

Scientific and Technological Activities (STAC) January 2024 Report to the AMS Council

Kristie Franz, Commissioner

Ankur Desai, STAC Past Commissioner

Clark Evans, STAC incoming Commissioner

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 consists of thirty science committees and six inter-disciplinary boards. These committees and boards have continued to carry out these primary roles by planning conferences and symposia, maintaining an active membership and web site, contributing to statements, the Glossary of Meteorology, and other AMS-wide activities, recognizing outstanding members via STAC award, society award and Fellow nominations, and informing the AMS Council of concerns and suggestions for improvement.

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.

Items for Council

STAC does not have any items requiring AMS Council discussion.

Conferences and Symposia

Thirty-four STAC-led conferences/symposia were held at the 2023 Annual Meeting in Denver and online, and seven specialty meetings were held in 2023 in various locations. Thirty-five STAC-led conferences/symposia are being held during the 2024 Annual Meeting and are listed below. Five additional specialty conferences, also listed below, are planned for 2024 in five different locations. We are currently planning hybrid options for all of our 2024 conferences. Forty-three conferences are planned for the 2025 Annual Meeting in New Orleans and more may join. We are also currently in the process of finalizing 2025 specialty meetings.

Conferences and Symposia at 2024 AMS Annual Meeting (Baltimore, MD and online)

Conference/Symposium Name	Organizing Committee/Board
40th Conference on Environmental Information Processing Technologies	AMS Board on Environmental Information Processing Technologies
38th Conference on Hydrology	AMS Committee on Hydrology
37th Conference on Climate Variability and Change	AMS Committee on Climate Variability and Change

33rd Conference on Education	AMS Committee for the Conference on Education
28th Conference on Applied Climatology	AMS Committee on Applied Climatology
28th Conference on Probability and Statistics	AMS Committee on Probability and Statistics
26th Conference on Atmospheric Chemistry	AMS Committee on Atmospheric Chemistry
26 th Conference on Satellite Meteorology, Oceanography and Climatology	AMS Committee on Satellite Meteorology, Oceanography, and Climatology
24th Conference on Planned and Inadvertent Weather Modification	Committee on Planned and Inadvertent Weather Modification
24th Conference on Aviation, Range, and Aerospace Meteorology	AMS Committee on Aviation, Range, and Aerospace Meteorology
24th Symposium on Meteorological Observation and Instrumentation	AMS Committee on Measurements
23rd Conference on Artificial Intelligence for Environmental Science	AMS Committee on Artificial Intelligence Applications to Environmental Science
23rd Joint Conference on the Applications of Air Pollution Meteorology with the A&WMA	AMS Committee on Meteorological Aspects of Air Pollution
22nd Symposium on the Coastal Environment	AMS Committee on Coastal Environment
22nd History Symposium	AMS History Committee
21st Conference on Space Weather	AMS Committee on Space Weather
20 th Conference on Major Weather Impacts	AMS Board on Societal Impacts
19th Symposium on Societal Applications: Policy, Research and Practice	AMS Board on Societal Impacts
16th Symposium on Aerosol–Cloud–Climate Interactions	AMS Committee on Atmospheric Chemistry
15th Conference on Environment and Health	AMS Board on Environment and Health
15th Conference on Weather, Climate, and the New Energy Economy	AMS Energy and Renewable Energy Committees
14th Symposium on Advances in Modeling and Analysis Using the Programming Languages of Open Science	AMS Board on Environmental Information Processing Technologies
14th Conference on Transition of Research to Operations	AMS Committee on Environmental Information Processing Technologies
12th 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
12th Symposium on the Weather, Water, and Climate Enterprise	AMS Commission on Weather, Water, and Climate Enterprise

12th AMS Symposium on the Joint Center for Satellite Data Assimilation (JCSDA)	AMS Committee on Satellite Meteorology, Oceanography, and Climatology
12th Symposium on the Madden-Julian Oscillation and Sub-Seasonal Monsoon Variability	AMS Committee on Tropical Meteorology and Tropical Cyclones
10th Symposium on High Performance Computing for Weather, Water, and Climate	AMS Board on Environmental Information Processing Technologies
Ninth Symposium on US-International Partnerships	AMS International Affairs Committee
Sixth Special Symposium on Tropical Meteorology and Tropical Cyclones	AMS Committee on Tropical Meteorology and Tropical Cyclones
Third Symposium on Community Modeling and Innovation	AMS Committee on Weather Analysis and Forecasting
Second Symposium on the Future of Weather, Forecasting, and Practice	Committee on Weather Analysis and Forecasting
Second Symposium on Environmental Security	AMS Committee on Environmental Security
First Symposium on Cloud Physics	AMS Committee on Cloud Physics
AMS Polar Meteorology and Oceanography Special Symposium	AMS Committee on Committee on Polar Meteorology and Oceanography

2024 planned STAC-led specialty meetings

Conference Name	Location
36th Conference on Hurricanes and Tropical Meteorology	Long Beach, CA
51st Conference on Broadcast Meteorology & Seventh Conference on Weather Warnings and Communication	Myrtle Beach, SC
24th Conference on Atmospheric and Oceanic Fluid Dynamics & 22nd Conference on Middle Atmosphere	Burlington, VT
21 st Conference on Mountain Meteorology	Boise, ID
31 st Conference on Severe Local Storms	Virginia Beach, VA

Named Sessions

STAC has played an important 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 2024 annual meeting, there are two named sessions. One has been proposed for a 2024 specialty meeting.

2024 Annual meeting named sessions

Named Session	Hosted by:
Matthew Strahan session on International Collaboration in support of Global Aviation Safety and Efficiency	24th Conference on Aviation, Range, and Aerospace Meteorology
Memorial Session for Vernon Dvorak	Sixth Special Symposium on Tropical Meteorology and Tropical Cyclones and joint with 26th Conference on Satellite Meteorology, Oceanography and Climatology

2024 specialty meetings named sessions

Named Session	Hosted by:
A Session in Honor of Dr. James Doyle	21st Conference on Mountain Meteorology

Named Symposia

Named Symposium is a higher and more distinctive level of recognition than the Named Session. It is normally a one-day event consisting 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 Jen Ives by May 1 of the year prior to the next Annual Meeting, or at least 18 months before the proposed event.

Named Symposia at 2024 Annual Meeting
<ul style="list-style-type: none"> • Daniel Keyser Symposium • Kuo-Nan Liou Symposium

Named Symposia at 2025 Annual Meeting
<ul style="list-style-type: none"> • Gerald Meehl Symposium • Heather Lazarus Symposium

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.

STAC Board and Committee Awards

STAC is offering the sixth instance of its 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 disciplines represented across STAC boards and committees. The process can be found on the STAC webpage, under the “Chair & Member Information” link 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 fall 2023, 19 STAC boards and committees took advantage of the 2024 award opportunity and their nominations were approved by the STAC Commissioner. This is a significant increase over 2023 in which 11 awards were given. Nine of these awards, noted in the table below, will be announced during the AMS Annual Meeting in Baltimore. The remaining will be presented at future specialty conferences or other venues. Past awards are posted here:

<https://www.ametsoc.org/index.cfm/stac/chair-member-information/awards/>

2024 STAC awards to be announced at 2024 Annual Meeting

Award Type	Recipient	Citation	Board/Committee
STAC Outstanding Early Career Award	Sisi Chen	For developing and applying novel modeling techniques to study and advance cloud seeding and cloud physics research.	Committee on Planned and Inadvertent Weather Modification
Distinguished Scientific/Technological Accomplishment Award	Kacy Ernst	For outstanding efforts bridging infectious disease epidemiology and climate change.	Board on Environment and Health
	Evgeni Fedorovich	For foundational work in simulating the atmospheric boundary layer and elucidating its dynamics under a range of challenging conditions.	Committee on Boundary Layers and Turbulence

	Michael Robinson	For many scientific and technical contributions that have mitigated the negative impacts of weather in the National Airspace System.	Committee on Aviation, Range, and Aerospace Meteorology
STAC Outstanding Service Award	William "Woody" Roberts	For many years of invaluable contributions to EIPT through committee leadership, community member mentorship, and extensive conference engagement.	Board on Environmental Information Processing Technologies
	Jonathan H. Jiang	For outstanding service to the Committee on Atmospheric Chemistry and for raising the stature of atmospheric chemistry and aerosol-cloud-climate interactions within AMS.	Committee on Atmospheric Chemistry
	Jesse Feyen	For exceptional dedication and service to the Committee on the Coastal Environment resulting in heightened awareness on crucial coastal environment concerns.	Committee on Coastal Environment
	Tara Jensen	For contributions to statistical verification tools in operational meteorology and exhibiting exceptional dedication, expertise, and mentorship.	Committee on Probability and Statistics
	Ali Tokay	For recurrent and impactful contributions to the AMS radar community that have helped shape several new and ongoing initiatives.	Committee on Radar Meteorology

STAC Support to AMS Annual Awards

STAC was involved with the AMS Annual Awards again this year under the guidance of the AOC. We successfully met the 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)

STAC Best Practices

The [STAC Best Practices Document](#) is in its ninth year of existence. The document combines our past experiences with those of other successful STAC committees and is a living document designed specifically for STAC board and committee chairs and members. Its main purpose is to aid STAC volunteers in understanding 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. Each year, the STAC commissioners review the STAC Best Practices document and update it to improve clarity, to match changes in process, or to add new guidance. No major revisions were made this past year.

STAC Board and Committee Chairs Conference Calls

The Annual STAC chairs meeting was held in person, with a virtual option, at the Annual Meeting on January 8, 2023. We reviewed best practices, deadlines throughout the year, and had a focused discussion on developing strategic plans.

Our chairs call on May 19, 2023 focused on general reminders and announcements with a special discussion on the Spanish translation of the Glossary led by Brian Papa. Subsequent to this meeting, STAC chairs assisted in soliciting volunteers to help assess in the initial evaluation of translated glossary terms.

Our chairs call on October 20, 2023 included a discussion on the Future of Meetings Task Force report led by incoming STAC commissioner Clark Evans. Jen Ives also presented information about the 2024 Annual Meeting and looking ahead to the 2025 Annual Meeting.

Our 2024 annual STAC chairs meeting will be held in person and online on January 28th during AMS Annual in Baltimore from 11 am - 2 pm and will review the successes and challenges of the STAC awards process since its inception, and solicit ideas for improvement.

STAC Newsletters

The STAC Newsletter is issued every other month to keep 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/>.

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.

This year, a total of 25 proposed changes or additions to the Glossary were received and 1 was carried over from last year. Of these 26 terms, 6 new terms were added to the Glossary, 14 existing terms were revised, 3 existing terms are in review, 2 suggestions were rejected, and 1 was withdrawn. STAC reviewed or are currently reviewing 17 of these suggestions. The remaining were addressed or reviewed by outside experts or by the Chief Editor with the assistance of the AMS staff.

This table summarizes the performance statistics for 2023 and earlier years.

AMS Glossary of Meteorology Summary by Year										
Year	New Suggestions	Carried Forward from Previous Years	In Review	Not yet in review	Added to GOM during year (new and revised terms)	Rejected or Withdrawn	Days in Review		Days Submission to Decision	
							Ave	#	Ave	#
2013	29				12	11	50.5	13	64.8	23
2014	31	6			26	4	75.8	30	101.4	30
2015	18	7			13	2	66.3	13	142.1	17
2016	15	10			14	3	238.6	15	270.8	16
2017	16	8			19	3	142.7	16	177.1	16
2018	50	2			39	4	51.4	39	57.8	41
2019	23	9			24	8	53.3	21	76.9	28
2020	39	1			21	19	41.8	39	47.9	39
2021	29	1			27	2	38.4	29	40.3	29
2022	23	0			21	1	20.3	23	22.3	23
2023	25	1	3	0	20	2	25.6	22	29.2	22

The following terms were reviewed by STAC committees and were added or revised in 2023.

Term	Disposition
Convection Allowing Model (CAM)	Accepted as new term
Convection Initiation	Accepted as new term
Pico Balloons	Accepted as new term
Medicane	Accepted as new term
Mesonet	Accepted as new term
Tropical Storm	Existing term, revised
Inflow	Existing term, revised

Convective Available Potential Energy	Existing term, revised
Bomb cyclone	Existing term, revised
Resolution	Existing term, revised
Solenoidal index	Existing term, revised
Height	Existing term, revised

Membership Breakdown of STAC Boards and Committees

Detailed analysis of membership of STAC boards and committees is presented in the tables and map below. Based on demographics received for Dec 2023, STAC has 478 members, this is a 15% increase over last year. The STAC commissioners strongly encourage all committees and boards to have at least one student member - all but 10 committees and boards had student members in 2023.

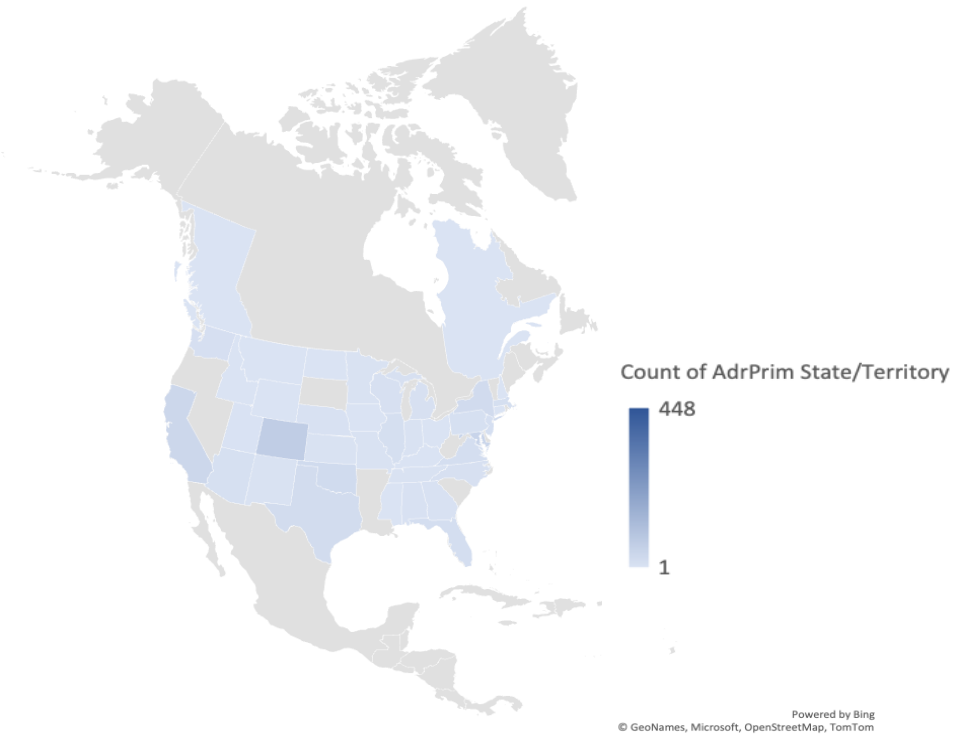
Board/Committee	Chair (co-chair)	Vice- Chair	Emeritus Chair	Member	Student Member	Grand Total
Agricultural and Forest Meteorology	1			4		5
Air-Sea Interaction	1	1		7	1	10
Applied Climatology	1			3		4
Artificial Intelligence Applications to Environmental Science	1	1		11	2	15
Atmospheric and Oceanic Fluid Dynamics	1	1		3	1	6
Atmospheric Chemistry	1	1		9	1	12
Atmospheric Electricity	1	1		11	2	15
Atmospheric Radiation	(1)	1		6		8
Aviation, Range, and Aerospace Meteorology	1	1		16	2	20
Board on Atmospheric Biogeosciences	1	1		7	1	10
Board on Environment and Health	1	1		8	2	12
Board on Environmental Information Processing Technologies	2			9		11
Board on Open Science, Data, and Software	1	1		10	1	13
Board on Societal Impacts	1	1	1	10	4	17
Board on the Urban Environment	2			9	1	12
Boundary Layers and Turbulence	1			7		8
Climate Variability and Change	1	1		19	3	24
Cloud Physics	1			12	2	15
Coastal Environment	1	1		9	2	13

Hydrology	1	1	1	19	2	24
Laser Atmospheric Studies	1	1		8	1	11
Measurements	1	1		8	4	14
Mesoscale Processes	1	1		10	4	16
Meteorological Aspects of Air Pollution	1	1				2
Meteorology and Oceanography of the Southern Hemisphere	1			7		8
Middle Atmosphere	2	1	1	10	2	16
Mountain Meteorology	1			9		10
Planned and Inadvertent Weather Modification	1	1		6		8
Polar Meteorology and Oceanography	(2)			7	2	11
Probability and Statistics	1	1		9	1	12
Radar Meteorology	1	1		11	2	15
Satellite Meteorology, Oceanography, and Climatology	1	1		11	2	15
Severe Local Storms	1	1		12	3	17
Space Weather	1			16		17
Tropical Meteorology and Tropical Cyclones	1	1		17	2	21
Weather Analysis and Forecasting	1	1		22	7	31
Grand Total	37	26	3	352	57	478
	(3)					

By affiliation, 214 members are from academia, 116 from government, 12 from the private sector, 57 are student members, 18 are international, and 61 did not indicate an affiliation. The majority of STAC members continues to come from the academic sector (45%), though that percentage has decreased slightly the last two years. The percentage of STAC members that are also AMS members has declined by 2% from last year, with 364 AMS members, and 114 non-AMS members.

Affiliation	Academic	Government	Private Sector	Student	International	Blank	Grand Total
Member count	214	116	12	57	18	61	478
Percentage	44.8%	24.2%	2.5%	11.9%	3.8%	12.8%	--

The December 2023 demographics indicate that members came from 38 states plus Washington DC, which means there are 6 fewer states represented than in 2022. The largest membership continues to come from California, Colorado, and Maryland. Most members (439 members or 92%) were from the US, with the remaining coming from nineteen different countries.



Country	Member Count
Australia	5
Austria	1
Brazil	1
Canada	8
Chile	1
China	2
France	3
Germany	2
Great Britain	1
Hong Kong	1
Israel	1
Italy	1
Japan	3
Netherlands	1
Norway	1
South Africa	2
Spain	1
Taiwan	1
United Kingdom	3
United States	439
Grand Total	478