

Scientific and Technological Activities (STAC) 2021 Mid-Year Report to the AMS Council

Ankur Desai, STAC Commissioner

Gene Fisher, STAC Past Commissioner

Kristie Franz, STAC incoming Commissioner

1. Introduction

STAC is responsible to the Society and the Council for advancing science and technology by promoting the open exchange of ideas, strengthening our disciplinary communities, enhancing collaboration and dialog among these communities, embracing diversity, celebrating and fostering excellence, and cultivating the next generation of scientists and leaders. STAC has continued to carry out these primary roles by planning conferences, symposia, maintaining an active membership and web site (both of which are updated at least annually); recognizing outstanding members via Society Award and Fellow nominations; informing the AMS Council of concerns and suggestions for improvement; and providing a brief summary to the Council/Commissioners after each conference, symposium, or other meeting(s).

2. Items for Council

STAC does not have any items requiring AMS Council discussion.

3. Conferences and Symposia

STAC consists of thirty science committees and six inter-disciplinary boards. Twenty-nine STAC-led conferences/symposia were held in virtually during the 2021 Annual Meeting. Seven additional conferences have taken place or are being planned since January 2021 at various locations. Thirty-two are planned for the 2022 Annual Meeting in Houston. Also in 2022, twelve specialty conferences are being planned to be held in person at 8 different locations.

Here is a listing of all the STAC conferences and symposia through 2021 and those planned for 2022.

AMS 2021 annual meeting

Conference Name	Organizing Committee/Board
12th Conference on Environment and Health	AMS Board on Environment and Health

11th Conference on Transition of Research to Operations	AMS Board on Environmental Information Processing Technologies
11th Symposium on Advances in Modeling and Analysis Using Python	AMS Board on Environmental Information Processing Technologies
37th Conference on Environmental Information Processing Technologies	AMS Board on Environmental Information Processing Technologies
Seventh Symposium on High Performance Computing for Weather, Water, and Climate	AMS Board on Environmental Information Processing Technologies
16th Symposium on Societal Applications: Policy, Research and Practice	AMS Board on Societal Impacts
Major Weather Events and Impacts of 2020	AMS Board on Societal Impacts
Ninth Symposium on Building a Weather-Ready Nation: Enhancing Our Nation's Readiness, Responsiveness, and Resilience to High Impact Weather Events	AMS Board on Societal Impacts
Ninth Symposium on the Weather, Water, and Climate Enterprise	AMS Commission on Weather, Water, and Climate Enterprise
22nd Conference on Air-Sea Interaction	AMS Committee on Air-Sea Interaction
20th Conference on Artificial Intelligence for Environmental Science	AMS Committee on Artificial Intelligence for Environmental Science
13th Symposium on Aerosol-Cloud-Climate Interactions	AMS Committee on Atmospheric Chemistry
23rd Conference on Atmospheric Chemistry	AMS Committee on Atmospheric Chemistry
10th Conference on the Meteorological Application of Lightning Data	AMS Committee on Atmospheric Electricity
21st Conference on Aviation, Range, and Aerospace Meteorology	AMS Committee on Aviation, Range, and Aerospace Meteorology
34th Conference on Climate Variability and Change	AMS Committee on Climate Variability and Change
19th Symposium on the Coastal Environment	AMS Committee on Coastal Environment
35th Conference on Hydrology	AMS Committee on Hydrology

11th Symposium on Lidar Atmospheric Applications	AMS Committee on Laser Atmospheric Studies
21st Symposium on Meteorological Observation and Instrumentation	AMS Committee on Measurements
Mesoscale Processes Across Scales: Engaging with Communities in the Physical and Social Sciences	AMS Committee on Mesoscale Processes
17th Annual Symposium on New Generation Operational Environmental Satellite Systems	AMS Committee on Satellite Meteorology, Oceanography, and Climatology
24th Conference on Satellite Meteorology, Oceanography, and Climatology	AMS Committee on Satellite Meteorology, Oceanography, and Climatology
Fourth Conference on Earth Observing SmallSats	AMS Committee on Satellite Meteorology, Oceanography, and Climatology
Ninth AMS Symposium on the Joint Center for Satellite Data Assimilation (JCSDA)	AMS Committee on Satellite Meteorology, Oceanography, and Climatology
18th Conference on Space Weather	AMS Committee on Space Weather
Ninth Symposium on the Madden-Julian Oscillation and Sub-Seasonal Monsoon Variability	AMS Committee on Tropical Meteorology and Tropical Cyclones
Special Symposium on Global and Mesoscale Models: Updates and Center Overviews	AMS Committee on Weather Analysis and Forecasting
Fourth Special Symposium on Tropical Meteorology and Tropical Cyclones	Committee on Tropical Meteorology and Tropical Cyclones

2021 Specialty Conferences (all virtual)

CONFERENCE	Committee
34th Conference on Hurricanes and Tropical Meteorology	Tropical Meteorology and Tropical Cyclones
13th Symposium on Fire and Forest Meteorology	Agricultural and Forest Meteorology
16th Conference on Polar Meteorology and Oceanography	Polar Meteorology and Oceanography
34th Conference on Agricultural and Forest Meteorology	Agricultural and Forest Meteorology

Fifth Conference on Atmospheric Biogeosciences	Atmospheric Biogeosciences
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2022 Annual Meeting

Conference Name	Organizing Committee/Board
10th AMS Conference for Early Career Professionals	AMS Board for Early Career Professionals
13th Conference on Environment and Health	AMS Board on Environment and Health
38th Conference on Environmental Information Processing Technologies	AMS Board on Environmental Information Processing Technologies
12th Symposium on Advances in Modeling and Analysis Using Python	AMS Board on Environmental Information Processing Technologies
Eighth Symposium on High Performance Computing for Weather, Water, and Climate	AMS Board on Environmental Information Processing Technologies
17th Symposium on Societal Applications: Policy, Research and Practice	AMS Board on Societal Impacts
10th Symposium on Building a Weather-Ready Nation: Enhancing Our Nation's Readiness, Responsiveness, and Resilience to High Impact Weather Events	AMS Board on Societal Impacts
Major Weather Events and Impacts of 2021	AMS Board on Societal Impacts
10th Symposium on the Weather, Water, and Climate Enterprise	AMS Commission on Weather, Water, and Climate Enterprise
26th Conference on Applied Climatology	AMS Committee on Applied Climatology
21st Conference on Artificial Intelligence for Environmental Science	AMS Committee on Artificial Intelligence for Environmental Science
24th Conference on Atmospheric Chemistry	AMS Committee on Atmospheric Chemistry
14th Symposium on Aerosol-Cloud-Climate Interactions	AMS Committee on Atmospheric Chemistry
22nd Conference on Aviation, Range, and Aerospace Meteorology	AMS Committee on Aviation, Range, and Aerospace Meteorology
35th Conference on Climate Variability and Change	AMS Committee on Climate Variability and Change
20th Symposium on the Coastal Environment	AMS Committee on Coastal Environment
12th Conference on Transition of Research to Operations	AMS Committee on Environmental Information Processes and Technology
36th Conference on Hydrology	AMS Committee on Hydrology
22nd Symposium on Meteorological Observation and Instrumentation	AMS Committee on Measurements

19th Conference on Mesoscale Processes	AMS Committee on Mesoscale Processes
22nd Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA	AMS Committee on Meteorological Aspects of Air Pollution
21st Conference on Middle Atmosphere	AMS Committee on Middle Atmosphere
27th Conference on Probability and Statistics	AMS Committee on Probability and Statistics
Symposium on Radar Science in the Service of Earth System Predictability	AMS Committee on Radar Meteorology joint with AMS Board on Environmental Information Processing Technologies
18th Annual Symposium on Operational Environmental Satellite Systems	AMS Committee on Satellite Meteorology, Oceanography, and Climatology
10th AMS Symposium on the Joint Center for Satellite Data Assimilation (JCSDA)	AMS Committee on Satellite Meteorology, Oceanography, and Climatology
Fifth Conference on Earth Observing SmallSats	AMS Committee on Satellite Meteorology, Oceanography, and Climatology
19th Conference on Space Weather	AMS Committee on Space Weather
10th Symposium on the Madden-Julian Oscillation and Sub-Seasonal Monsoon Variability	AMS Committee on Tropical Meteorology and Tropical Cyclones
31st Conference on Weather Analysis and Forecasting (WAF)/27th Conference on Numerical Weather Prediction (NWP)	AMS Committee on Weather Analysis and Forecasting
First Symposium on Earth Prediction Innovation and Community Modeling	AMS Committee on Weather Analysis and Forecasting
23rd Conference on Planned and Inadvertent Weather Modification	Committee on Planned and Inadvertent Weather Modification

2022 planned specialty meetings

CONFERENCE	LOCATION
13th International Conference on Southern Hemisphere Meteorology and Oceanography	Christchurch, New Zealand
35th Conference on Hurricanes and Tropical Meteorology	New Orleans, LA
Broadcast Meteorology	Milwaukee, WI
Weather Warnings and Communication	Milwaukee, WI
23rd Conference on Atmospheric and Oceanic Fluid Dynamics	Breckenridge
20th Conference on Mountain Met	Park City, UT
24th symposium Boundary Layers and Turbulence	Šibenik, Croatia

16th Conference on Cloud Physics	Madison, WI
16th Conference on Atmospheric Radiation	Madison, WI
17th Conference on Polar Meteorology	Madison, WI
Satellite Meteorology	Madison, WI
Severe Local Storms	Santa Fe, NM

4. STAC Board and Committee Awards

STAC is offering the fourth instance of its now annual award opportunity for STAC-level awards in accordance with the terms of reference approved in by the AMS Council:
<https://www.ametsoc.org/index.cfm/stac/chair-member-information/awards/stac-board-and-committee-awards/>

These awards recognize individuals whose outstanding contributions further the goals of the STAC. The process can be found on the STAC webpage, under the “Chair & Member Information” tab or at STAC Level Awards

There are three types of awards for which each B/C can submit a nomination:

- Outstanding Early Career,
- Distinguished Scientific/Technological Accomplishment, and
- Outstanding Service

In 2020, eleven STAC boards and committees took advantage of this opportunity and their nominations were approved by the STAC Commissioner. Announced awards are posted here:
<https://www.ametsoc.org/index.cfm/stac/chair-member-information/awards/stac-level-awards-for-2021/>

October 1, 2021 is the deadline for the 2022 nominations.

5. STAC Best Practices

The [STAC Best Practices Document](#) is in its seventh year of existence and we continue to update and expand it. We combined our past experiences with those of other successful STAC committees and created a living document that helps STAC board and committee chairs and members. Its main purpose is aid STAC volunteers to understand their responsibilities and what they can do to help build their science community. We mention this document every chance we get and it continues to have a very positive impact. The vast majority of STAC members want to make a difference, but some simply do not know how to contribute in the most effective ways. This provides guidance to be fully involved.

One area of improvement we seek to add to this document is to better document best practices for supporting diverse, inclusive, and equitable measures in recruiting, retention, and supporting communities. These are in development as an outcome of earlier breakout

discussions held with STAC chairs and vice-chairs and AMS Culture and Inclusion Cabinet chair Melissa Burt.

6. Named Sessions

STAC has played an increasingly larger role with named sessions at conferences and symposia. Named sessions are discussed in The Guidelines for Society and Commission Awards and described as follows:

"A named session honoring an individual may be held within an existing specialty conference or symposium on the recommendation of the STAC Commissioner and approval by the Executive Committee. Except for extraordinary circumstances, there should be a limit of two special sessions per specialty conference."

The named session requires a Proposal for Named Session form submitted to the STAC Commissioner who then endorses (if appropriate) and forwards the nomination to the AMS Executive Committee for approval.

At the 2021 annual meeting, there were three named sessions. Three have been proposed for 2022.

2021 Annual meeting named sessions

- The Dr. Janet Liou-Mark Memorial Session on Effective Strategies for Increasing Minority Participation in the Atmospheric Sciences, 30th Conference on Education
- Robert Sharman Session on Advancements in the Analysis and Prediction of Turbulence for Aviation, Range and Aerospace Operations, Part I and II, 21st Aviation, Range and Aerospace Meteorology (ARAM) Conference
- Mercury to Methane, High Latitudes to Houston, and NASA to NASCAR: 40 Years of Air Pollution Research in Memory of Robert Talbot, 23rd Conference on Atmospheric Chemistry

Proposed named sessions for 2022

- The Legacy and Impact of Dr. William M. "Bill" Lapenta, 31st Conference on Weather Analysis and Forecasting (WAF)/27th Conference on Numerical Weather Prediction (NWP)
- Radiation and Clouds - In memory of Kuo-Nan Liou, 14th Symposium on Aerosol-Cloud-Climate Interactions
- The Andy Majda Memorial Session on Tropical Convection and Waves, 10th Symposium on the Madden-Julian Oscillation and Sub-Seasonal Monsoon Variability

7. Named Symposia

Two named symposium proposed for 2021 were postponed to 2022.

Named symposium (postponed to 2022 annual meeting)

- Kevin E. Trenberth Symposium
- Richard H. Johnson Symposium

At least five named symposia are proposed for the 2023 annual meeting in honor of: Daniel Keyser, Roger Pielke Sr., Kuo-Nan Liou, and Bill Hooke.

Note that the Named Symposium is a higher and more distinctive level of recognition than the Named Session. It is normally a one-day event comprised of three or four sessions (it can have a poster session in addition to oral presentations). It requires the full 18-month planning time-frame accorded to a specialty conference. Nominations ([Proposal for Named Symposium](#)) are due to Claudia Gorski by May 1 of the year prior to the next Annual Meeting, or at least 18 months before the proposed event.

8. STAC Board and Committee Chairs Conference Calls

The STAC chairs meeting, normally held in person at the annual meeting, was split into two virtual meetings on January 5, 2021 and February 25, 2021. In addition to review of best practices, we held a multi-part session on diversity, inclusion, and equity focused on anti-racist and anti-sexist practices that could be implemented this year by our boards and committees. These have been documented in our meeting notes.

We also held a STAC chairs call on May 21, 2021 where Erica Callahan unveiled the new system for AMS volunteer interest and recruiting, Paul Higgins introduced updates to the AMS policy program, and Claudia Gorski discussed planning for return to in person meetings.

We plan to hold another teleconference in October after the Councilors/Commissioners meeting.

9. STAC Support to the Editor of the Glossary of Meteorology

The *GoM* continues to be an important reference for our Society and with our global community. STAC Boards and Committees are actively involved in supporting the *GoM* by providing expert input on requests for new or updated glossary terms. Ward Seguin works closely with STAC Chairs as requests for new or revised terms need attention.

The table below summarizes Glossary actions for January – June 2021. The statistics for prior years represent 12 months. The average days in review includes actions by the Glossary Chief Editor, which helps to reduce review time. For example, the Chief Editor has sought assistance from University or Government Lab experts; and in some cases, the problem was simply a missing hyperlink which could be dealt with quickly.

The following Committees were involved in these reviews:

Committees reviewing at least one term:

Committee on Cloud Physics

Committee on Atmospheric and Oceanic Fluid Dynamics

Committee on Laser Atmospheric Studies

Committee on Planned and Inadvertent Weather Modification

Committee on Weather Analysis and Forecasting

Committee on Aviation Range and Aerospace Meteorology

The Committee on Weather Analysis and Forecasting was assigned two terms. The Chief Editor acted on five terms as described above.

The following Committees are currently reviewing terms:

Committee on Applied Climatology

Committee on Tropical Meteorology and Tropical Cyclones

Committee on Satellite Meteorology, Oceanography, and Climatology

One term will be assigned to the Committee on Severe Local Storms if the person making the suggestion provides a proposed definition.

AMS Glossary of Meteorology Status (updated 16 Jun 2021)							
Year	New Suggestions	Carried Forward from Previous Years	In Review	Added to GOM during year (new and revised terms)	Rejected / Withdrawn	Completed Term Reviews Days in Review	Days Submission to Decision
2019	23	9	0	24	8	53.3	76.9
2020	39	1	1	21	18	41.8	47.9
2021	15	1	4	10	2	33.3	36

Prepared by Sharon Kristovich, Reporting and Analytics Manager, skristovich@ametsoc.org

10. Membership Breakdown of STAC Boards and Committees

Detailed analysis of membership of STAC boards and committees is underway. Based on demographics received for 2021, 414 volunteers participated in STAC boards and committees. These members were 39% identified as women (35% for chairs and vice-chairs). 10% of the volunteers were students. By sector, 63% were from academic, 34% from government, and 3% from private sector. By country, 93% were in the United States. By AMS membership, 74% were AMS members.

11. Request for Meeting Funds (Program Chair Funds)

The Program Chair of each AMS sponsored conference or symposium can request up to \$1,500 to support student awards, student presenter travel allowance, abstract fees for guest speakers, invited speaker travel support, and special activities. A quick look at the requests indicates that the most common use of the program chair funds is for student awards which can be up to a maximum of \$200 per award, followed by invited speaker abstract awards. STAC handles these fund requests for all AMS conferences whether within STAC or from other Commissions (as per agreement through the AMS Meetings Coordinator). Routine requests are approved by the AMS Meetings Coordinator while those requests requiring closer examination are reviewed by the STAC Commissioner.

12. Annual Awards

STAC was involved with the AMS Annual Awards again this year under the guidance of the AOC. We successfully met the new, accelerated schedule to determine the results of the judging. This table covers the awards with STAC involvement:

Award	Responsible B/C (and Commission)
The Charles L. Mitchell Award	WAF (STAC)
The Award for an Exceptional Specific Prediction	WAF(STAC)
The Francis W. Reichelderfer Award	WAF, BOGM, Coastal Environment, Hydrology (STAC and Professional Affairs)
The Helmut E. Landsberg Award	Board on Urban Environment (STAC)
The Award for Outstanding Achievement in Biometeorology	Board on Atmospheric Biogeosciences (STAC)
The Robert E. Horton Lecturer in Hydrology	Committee on Hydrology (STAC)
The Bernard Haurwitz Memorial Lecturer	STAC
The Walter Orr Roberts Lecturer in Interdisciplinary Sciences	STAC
The AMS Journalism Award	STAC Commissioner Review
Outstanding Contribution to the Advance of Applied Meteorology	Professional Affairs Commission with input from Applied Climatology
The Banner I. Miller Award	Committee on Tropical Cyclones and Tropical Meteorology (STAC)

13. STAC Newsletter

The STAC Newsletter (issued every other month) has continued to be a success as it keeps the STAC members better informed. The newsletters are sent to all STAC members, the Council, Commissioners, and AMS Staff through the AMS Community. Refer to:

<https://www.ametsoc.org/stac/index.cfm/news-reports/monthly-stac-newsletter/>

14. As always, STAC appreciates the support of the AMS Staff and values our collaborative efforts with and support from the AMS Council and the other Commissioners.