members of the Commission and AMS at large

Goal: To provide a status including 2016 plans of the Commission to the Steering Committee and seek their counsel on significant activities

3PM	Welcome and Introductions - Commissioners
3:15 PM	Board Reports and 2016 Plans: <ul style="list-style-type: none">○ BEED – Shawn Miller○ BEC – Doug Hilderbrand○ BEST – Andrea Bleistein and Chris Strager○ BGS – Melissa Marquis
4:15	Nationwide Network of Networks Workshop – March 8 and 9 (John Horel)
4:30	How can the Commission best support NOAA's Big Data Project? (Shawn Miller)
4:45	AMS Plans for Service Provider Directory (tentative) OR Ad Hoc Committee on Frequency Allocation
5:00	CWWCE's role in Research to Operations
5:15	Wrap up and adjourn at 5:30



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AMS Board on Enterprise Economic Development (BEED)

Final Report for 2015

Submitted by: Shawn Miller, Chair, AMS BEED

Primary Activities

Board Meetings: The BEED conducted meetings on the following dates:

- 5 January 2015 (AMS Annual Meeting in Phoenix)
- 12 May 2015 (telecon)
- 14 July 2015 (telecon)
- 17 September 2015 (telecon)
- 13 November 2015 (telecon)

The next BEED meeting will occur at the AMS Annual Meeting in New Orleans, on Thursday, January 14.

Accomplishments: 2015 AMS Washington Forum (AWF)

The 2015 AWF was held April 21-23, at the AAAS Building where AMS has offices in Washington, D.C. The meeting theme was “Applied Decision Support: Meeting User Needs.” Feedback on the event was resoundingly positive. The BEED Chair generated a meeting report, with heavy contributions from student rapporteurs and other members of the planning committee, which has been posted to the AMS BEED website. Attendance including speakers and participants was down from 2014 but still well over 100. The drop in attendance was due in part to an overlapping NWS meeting the same week in DC; the AWF planning committee has coordinated with NOAA to ensure this does not occur again in 2016.

Plans: 2016 AMS Washington Forum (AWF)

The BEED Chair is leading the planning of the 2016 AMS Washington Forum, which will be conducted on April 12-14, 2015, in the AAAS Building. The kickoff planning meeting occurred on June 15, 2015. Subsequent planning meetings have occurred and will occur every month, to continue through March 2016. The 2016 theme is “Leveraging Environmental Intelligence to Enhance Risk Management.” This theme provides continuity with the risk management discussions conducted at the AMS Summer Community Meeting, and it also provides an environment in which we can further engage

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on practical uses of Earth Sciences with both policymakers and new areas of the private sector.

The following sessions are confirmed to be part of the 2016 AWF Agenda:

- 1) Theme Session (this session will be exempt from the modified Chatham House Rule normally applied at the AWF, so that press may be present)
- 2) Availability and usage of NEXRAD-derived data products via the NOAA Big Data CRADA
- 3) Space Weather and associated risks/mitigations
- 4) Environmental Security
- 5) Water Resources and associated risks/mitigations
- 6) Renewable Energy and associated risks/mitigations
- 7) Congressional Staffers
- 8) Federal Agency Leads

Each of these sessions are being developed at this writing. Ideas for special guest speakers are also being vetted and some outreach has already occurred for these. Finally, we are working to at least maintain the level of student involvement from the 2015 event, as this was universally viewed as a success.

Other 2015 BEED Notes and Plans for 2016

The remainder of the BEED activities have been carried out by the respective committees; detailed reports for these are included later in this document.

The table below summarizes the 2015 BEED membership and proposed membership for 2016. Due to his excellent contacts and hard work in support of the BEED to date, Tom Fahy will be extended for another year in 2016. Heidi Centola has been selected as the incoming chair to succeed Shawn Miller in January 2017; she will spin up on BEED leadership during 2016 as a member. The chair of the COEIS (Warren Qualley) will be rolling off due to work commitments; an invite is out for his replacement. Kevin Stenson will continue as chair of the FWCRM committee to transition leadership to his replacement (Tom Duncan). Finally, invites have been sent to prospective additional BEED members in the academic sector to boost representation there.

Committee on Open Environmental Information Services (COEIS): Accomplishments and Plans

Committee Meetings: The COEIS conducted meetings on the following dates:

- 5 January 2015 (Phoenix)
- 9 April 2015 (telecon)
- 4 June 2015 (telecon)
- November 2015 (proposed) (telecon)

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- January 2016 (proposed) (New Orleans)

2015 Activities- Completed

Town Hall at 2015 AMS Annual Meeting: Open Environmental Information

Moderator: Matthew Parker – Senior Fellow Meteorologist, Savannah River National Laboratory

Panelists: Laura Furgione – Deputy Director, NWS; Barbara Ryan – Executive Director, Group on Earth Observations (GEO); Michael Seablom – Chief Technical Officer, Science Directorate, NASA HDQ; Ray Ban – Ban and Associates, LLC

Details about the Town Hall meeting can be found on the AMS CWWCE website:

<http://www2.ametsoc.org/cwwce/index.cfm/committees/committee-on-open-environmental-information-services/meeting-minutes/>

Sub-group on AMS statement on Full and Open Access to Data

Chris Sloop is chairing this sub-group which will examine this statement and possibly suggest revising portions of it.

Involvement in AMS Summer Community Meeting

The COEIS participated in a panel discussion on the Big Data CRADA. Paul Pisano represented the group (Mohan Ramamurthy was also on the panel representing the Open Cloud Consortium, one of the collaborators on the NOAA Big Data CRADA). An outcome of this panel was the idea of the COEIS coordinating a Hackathon at the 2016 AMS Annual Meeting. Several discussions and e-mail correspondences occurred over several weeks with the decision made to not conduct one, because 1) there wasn't enough time to set it up, and 2) we were unsure of the framework and who the participants would be. However, we are still in discussions with NOAA about how the AMS can help NOAA socialize the Big Data CRADA, possibly doing some activity at the AMS meeting.

2015-2016 Activities- In Process

AMS Annual Meeting

See last item above. Also, NOAA has approached the COEIS to be a part of the International Segment at the AMS meeting to discuss Big and Open Data.

AMS Statement on Open Data

A sub-group, headed by Chris Sloop, is reviewing this statement to determine if revisions are needed. If so, the sub-group will bring it to the entire COEIS membership with recommended changes. If agreed to, the COEIS will follow AMS process to recommend the revisions.

COEIS Membership and Updates for 2016

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The tables below reflect the 2015 and proposed 2016 memberships for the COEIS. The only difference is that Warren Qualley, who has served the COEIS, BEED and CWWCE extremely well since the inception of the COEIS, is stepping down as chair. A replacement has been selected and contacted, but as of this writing is not confirmed to be the new chair in 2016.

Intelligent Transportation Systems/Surface Transportation (ITS/ST) Committee: Accomplishments and Plans

Committee Meetings: The ITS/ST Committee conducted meetings on the following dates:

- January 6, 2015 (Phoenix)
- July 17, 2015 (telecon)
- November 2, 2015 (telecon)

The next ITS/ST meeting is scheduled to occur on Thursday, January 14, 2016, at the AMS Annual Meeting in New Orleans.

AMS Annual Meeting

January 2015 AMS Annual Meeting Transportation Sessions and Presentations in Phoenix:

AMS Road Weather Applications Session (Tuesday, 6 January 2015, 3:30PM-5:30PM MST)
Agenda:

Session 7B

[Road Weather Applications](#)

Host: **31st Conference on Environmental Information Processing Technologies**

Cochairs: Paul Pisano, Federal Highway Administration; Ralph Patterson, NarwhalMet; James P. Koermer, Plymouth State University (Note: Brenda Boyce substituted for Paul Pisano and Leigh Sturges substituted for Ralph Patterson)

- FHWA Road Weather Management Program Integrated Mobile Observations (IMO) Project **Brenda C. Boyce**, Booz Allen Hamilton, Washington, DC; and P. Pisano and G. N. Guevara Real-time Applications of Weather and Pavement Data Generated by Mobile Platforms
- **Paul, O.G. Heppner**, Global Science & Technology, Inc., Greenbelt, MD Evaluation of MoPED Observations in Surface Analyses
- **John D. Horel**, University of Utah, Salt Lake City, UT; and D. Xia and P. O. G. Heppner The Pathfinder Project: Collaborative Messaging for Traveler Information
- **Paul Pisano (Presented by Brenda Boyce)**, Federal Highway Administration, Washington, DC; and D. Carpenter, K. Barjenbruch, L. Dunn, R. Patterson, and L. Sturges Applying Lessons Learned from Hurricane Prediction and Preparedness in Road Weather - A Comparison of Blizzards versus Hurricanes

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- **Jeremy Paul Duensing**, Schneider Electric, Minneapolis, MN Development of an Index for Estimating Road Weather Severity Based on Energy
- **Michael E. Baldwin**, Purdue University, West Lafayette, IN; and K. Hoogewind, C. Miller, and D. Snyder Developing an Inexpensive Dust Detection and Alert System
- **Ken R. Waters**, NOAA/NWS, Phoenix, AZ; and D. Leins Cloud Impacts on Pavement Temperature in Energy Balance Models **Curtis L. Walker**, University of Nebraska, Lincoln, NE

The next AMS Annual Meeting will be held in New Orleans, LA, from 10-14 January 2016.

For the upcoming 2016 AMS Annual Meeting Paul Pisano and Brenda Boyce served on the AMS Environmental Information Processing Technology (EIPT) Conference Planning Committee and with Ralph Patterson from the Narwhal Group. There will be two sessions during the conference: “Weather and Roads Part I & Part II”. Both sessions will be held on Thursday, January 14th.

Paul Pisano (team lead for the FHWA Road Weather Management Program), a member of the American Meteorologist Society and our AMS ITS and Surface Transportation Committee, has been awarded the 2016 Kenneth C. Spengler Award. He received the award for “For working strategically and collaboratively to raise awareness of weather's impact on surface transportation and guiding the development of tools to enhance public safety.”

The Kenneth C. Spengler Award

The Kenneth C. Spengler Award is presented to an individual, team, or organization whose efforts have contributed to the growth of the weather and climate enterprise while materially fostering a sense of community and creating synergistic linkages between the public, private, and government sectors as well as the user community.

In addition, Paul Pisano has been asked to be the key note speaker at the conference.

AMS Washington Forum

April 2015 AWF: There were two transportation sessions:

1. Marine
 - a. Moderator: Richard Spinrad, NOAA
 - b. Panelists: Neil Jacobs, Panasonic Avionics Corporation; Jennifer Sprague, NOAA/NWS; Peter McComb, MetOcean Solutions
2. Rail, Trucking, & Surface
 - a. Moderator: Brenda Boyce, Booz Allen Hamilton
 - b. Panelists: Rick Nelson, AASHTO; Michael Pack, CATT; Jeff Usher, Association of American Railroads; Rebecca Brewster, American Transportation Research

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Presentations are currently posted at

<https://ams.confex.com/ams/AMSWF15/webprogram/meeting.html#Tuesday1>.

April 2016 AWF: Brenda Boyce has been participating in the AWF Planning and sessions are still being decided.

AMS Summer Community Meeting

At the meeting, there was one transportation session. The details are as follows:

1. Pathfinder: Improving Collaboration between State Departments of Transportation and the Weather Enterprise
 - a. Moderator: Brenda Boyce, Booz Allen Hamilton
 - b. Panelists: Chad Hahn, NWS WFO Cheyenne; Julie Gondzar, DayWeather; Kevin Cox, Wyoming DOT (Kevin was unable to attend due to fighting a wild fire with the National Guard – Paul Pisano, FHWA Road Weather Management Program stood in for him).

BAMS Article

There is a draft proposal to submit an article to the Bulletin of the AMS (BAMS) covering the history, current state, and projected future of road weather support. Mike Chapman and Curtis Walker have led this project, with some progress being made. Progress has been made over the past few months and we are expecting a rough draft by the AMS Annual Meeting. This will be a continuing project for the upcoming year.

ITS America, May 31 – June 3, 2015

Gabe Guevara, FHWA RWMP, and Brenda Boyce, Booz Allen Hamilton provided a training session on road weather and demonstrated the Weather Data Environment to encourage use of weather and road weather during application development for surface transportation.

Mobile Observations Subcommittee (MOS):

The mobile observations subcommittee is in the process of reviewing their terms of reference to expand the role of the subcommittee. During our last meeting, the committee discussed adding reference to automated vehicles.

The subcommittee is also putting together dictionary terms that can be used with AMS.

Miscellaneous Items

Paul Pisano continued to provide updates from the U.S. Department of Transportation, which are of great interest to members of the Committee. Kathy Ahlenius, the new Chair

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of the Transportation Research Board (TRB) Weather Committee has also been active participant and has provided excellent information. Art Handman, another *ex officio* member of the committee has been keeping members of the Committee on ITS America's activities in the weather area. The Committee provides an excellent forum to cross-feed information between the various sectors and most *ex officio* members play an important role in that process.

The AMS Committee web site is now active and has the direct link:

<http://www2.ametsoc.org/cwce/index.cfm/committees/committee-on-intelligent-transportation-systemssurface-transportation/>

ITS/ST Committee Membership and Updates for 2016

The tables below reflect the 2015 and proposed 2016 memberships for the ITS/ST Committee.

Financial Weather/Climate Risk Management Committee: Accomplishments and Plans

Primary Activities

Committee Meetings: The FWCRM conducted meetings on the following dates:

- 6 January 2015 (Atlanta)
- Every 2nd Thursday of the calendar month (Feb – July) (TELCOM)
- Planned meeting every 2nd Thursday through the end of the year (TELCOM)

Accomplishments:

Book Deal:

It was decided by the committee that individuals from the group would independently approach the book deal rather than approach it as a committee. We were concerned that not everyone could commit such time to such a project. And, it would severely curtail any additional education or outreach.

AMS Annual Meeting 2015:

Town Hall Meeting: Weather Risk Management: What Does it Mean and Where is it Going?

One of the challenges we have found as committee is defining Weather Risk Management. As such we thought if *we* are challenged by any of the current definitions then those in the community are likely challenged to explain it as well.

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The term “Weather Risk Management” means many different things across our professional community. Weather trading, commodity trading, insurance, reinsurance and hedging are all terms of art. But what does it all really mean?? Who protects their business from weather risk? What information do they need in order to ‘manage weather risk?’ What is weather risk?? What does Weather Risk Management mean for meteorologists? What opportunities does it present? How have those opportunities changed since the first financial products were introduced in the late 1990s? Where is the market headed and what does that mean for information providers, experts, and customers? Join our panel of experts as we discuss the future for Weather Risk Management.

The event was well attended – even though it conflicted to the university night. It was especially well attended by students, perhaps indicating the awareness that upcoming generation of meteorologist’s interest in this subject matter as professional choice.

Education and Outreach:

Education and Outreach are two main goals of the committee. As such we felt that having a social media presence would be a first good step to act as a turntable for the American Meteorological Society as we look to leverage the committee’s practical experience and distribute pertinent information as necessary.

We now have a presence on Facebook **AMS Committee on Weather and Climate Financial Risk Management** and Twitter **@AMSWxClimoRisk**.

Enhanced website with updated committee membership, minutes, and education articles.

It is worth noting that committee debating quite extensively regarding the proper use of social media versus the website. We determined the website would act as a central hub for education material whereas social media would highlight and current topics and trends in the industry.

Plans:

2016 AMS Annual Meeting

After ramping up from an introductory short course at AMS Annual Meeting 2014 to a town hall meeting at AMS Annual Meeting 2015 we think a more enhanced offering was needed for AMS Annual Meeting 2016. The goal is interact with conference/symposium tracks with established committees/conferences

We will partner with:

Seventh Conference on Weather, Climate, and the New Energy Economy

- 1 slot
- Panel Format and/or case stud(ies)
- Topic: *Weather Risk Transfer (Derivatives, ILS, Cat Bonds, Insurance, Reinsurance....) as it relates to the energy industry*

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Fourth Symposium on the Weather, Water, and Climate Enterprise

- 1 slot
- Panel Format and/or case stud(ies)
- Topic: *Weather Risk Transfer (Derivatives, ILS, Cat Bonds, Insurance, Reinsurance....) as it relates to the supply chain and/or capital markets*

2016 AWF

- Exact topic TBD however it will likely relate to the use of big data *analytics* used by insurance/reinsurance industry and will serve as a bridge from topics discussed at the 96th AMS Annual Meeting.

FWCRM Committee Membership and Updates for 2016

The tables below reflect the 2015 and proposed 2016 memberships for the FWCRM Committee. Four new members are being added (Andy Siffert, Ian Palao, Max Vido and Josh Gugel). Four current members, as well as the chair (Kevin Stenson) are being extended one year (Heidi Centola, Stephen Bennett, Matt Coleman, and Ian Giammanco). Tom Duncan has been nominated as the chair beginning in 2017; Kevin is extending one year primarily to help bring Tom up to speed in that role.

Weather Enterprise Economic Evaluation Team (WEEET): Accomplishments and Plans

Potential funding of \$500K in support of the WEEET was announced at the AMS Commission on the Weather, Water and Climate Enterprise Steering Committee Meeting in conjunction with the Washington Forum in April 2015. This amount of funding would have allowed to the WEEET to get started in pursuit of an RFI, however, personnel changes at the sponsoring organization during the year made it necessary to pull back the funding offer. Certainly, this was a disappointment, but the CWWCE and WEEET leadership discussed a number of follow-on opportunities. Two options are now being pursued. One, a proposal to development an AMS Statement from the concepts that the WEEET has developed is planned in the coming months. The second option, if the first one does not materialize, will be the pursuit of a journal-quality publication in BAMS. The goal of either option is to allow the information developed by the WEEET to date to become openly available so-as to become the building blocks if and when such an effort becomes a funded reality.

Membership on the WEEET consists of Scott Rayder (Chair) and Bryce Ford, now that the writing and funding phases are complete. CWWCE Past Commissioner, Matt Parker also continues to provide guidance. We recommend that this team remain in-tact as the options cited above are being pursued.



**AMS Board on Global Strategies
End-of-Year Report August 2015
Submitted by Melinda Marquis, Chair**

Note: Updates to the Mid-Year Report are provided in blue text, and when appropriate, items that were included under the “plans” sections in the mid-year report have been moved in this document to the “accomplishments” sections.

Board on global Strategies (BGS)

Accomplishments

This year so far, the AMS BGS is working to increase the presence, visibility, and coordination of international topics and participants at the AMS Annual Meeting, beginning in 2016. To this end, the BGS is organizing two sessions in the Symposium of the Weather, Water, and Climate Enterprise, and jointly sponsored by the Conference on Hydrology. The sessions are titled “Challenges in Meeting Water Needs for Cities in the World’s Developing Nations,” and aim to address economic, engineering and institutional barriers impeding acquisition and conveyance of sufficient water supply, sanitation of water resources, and waste-water management in the context of rapid population growth. These issues are especially severe for residents of crowded urban slums who are often exposed to unsafe water supplies and other water-related hazards. Extremes and changes in weather and climate, as well as by international trans-boundary water resources management issues, are also in the call for papers. [The first session will provide talks by people who submitted abstracts, and the second session will provide time for two invited speakers and panel discussion with plenty of time for interaction with audience members.](#)

To further advance our efforts to promote and enhance international topics at the AMS Annual Meeting (AAM), Angel McCoy is monitoring/facilitating additional presence and coordination at the 2016 AAM, e.g., with the Peter J. Lamb Symposium - Helping Africa to Help Itself and with the 19th Atmospheric Science Librarians International Conference.

Additionally, the BGS is co-sponsoring five special sessions on U.S. - International Partnerships, all organized by Ken Carey:

- Innovative Academic/Public/Private Partnerships Within and Across Economic Sectors between US and Asia (e.g., financial, insurance, transportation, agricultural, health, energy, etc.)

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- Activities and Enhancements Resulting from Joint Operational, Research and Prediction Activities involving Tropical Meteorology (e.g., hurricanes and typhoons), Severe Storms and Coastal/Marine Flooding and Inundation in the US and Asia

- Integration of In-situ and Satellite-derived Observations into Data Assimilation and Weather, Water and Climate Modeling Systems for the Improvement of Forecasts

- Advancing and Leveraging Research into Operations, and Operations Feedback into Research Between and Among International Partners

- Working Toward a More Weather, Water and Climate-Ready World—Issues and Opportunities

Plans

The BGS will coordinate with NWS (Dan Beardsley and Caroline Covington) to contribute to the NWS-WMO International Workshop at the 2016 AMS Annual Meeting. The BGS Chair has added the above sessions to the schedule that will be provided to the NWS-WMO international workshop participants with the hope that they will attend these sessions and contribute to discussions in them. The BGS Chair has asked that Ken Carey, Renee Leduc Clark, and Steve Zebiak be invited to the NWS-WMO workshop.

The board plans to continue efforts to expand the presence of content (talks, posters, etc.) at the AMS Annual Meetings that have an international perspective.

The BGS will consider facilitating conversations with AMS CWWCE Commissioners and other AMS leadership about whether an MOU with the American Society of Civil Engineers (possibly the ASCE Committee on Adaptation to Climate Change) would be helpful. The Water Resource Committee is collaborating with this group and may co-host a workshop with ASCE in the coming year. The WRC is entertaining questions such as: What are the costs and benefits of formalizing a collaboration between AMS and ASCE? Specifically, how would an MOU facilitate interaction? Who would do the work of establishing an MOU? Would the bulk of the work to organize a jointly sponsored workshop need to be done volunteers? Would the AMS provide any staff to support such a workshop, along the lines of the support that Gary Rasmussen provided to the BEED in recent years to help organize the AMS Washington Forum?

Lastly, under Steve Zebiak's leadership, the BGS will continue to look for ways to coordinate with the WMO Global Framework for Climate Services (GFCS).

Energy Committee (EC)

Accomplishments

The Energy Committee (EC) and Renewable Energy Subcommittee (RES) organized and hosted the 6th Conference on Weather, Climate, and the New Energy Economy (6Energy), at the AMS Annual Meeting in January 2015, Phoenix. 6Energy was a successful event with attendance ranging from 60-150 people. We received very positive feedback from attendees and AMS staff regarding our conference. The MJO symposium was integrated into 6Energy this year and it went well. We also did a joint session with the Artificial Intelligence committee which covered very interesting joint topics.

The Energy Committee (EC) organized and hosted a town hall meeting (THM) called “Applying Big Weather Data to Address Today’s Energy Challenges” at the AMS Annual Meeting-Phoenix. The THM had good attendance with several members of the utility community. The EC hosted a Happy Hour reception immediately following the THM which had a great turnout! We were able to secure 10 sponsors for the Happy Hour event.

The Energy Committee participated in the Student Conference in which members of our team presented to the students on Sunday afternoon. The feedback from the Student committee was very positive and the students seem to enjoy the panel discussion and engagement.

The Energy Committee co-sponsored the third annual California Utility Forecasting Meeting at the California Independent System Operator (CAISO) in April of 2015. This event brought together the California Utilities to discuss operation utility challenges such as emergency operations and renewables integration.

The Energy Committee was a promoting sponsor of the International Conference Energy & Meteorology in June 2015. Several committee members were in attendance and we were proud to promote and attend the event.

The Energy Committee is currently sponsoring a forecasting challenge that is being run this summer by a group of students at PSU. The EC has assisted with data availability and prizes for the contest winners. [The EC has been able to provide the winner with a travel grant to attend the 2016 annual meeting in New Orleans and an invitation to our committee meeting.](#)

The Energy committee (EC) and Renewable Energy committee (RES) are organizing and will host the Seventh Conference on Weather, Climate, and the New Energy Economy (7Energy), January 2016, New Orleans. The conference will take place over a four-day period during the AMS Annual Meeting.

The EC has elected to have four subcommittees to focus on specific goals for the 7Energy.

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- 1.) Outreach to the Utility Community – to encourage more presentations that engage the utilities. We modified the Call for Papers to encourage abstracts focused on utilities as we would like to have specific sessions focused in this area. We are also in the process of organizing ideas around a Town Hall Meeting.
- 2.) Promote AMS Annual Meeting to the Broader Energy Community – to promote Annual Meeting energy community (and to recruit new members to AMS). The committee is also planning a networking event. The networking event will be immediately following the THM (preference is Monday evening) similar to previous years.
- 3.) Education – to engage the student conference and hold a short-course at the 2016 meeting. In addition, we are looking to have another Weather Challenge in the summer of 2016 which we will promote throughout the AMS annual meeting, especially at the student conference.
- 4.) Social Media – We will be revamping all of our social media efforts as a tool to promote our committee and reach out to others in the field, especially students.

The EC has organized several joint sessions to promote the different energy sectors being represented during 7Energy. These joint sessions include collaborations with the MJO Symposium, Conference on Climate Change, the Artificial Intelligence Committee, and the Financial Risk Committee.

The EC has organized a Town Hall Meeting which will be taking place on Monday night during the annual meeting in New Orleans. This Town Hall will be moderated by AMS President Elect, Matt Parker and will focus on how utilities are integrating renewable forecasts into their operations.

The EC has worked with the Conference on Climate Change to organize a Presidential Themed Joint Session. This will be held on Wednesday morning and we will be focusing on how the energy infrastructure is adapting to climate change and the research supporting this effort.

The EC has partnered with NCAR to help support a session at the Student Conference in New Orleans. Our committee members will be helping to review student resumes and provide the students with helpful feedback.

The EC has established a twitter account to share relevant information regarding the energy enterprise. We will also leverage this social media to promote 7Energy including live tweeting from the conference.

Plans

The Energy committee (EC) has submitted approval for 2016 membership changes and plans to notify the newest members of the committee at the annual meeting in New Orleans.

December 2015

The Energy committee (EC) and Renewable Energy committee (RES) are planning to begin initial organization of the eighth Conference on Weather, Climate, and the New Energy Economy (8Energy), which will take place at the 2017 AMS Annual Meeting.

The EC is planning to develop multiple subcommittees in 2016 to focus on specific goals for the committee, including 8Energy planning. The planned sub-committees are listed below:

- 1.) Utility Outreach Subcommittee – to encourage more presentations that engage the utilities.
- 2.) Event Promotion Subcommittee – to promote the annual meeting and other energy committee initiatives to the meteorological community
- 3.) Education Subcommittee– to engage the student conference and hold a short-course or similar event at the 2017 meeting. This committee will also be responsible for the 2017 Energy Committee sponsored forecasting conference.
- 4.) Social Media Subcommittee – to manage the committee social media communications.

The Energy Committee is also planning to have a strong focus on collaboration in 2016, reaching out to other conferences and supporting as many joint sessions as possible at 8Energy.

The Energy Committee is planning to again participate in the annual California Utility Forecasting Meeting in 2016. We plan to find any opportunity to participate in regional events whenever possible.

Renewable Energy Committee

Achievements

As noted above, the Renewable Energy Committee (REC) and the Energy Committee (EC) organized and hosted the Sixth Conference on Weather, Climate, and the New Energy Economy (6Energy) in January 2015. A joint session with the Lidar conference was popular and well attended.

Members of the REC reconsidered the role of the REC in fostering communication between different sectors while making the best use of members' time. To this end, meetings in 2015 focused on setting out the "big picture" issues that face renewable energy in the USA. Notable discussions included issues facing solar energy resource assessment, ways to help integrate behind the meter solar energy, the use of remote sensing for wind energy applications, and the challenge of understanding the value of improved forecasting. A key conclusion has been that meteorologists struggle to demonstrate the value of the products that they could deliver, to potential clients.

The REC holds monthly conference calls to facilitate dialog between industry, government and academia. Calls include time for a presentation from a member of the committee, and an in depth discussion of current topics of interest.

The AMS completely reworked the committee's web presence in January 2015. The REC web pages have moved to this new space and are being actively maintained by the committee, and are used to host minutes and presentations. The REC web pages can be found at <http://www2.ametsoc.org/cwwce/index.cfm/committees/renewable-energy-committee/>.

This year, the REC hosted a number of educational presentations during it's meetings:

Resource assessment (May 26,
2015<<http://www2.ametsoc.org/cwwce/index.cfm/committees/renewable-energy-committee/meeting-minutes/may-26-2015/>>)

* Grid integration (May 26,
2015<<http://www2.ametsoc.org/cwwce/index.cfm/committees/renewable-energy-committee/meeting-minutes/may-26-2015/>>)

* Forecasting value (July 14,
2015<<http://www2.ametsoc.org/cwwce/index.cfm/committees/renewable-energy-committee/meeting-minutes/july-14-2015/>>)

* Probabilistic forecasting (September 24,
2015<<http://www2.ametsoc.org/cwwce/index.cfm/committees/renewable-energy-committee/meeting-minutes/september-24-2015/>>)

Plans

The year 2016 will see 11 members leaving the AMS REC, including the current chair and co chair. We intend to take this opportunity to refresh the membership by rotating in new members who have more experience in operating (or operational) renewable energy assets than currently.

December 2015

As in previous years, the EC and REC are organizing and will host the Seventh Conference on Weather, Climate and the New Energy in January 2016. This will take place as part of the AMS Annual Meeting.

The REC will continue to work to connect industry, academia, and public agencies. This will be achieved via continued informal discussion within the REC, as well as strengthening our existing partnership with the Energy Committee. The REC will also examine other routes to enhance connections, such as engaging with UVIG. REC activities will require careful leverage of committee members' time and energy in what continues to be a challenging economic climate for many members.

Water Resources Committee (WRC)

Accomplishments

The AMS Water Resources Committee (WRC) was established in 2012, and we had our inaugural meeting on May 7, 2012. The leadership of the WRC changed at our third annual group meeting in January 2015. Kathleen Miller has assumed the role of Chair, while Dan Walker continues to serve as Vice Chair. Priorities for this committee continue to be: climate (climate change and adaptation); socio-economic impacts, risks, benefits and vulnerabilities; water resources planning and analysis; extreme events; meteorology and atmospheric (as relevant to hydrology); water quality; coastal issues; water resources management and uncertainty; how to better inform policy and politics.

The WRC attempts to meet on monthly basis, and following the in-person committee meeting at the 2015 AMS annual meeting, we have held monthly telecom meetings through mid-2015.

Activities pursued in 2015 include:

- *Committee renewal.* The merger of the Water Resources Committee (WRC) and the BEP-Annual Partnership Topic Committee on Integrated Water Resources (APT-IWR) was completed with the submission of a nomination package for the re-constituted Water Resources Committee in July of 2015. All members of both committees were polled to determine their interest in continued participation under the WRC. New members were recruited both during the 2015 AMS annual meeting, and through private communication. The nomination package is currently under review.
- *Development of proposal for redrafting of the AMS Policy Statement on Water Resources.* The members of the WRC drafted a memo requesting appointment of a committee to redraft this out-of-date policy statement. [The memo was submitted to the Commissioner for the Weather Water and Climate Enterprise, who forwarded it to the AMS Council. The Council approved the request and asked the WRC to prepare a précis that will be used to recruit volunteers for the drafting committee. That solicitation process is underway. In addition, several members of the WRC have indicated their willingness to serve on the drafting team.](#)
- *Continuing engagement with ASCE-CACC.* A major activity in 2014 involved building a strong working relationship with the American Society of Civil Engineers' (ASCE) Committee on Adaptation to Climate Change (CACC). The WRC had coordinated an expert review of the CACC white paper "*Bridging the Gap between Climate Change Science and Civil Engineering Practice.*" That report has been published, and we are now entering a phase of continued engagement with the ASCE CACC, that will focus on broadening the consideration of climate change and water issues to extend beyond informing the development of engineering standards. Specifically, we aim to play a role in identifying how integration of physical and social science inputs can be implemented to promote better climate adaptation decision making in the context

of existing uncertainties. We are developing plans to organize a webinar on that topic.

- *Sponsorship of sessions at the AMS 2016 annual meeting.* The WRC is working with the BGS to organize a pair of sessions on: *Challenges in Meeting Water Needs for Cities in the World's Developing Nations* as part of the Fourth Symposium on the Weather, Water, and Climate Enterprise. The WRC also is co-sponsoring a session (joint with the BGS Energy Committee) on *Water Resource and Energy Sector Interactions* as part of the Seventh Conference on Weather, Climate, and the New Energy Economy.
- *Proposal for a webinar on interpretation and implementation of the new federal flood risk mitigation standards.* On January 30, 2015, President Obama signed an Executive Order establishing a new flood standard to help reduce the risk and cost of future floods by requiring all Federal investments to meet higher flood-risk standards, specifically to account directly for the potential effects of climate change on future floods by adjusting current flood elevation (and hazard areas) by one of three methods:
 - Approaches employing “data and methods informed by the best available, actionable climate science”
 - Adding an additional two-foot freeboard above the 100-year flood elevations when constructing standard projects and three feet for critical facilities like hospitals, or
 - Designing instead for 500-yr flood elevations.

Application of climate-change projections, paleohydrologic reconstructions, hydrologic and hydraulic models, and analysis of available meteorological and hydrological data have considerable potential to inform flood management and infrastructure investments in ways that may attract more projects and agencies to the climate-informed option for establishing flood-elevation and hazard-area estimates used in future siting, design, and construction of federal projects.

The AMS Water Resources Committee plans to organize a webinar to describe and discuss the scientific (climatological, meteorological, and hydrological) issues and opportunities raised by this new standard.

December 2015

International Committee on Weather, Water, and Climate Strategies

Accomplishments

2015 AMS Annual Meeting

On Wednesday, January 7, 2015 from 7:00 am – 8:15 am the ICWCS hosted a Town Hall during the 95th Annual American Meteorological Society Meeting. The theme was: Lessons learned about coping with high impact hydro-meteorological events in the US: “A stepping stone panel discussion for the 2015 DRR Summit on Lessons Learned about Lessons Learned”.

The ICWCS held its annual in person meeting on Sunday, January 4, 2016 from 2:00 pm – 4:00 pm.

2016 AMS Annual Meeting

The committee established a joint sub-committee with the Board on Global Strategies to coordinate planning of international related programming at the 2016 Annual Meeting. Chaired by Angel McCoy, the group has met twice and had discussions between meetings related to coordinating with the International Activities Office of the National Weather Service on their annual AMS International session associated with the Annual Meeting. There has been coordination with the chair of the Lamb Symposium on their planning as well since it will have a significant international component. There is discussion of planning an “icebreaker” session on the sidelines of the International session to bring together representatives of the Climate Weather and Water Enterprise with the international attendees.

Of particular relevance to the ICWCS, there is discussion of how the committee may help to facilitate the adoption of the Weather Ready Nation concept in select developing countries. This is a priority of USAID’s Office of Foreign Disaster Assistance (OFDA), though it may not be as high of a priority for the National Weather Service. The AMS Annual Meeting may be an opportunity to convene a Town Hall or other forum to discuss this concept further.

Coordination of AMS international entities

Beginning at the 2015 Annual Meeting, Chair Renee Leduc Clarke commenced discussions with John Jones, the Chair of the International Committee established by the AMS Council, Melinda Marquis, Chair of the Board on Global Strategies, and Mary Glackin, Chair of the Commission on the Climate Weather Enterprise to clarify the roles of each of the international entities under AMS. Following the Annual Meeting, Renee reached out to the leaders of these groups and a few others to have a dialogue specifically related to identifying the profile for each entity to more easily determine what group should recruit what members, to avoid overlap. While initial discussions considered dissolving ICWCS, it was determined that there are plenty of efforts for the three entities to focus on independently.

December 2015

The way forward was that the ICWCS would focus exclusively on issues related to developing countries, while the BGS would focus more broadly on international and multilateral issues, including the WMO. The International Committee established by the AMS Council would take guidance from the Council and the current AMS President for its activities.

Renee has been in discussions with the ICWCS on making adjustments to the TOR of the committee to reflect these changes and has developed a draft profile for members of the committee that has been reviewed and shared with the leadership of the BGS and CWWCE shortly.

Action Steps for the rest of 2015:

- Finalize and get approval for edits to the TOR of ICWCS.
- Finalize the profile for members of ICWCS and share with leadership of other international committees. Actively coordinate with the other two entities about all of our recruitment efforts.
- Continue to actively coordinate and liaise about events and fora in the Joint Committee on international activities at the AMS Annual Meeting in 2016.
- Explore the feasibility of convening dialogues or other activities to support the development of weather ready nation initiatives in one or more developing countries.
- Explore the future of the International Advisory Committee – whether to dissolve it or shift it to the BGS.

- Finish review of profile for ICWCS members and share it with BGS and the EC International Committee to coordinate the efficient recruitment of new membership.

Committee on Environmental Security (CES)

Accomplishments

Focus 360 Panel on Climate Change and National Security at the American Institute of Aeronautics and Astronautics (AIAA) Science and Technology Forum and Exposition (SciTech 2015), 5 January 2015, Kissimmee, FL: Lanicci organized and moderated a panel discussion that covered the reasons why policymakers in Washington are paying attention to the far-reaching impacts of global climate change, and how this attention has led to a renewed interest in environmental security. The session panelists included Lanicci, Dr. Chad Briggs, Strategy Director, Global Interconnections, LLC; Dr. Roger Handberg, Professor, Political Science, University of Central Florida; Dr. Peter Jacques, Associate Professor, Department of Political Science, University of Central Florida; Ms. Cathy Snyder, Vice President, Energy & Environment, Lockheed Martin Washington Operations; and RADM(Ret) Dave Titley, Director, Center for Solutions to Weather and Climate Risk, Penn State University.

CES Face-to-Face Meeting at AMS. The CES held its fifth annual face-to-face meeting on January 6th in Phoenix, AZ. The attendees were John Lanicci (CES Chair); Shawn Miller (CES Member); Rachael Isphording (new CES Student Member); Gary Rasmussen (AMS HQ); Matt Parker (Past Commissioner, CWCE Executive Committee); Bill Mahoney (Future Commissioner, CWCE Executive Committee); Mary Glackin (Commissioner, CWCE Executive Committee); and Angel McCoy (Ex Officio Past Chair, International Committee on Weather and Climate Strategies). The first order of business was to introduce Rachael Isphording to the committee. Rachel is a December 2014 graduate of Embry-Riddle Aeronautical University in Applied Meteorology, and was enroute to a post-bachelor research assistant position at the Climate Change Science Institute at Oak Ridge National Laboratory. Following the introduction, there were lengthy discussions both on recommendations for CES activities in 2015 as well as ideas for new committee members to replace Ken Carey and Genevieve Maricle, who rotated off this year. Among the ideas for CES activities were a BAMS Inbox article on ES that would serve as a “queue up” for an eventual ES short course to be held at a future AMS Annual Meeting. A second idea was an ES literature review to gather relevant publications in order to build a repository for use by the community. Although unable to attend due to funding issues, Jada Garofalo (CES member) suggested narrowing the scope to those papers focusing on climate change and conflict, since there is not a community consensus on this issue, and a collection of work done on this topic would be valuable. A third suggestion was ES as a possible topic in the upcoming (2016) AMS Student Conference. Among the ideas for membership recruiting were Dave Titley (PSU); Jamie Hawkins (Lockheed Martin); Members of the Board on Societal Impacts; ESRI; and team members involved in the various ES-themed concept papers coming out of the US policy community in the last 12-18 months. There is a need to increase the private sector representation on the CES.

Plans

December 2015

The CES is involved in the planning for the 2016 AMS Washington Forum. Lanicci and Miller participated in the first planning call, and ES will once again be a featured topic on the AWF agenda.