

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

Mid-Year Report

1 July 2020

Douglas C. Hilderbrand, Commissioner
Pamela G. Emch, Past Commissioner
Sue Ellen Haupt, Future Commissioner

Decisions Requiring AMS Council Vote:

None as of July 1, 2020.

Commission Highlights:

Commission Organizational Change Discussions:

- Two ad hoc committees in development: Ad Hoc Committee on Mind the Gap and the Ad Hoc Committee on Engineering Resilient Communities
 - Both would fall underneath the Board on Enterprise Strategic Topics (BEST)
 - Terms of Reference for each ad hoc committee are in draft form
- Discussions have continued since the commission meeting at the 2020 AMS Annual Conference on the future of the Board on Global Strategies. Consensus is growing to redefine the board to focus on “decision support services.” A Council proposal is expected by the January 2021 AMS Council Meeting.

COVID-19 Actions and Impacts:

- AMS Statement: [Tornado Sheltering Guidelines during the COVID-19 Pandemic](#)
 - Adopted by the AMS Council on 9 April 2020
 - Authored by the CWWCE Committee on Emergency Management
- AMS Washington Forum and Summer Community Meetings Postponed
 - [AMS Washington Forum](#) currently scheduled for October 26-28, 2020, will now be entirely virtual.
 - [2020 Summer Community Meeting](#), originally scheduled for July has not been rescheduled. Board on Enterprise Communication is looking at either hosting webinars on SCM topics in the early fall or cancelling outright.

Commission Diversity Engagement:

- The Commission organized an AMS webinar on [Unconscious Bias](#), led by NOAA/NWS EEO/Diversity Management Director, Richard “Pete” Hill.

Commission Digital Outreach

- Commission Twitter accounts created.

- @AMSWxEnterprise with 136 followers.
- @AMSSpectrum with 40 followers
- [Commission webpages](#) are currently being updated/refreshed with dated information removed and adding/keeping the most relevant information. Hearty thank you to the AMS Staff for assisting.

Commission Membership:

All board and committee rosters are complete for 2020. Rosters have all been updated on the various board/committee websites. Rosters are updated and managed via a single Google Spreadsheet that all chairs have access. The 2020 CWWCE organization chart can be found in **Appendix A**.

Commission membership statistics include:

- Total members among the four boards and 16 committees = 212 (up from 168 in 2019)
- % of female members = 33.5% (Commission Leadership = 36%)
- Sector breakout = Academia 30%, Government 25%, Industry 43%, Retired 2% (Commission Leadership = Academia 20%, Government 28%, Industry 44%, Retired 8%)

Summary of CWWCE Forums and Symposia Held or Planned:

The following major activities have already been conducted or are being planned for 2020 and 2021.

- [Eighth Symposium on the Weather, Water and Climate Enterprise \(8WWCE\) \(January 2020, Boston, MA\)](#): Collaborated on four Presidential Town Halls, shared five joint sessions, hosted seven panel discussions, a poster session, and nearly 50 presentations in 10 sessions. Co-leads were Tanja Fransen and Becky DePodwin
- Ninth Symposium on the Weather Water and Climate Enterprise (9WWCE) at the January 2021 NOLA Annual Meeting, [Call for Papers](#), co-leads are Becky DePodwin and Owen Shieh.
- [11th Conference on Weather, Climate and the New Energy Economy recordings.](#)
- [12th Conference on Weather, Climate, and the New Energy Economy](#) Call for Papers.
- [AMS Washington Forum \(AWF\)](#). Originally scheduled for April, the BEED decided to postpone the event until October 26-28, 2020, and to hold it completely virtually. Session topics will include:
 - Addressing Our Wildland Fire Weather Needs
 - Truth in Science: Ensuring Scientific Integrity
 - The Future of Weather Forecasters and Technology
 - Climate Adaptation and Resiliency: Are we prepared?

- Unlocking the Spectrum Puzzle: Balancing weather information needs with increasing global demand for spectrum
- [2020 Summer Community Meeting \(SCM\)](#). The SCM, originally scheduled for July 28-29 in Norman, OK, has been cancelled due to the pandemic. Organizers are looking at options to sponsor SCM-related topics in future AMS webinars.
- The 2021 Summer Community Meeting is planned for August 2-4 in Boulder, CO. The venue is already reserved.

Board and Committee Activities:

CWWCE board and committee updates and highlights are provided below. However, this does not cover the full complement of activities occurring within the CWWCE. This section is organized by board: Board on Enterprise Economic Development (BEED), Board on Enterprise Communication (BEC), Board on Enterprise Strategic Topics (BEST), and Board on Global Strategies (BGS).

Note: References to board or committee activities throughout this report should not imply that all committee members were a part of certain activities. Due to their professional affiliations, some committee members elect to abstain from certain advocacy efforts.

Board on Enterprise Economic Development (BEED)

--Provided by BEED Chair Jennifer Sprague-Hilderbrand

This mid-year summary report provides highlights of current activities and those planned for 2020-21.

While Covid-19 has posed challenges for all of the BEED Committees, the Committees have continued to make forward progress on their prioritized activities. One of our continued 2020 goals is educational outreach to students as well as professionals in the Weather, Water and Climate Enterprise. While the original dates for the 2020 AMS Washington Forum succumbed to Covid-19, plans are in progress to host a virtual Washington Forum during the week of October 26.

The Board continues to actively engage in discussions as we broaden our scope beyond the Washington Forum to include other activities/events to expand outreach to the user community bridging the gap between our respective communities. The BEED has continued to have extensive discussions about the importance and value of the broader Weather, Water and Climate Enterprise. Finally, following on the efforts of the WEEET from several years back, a group continues to meet somewhat regularly on the subject of weather enterprise valuation. This group includes representatives from NOAA, the AMS Policy Program, stakeholders on spectrum allocation, and private sector perspectives. This activity will be formalized into a more regular working group cadence to align with the current AMS studies on enterprise valuation and give more momentum to the broader discussion across the AMS.

Financial Weather/Climate Risk Management (FWRM) Committee. The FWCRM committee (chaired by Steve Bennett) has initiated and/or continued work on the following initiatives in 2020:

The FWCRM committee conducted an annual member survey to determine 2020-2021 priority initiatives. Based on the outcome of this survey they decided to focus on the creation of sub teams around: “Mind the Gap” and “Climate Linked Economics.” Details linked [here](#).

1) FinWx [Subteam on Mind-the-Gap](#)

- Contributed to [AMS Tools: Preparing Students for Employment in the Private Sector](#)
- Contributed to career profiles on AMS’s Career Resources [site](#).
- Contributed to [Clear Skies Ahead: Conversations about Careers in Meteorology and Beyond](#)
- Collaborating on two draft articles for BAMS on this topic.
- Hosting a Slack Team for AMS Mind-the-Gap Contributors.
- Volunteered to co-chair an AMS Ad-Hoc Committee
- Collaborating with [The Knowledge Exchange](#) for career mentorship.

2) FinWx Subteam on Climate Linked Economics

- Submitted a [Call to Action](#) for the BEED and CWWCE
- Accepted to host a Forum on Climate Linked Economics as part of the 9th Symposium on the Weather, Water, and Climate Enterprise at the 101st Annual Meeting of the American Meteorological Society.

Intelligent Transportation & Surface Transportation (ITS/ST) Committee. The ITS/ST committee (Chaired by Steve Early) has initiated and/or continued work on the following initiatives in 2020:

- Submitted/sponsored a topic for the 2021 AMS Annual meeting (“Weather and Roads – Strengthening Engagements with Communities) as part of the Environmental Information and Processing Technologies (EIPT) conference, with the intention to again hold two sessions during the conference.
- A BAMS Article in the works by the committee in various forms over the past few years has now been accepted for publication. The latest expectation is that it will publish some time during 2021.
- Continuing initial efforts to organize towards identifying and supporting the successor/evolution to the AMS Special “Summit” Meeting on Autonomous Vehicles and Meteorology, with intent to establish bridges and increase information sharing between the meteorological community and the surface autonomous vehicle community. A target location has been identified, with identification of venue candidates underway. An ad-hoc group/subcommittee that was discussed at the beginning of the year will be further organized during the second half of 2020.

- The Mobile Observations Subcommittee remains active, with continuing focus this year on emerging observation technologies in connected and automated vehicles and engagement with the users of those technologies. The subcommittee has also established a presence with the SICOP (Snow and Ice Pooled Fund Cooperative Program) mobile observations coordinating committee.
- Continued efforts (regular committee + subcommittee) to build and strengthen relationships and bridges within and between the meteorological and surface transportation communities

Energy Committee (EC) and Renewable Energy Committee (REC). The EC committee (Chaired by Eric Wertz) and REC committee (Co-chaired by Jeff Freedman and John Zack) have initiated and/or continued work on the following initiatives in 2020:

- While two planned webinars for 2020 were shelved in the short term due to Covid-19, the EC is looking to e-energize plans for the webinars later in summer 2020.
- The EC and REC are currently organizing 12ENERGY which will (hopefully...) be held in January 2021 in New Orleans, LA. As in previous years, the conference will take place over a four-day period during the AMS Annual Meeting.
- Continue to build on the successful Grid Operations and Energy Weather sessions from 11ENERGY by having them again at 12ENERGY. Our Offshore Wind sessions at 11ENERGY was the surprise hit of the bunch, having a standing room only audience. This year, we are having a Joint Session with the 22nd Conference on Air-Sea Interaction to strengthen it further.
- We are also having a Joint Session with the 11th Symposium on LiDAR Atmospheric Applications – a new addition to the slate.
- Our Committee meetings have had really robust conversations on how COVID-19 is impacting energy weather so we are planning to have a session on that (likely a panel).
- The EC continues to maintain a Twitter account to share relevant information regarding the energy enterprise. The EC will also leverage this social media to promote 12ENERGY. Our Twitter volunteer from this year has been AWOL so I will try to get it back up to snuff and/or find a new volunteer.

Ad Hoc Committee on Oceans, Atmosphere, and the Blue Economy. The Ad Hoc Committee (Chaired by Pam Emch) is in its infancy phase, but discussions have begun with potential committee members.

[Board on Enterprise Communication \(BEC\)](#)

– Provided by BEC Chair Jonathan Porter

The BEC has continued to make progress in committees and other activities, despite significant challenges from the COVID-19 pandemic, including and most especially the amount of time that members can spend on AMS activities during a time when many are providing enhanced weather support related to COVID-19 and other mission-critical activities.

The AMS Summer Community Meeting has been cancelled due to COVID-19. The BEC had begun our detailed planning for the SCM just prior to the venue advising that all conferences

were cancelled. BEC does not plan to have the SCM this year, but rather offer webinars later in the year or revisit the topics at an in-person SCM in 2021. This decision is further strengthened by the Washington Forum moving to all virtual event in October - we do not see AMS members having time to participate in two virtual meetings in the Fall. As such, we will re-evaluate the opportunity for specific webinars of community interest later this year.

BEC has further developed its plans for running a webinar for especially broadcast meteorologists to talk about the ways in which businesses and other organizations use specialized weather warnings from America's Weather Industry in addition to government issued publicly available weather warnings. Krystal Klei and Justin Gehrts, the two broadcast meteorologists on the BEC have contributed to the initial planning/vision of this event. This has been identified as an area during recent events where additional sharing of experiences would likely benefit the Enterprise and provide more information for broadcast meteorologists who may see and need to explain why some businesses or other organizations (i.e. colleges, universities) with specific risk tolerances and thresholds enact plans that may differ from that which would be expected based upon government warnings intended for the public. We had planned to run this event earlier this Spring, but COVID-19 caused delays to planning. Our next step is to identify panelists - including an end user or two who makes use of these types of products to explain how they are used in concert with government warnings and also a representative from the NWS.

Committee on Effective Communication of Weather & Climate Information (CECWCI). The CECWCI (Co-chairs, Gina Eosco and Gary Szatkowski) is moving forward with the following activities:

- Started discussion on Saffir Simpson Hurricane Wind Scale. This discussion is just beginning and is focused on: 1) Looking at the Saffir-Simpson Hurricane Wind Scale (SS-scale) and where it is falling short of communicating impacts, 2) how the National Hurricane Center recognizes this and works to address it, and 3) how the private sector works to fill this communications gap.
- Working to update the CECWCI page on the AMS website

Committee on Open Environmental Information Services (COEIS)

Don and his team have been engaged in a wide-variety of activities after "rebooting" the COEIS late last year:

- Reconstituted the Committee that went dormant in March 2018 when all members and the chair of the COEIS had reached the ends of their terms
- Built a diverse committee from government, private sector and academia; studied original COEIS focus; evaluated areas of new focus needs and developed a new mission statement
- Mission: Inform, collaborate and advocate for Efficient, Equitable and Timely Access to Environmental Data for research, operational and Business Applications

- Group designed, planned and is now executing a 5-part Webinar Series focused on making data more accessible to the industry for research and operations, along with AI/ML tools to develop new applications and products
- First webinar is complete, [*Big Data Initiatives: Access and Exploitation for Weather Industry*](#), with four more webinars into the Fall of 2020 — Committee on AI for Environmental Science is co-sponsoring the webinar series.
- Committee is focused on understanding what data the industry needs to unleash innovation to build and operationalize the next generation of weather applications to serve societal needs

Forecast Improvement Group (FIG)

- Hosted an AMS webinar “[*Information Session: Unified Forecast System Medium-Range Weather Application 1.0*](#)” encouraging members from across the Enterprise to participate in the UFS community modeling opportunity.

Committee on Radio Frequency Allocations

The AMS Committee on Radio Frequency Allocations is handling two ongoing matters of importance to the weather, water, and climate enterprise, with potential impacts to the collection and delivery of operational weather satellite observations, particularly for academic and industry members of the AMS. The primary issues are related to:

- Federal Communications Commission (FCC) action on 24 GHz, which was auctioned in March 2019 over the objection of NOAA and NASA, and
- May 2019 Notice of Proposed Rulemaking (NPRM) for the 1675 to 1680 MHz band that Ligado seeks to share with new terrestrial 5G/IoT networks, adjacent to important GOES-R series downlink communications.

The 1675 to 1680 MHz band is part of a collection of L-band spectrum that are sought for 5G services. The other bands in the collection, 1526-1536 MHz, 1627.5-1637.5 MHz and 1646.5-1656.5 MHz, are adjacent to Global Positioning System (GPS) frequencies. The FCC voted to allow Ligado to operate adjacent to the GPS signals over the objections of federal government agencies.

The primary role of the Committee has been (1) drafting position letters (listed below) with science and policy partners to inform policymakers of spectrum sharing implications, led by Renee Leduc, (2) working with those same partners to file statements in relevant FCC dockets, (3) sharing information about FCC proceedings and spectrum matters on Twitter (new account, @AMSSpectrum), (4) fielding calls from the media and providing technical and policy expertise, (5) organizing and participating in panel discussions and events that increase education on these matters and explain their importance, and (6) supporting the AMS President.

There will be a panel discussion on spectrum matters at the virtual Washington Forum in October. The composition of the panel will depend on the status of spectrum proceedings later this summer.

Position letters developed and circulated in 2020 include:

- Joint Letter to FCC expressing concerns on sharing GOES spectrum, 16 April
- Multi-organization statement expressing concerns on spectrum usage, 6 May
- Multi-organization letter to FCC supporting NTIA Petition for Stay on spectrum allocation, 3 June
- Multi-organization letters to House and Senate on spectrum usage, 15 June

Work on a new AMS policy statement on radio frequencies has stalled until a less frenetic time for relevant spectrum proceedings.

Board on Enterprise Strategic Topics

– Provided by Chair, Tanja Fransen

- Work being done to incorporate two new Ad-Hoc Committees:
 - Mind the Gap
 - Resilient Communities
- Planning for the AMS Annual Meeting Ninth Symposium on Weather, Water and Climate Enterprise (9WWCE).
 - Numerous Joint Sessions with AI, WRN, and Policy are being planned

Committee on Emergency Management:

- [Statement on Tornado Shelter in a COVID Environment](#) - Thank you AMS Council for your quick response to this emerging threat!
- Working on Statement on Severe Weather Safety - Kevin Kloesel is the lead
- Members assisting with finalizing the Statement on “Big Box Stores”
- Nearly complete on a committee statement on hurricane preparedness in a COVID environment
- Delivered a severe weather webinar presentation to the Association of Healthcare Emergency Preparedness Professionals (AHEPP) on Wednesday 5/13 (Bob and Amber lead)
- Participated in “WeatherBrains” episode on 06/22
- Scheduled another webinar with AHEPP on August 2nd on tropical cyclone readiness
- Held meetings on 2/7, 3/26, 4/7, and 5/13. Our next meeting is 6/26. We initially scheduled calls for 30-min, but the discussion has been bleeding over so we are extending to 60min.

Committee on Ecological Forecasting:

- [Virtual Committee meeting](#) scheduled for 24 June

- Begin work with AMS Policy Program and Committee to develop Informational Statement on Ecological Forecasting
- Discuss how to advance AMS CEF connections and outreach to other societies and conferences during period of virtual meetings
- Develop list of additional potential Committee members
- Submitted Brown Bag Lunch session to the Ecological Society of America annual meeting (August, 2020) to introduce CEF and ecological forecasting to the ESA Membership. This annual meeting is now virtual and the format changed significantly such that our proposed session could not be included at this time. We may make a video and submit if that is allowed.
- Submitted a co-authored session to AMS Annual Meeting with NOAA to include ecological forecasting in "[Mesoscale Processes Across Scales: Engaging with Communities in the Physical and Social Sciences](#)" Abstracts due 3 August.

Nationwide Network of Networks:

- No updates. They had four successful sessions across two conferences at the annual meeting in Boston.

Ad-Hoc Committee on Wildland Fire and Technology:

- [13th Fire and Forest Meteorology Conference](#), postponed to 2021

Committee on Financial Weather and Climate Risk Management

- Organized panel of executives from government and industry to discuss major issues at the planned AMS Washington Forum scheduled for April. Now being rescheduled.

Board on Global Strategies (BGS)

– Chair: Stephanie Herring

Stephanie raised concern during the Commission meeting in January at the AMS Annual Conference that the Board members were interested in going a different direction than what is defined in the Board terms of reference. Once the International Committee on Weather, Water, and Climate Strategies was moved out of the Commission, the BGS identity came into question and the remaining committees were constructed more for decision support services than to achieving its stated goals:

- To promote collaboration in the development of and access to high-quality, sustainable, long-term meteorological and climatological observations, models, and predictions around the globe.
- To increase access to such meteorological and climatological information (above), especially in developing countries, to improve continuity of business, better health, and safer environmental conditions, in spite of severe weather events and a changing climate.

Discussions as of July 1, 2020, have focused on redefining the BGS toward explicitly working on decision support efforts, and Commission leadership is looking to engage the [Steering Committee](#) as a next step toward a formal proposal to AMS Council.

APPENDIX A

AMS Commission on the Weather, Water, and Climate Enterprise

Organizational Chart

(Effective 7 February, 2020)

