

Scientific and Technological Activities (STAC)

January 2023 Report to the AMS Council

Ankur Desai, STAC Commissioner

Gene Fisher, STAC Past Commissioner

Kristie Franz, 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.

Items for Council

STAC does not have any items requiring AMS Council discussion.

Conferences and Symposia

Below is a listing of all the STAC conferences and symposia in 2022 and those planned for 2023.

2022 conferences and symposia

- 35th Conference on Hurricanes and Tropical Meteorology
- Sixth Conference on Weather Warnings and Communication
- 23rd Conference on Atmospheric and Oceanic Fluid Dynamics
- 20th Conference on Mountain Meteorology
- 5th Conference on Satellite Meteorology, Oceanography, and Climatology
- 17th Conference on Polar Meteorology and Oceanography,
- 16th Conference on Cloud Physics
- 16th Conference on Atmospheric Radiation
- 30th Conference on Severe Local Storms

2023 annual meeting

- 39th Conference on Environmental Information Processing Technologies
- 37th Conference on Hydrology
- 36th Conference on Climate Variability and Change
- 32nd Conference on Education
- 27th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS)

- 27th Conference on Applied Climatology
- 25th Conference on Atmospheric Chemistry
- 24th Symposium on Boundary Layers and Turbulence
- 23rd Symposium on Meteorological Observation and Instrumentation
- 23rd Conference on Air-Sea Interaction
- 23rd Conference on Aviation, Range, and Aerospace Meteorology
- 22nd Conference on Artificial Intelligence for Environmental Science
- 21st Symposium on the Coastal Environment
- 20th Conference on Space Weather
- 19th Annual Symposium on Operational Environmental Satellite Systems
- 18th Symposium on Societal Applications: Policy, Research and Practice
- 15th Symposium on Aerosol–Cloud–Climate Interactions
- 14th Conference on Environment and Health
- 13th Conference on Transition of Research to Operations
- 13th Symposium on Advances in Modeling and Analysis Using Python
- 12th Symposium on Lidar Atmospheric Applications
- 11th Conference on the Meteorological Application of Lightning Data
- 11th Symposium on Building a Weather-Ready Nation: Enhancing Our Nation's Readiness, Responsiveness, and Resilience to High Impact Weather Events
- 11th AMS Symposium on the Joint Center for Satellite Data Assimilation (JCSDA)
- 11th Symposium on the Madden-Julian Oscillation and Sub-Seasonal Monsoon Variability
- Ninth Symposium on High Performance Computing for Weather, Water, and Climate
- Eighth Symposium on US-International Partnerships
- Fifth Special Symposium on Tropical Meteorology and Tropical Cyclones
- Third Symposium on Mesoscale Processes
- Second Symposium on Community Modeling and Innovation
- First Symposium on Environmental Security
- Special Symposium on Forecasting a Continuum of Environmental Threats (FACETs)
- Special Symposium on Urban Environment
- Major Weather Events and Impacts of 2022

2023 planned specialty meetings

- 35th Conference on Agricultural and Forest Meteorology
- 14th Fire and Forest Meteorology Symposium
- Sixth Conference on Biogeosciences
- 32nd Conference on Weather Analysis and Forecasting (WAF)
- 28th Conference on Numerical Weather Prediction (NWP)
- 20th Conference on Mesoscale Processes
- 32nd Conference on Weather Analysis and Forecasting (WAF)/28th Conference on Numerical 40th Conference on Radar Meteorology

STAC Board and Committee Awards

STAC is offering the fifth 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

Awards bestowed in January 2022 or later are posted here:

<https://www.ametsoc.org/index.cfm/stac/chair-member-information/awards/stac-level-awards-for-2022/>

In fall 2022, 11 STAC boards and committees took advantage of the 2023 award opportunity and their nominations were approved by the STAC Commissioner.

Nine of these awards, noted in the table below, will be announced during the AMS Annual Meeting in Houston. The remaining two will be presented at future specialty conferences for awards from the **Committee on Mountain Meteorology** or **Committee on Severe Local Storms**.

Type	Nominee	Citation	Board/Committee
STAC Outstanding Service Award	Melissa Burt	For exemplary achievement across the AMS and significant research contributions to building diversity, equity, inclusion, and belonging in STEM sciences	Board on Societal Impacts
STAC Outstanding Early Career Award	Katrina Virts	For innovative work in 3-D lightning mapping using Geostationary Lightning Mappers, allowing a more accurate global lightning picture	Committee on Atmospheric Electricity
STAC Distinguished Scientific/Technological Accomplishment Award	Lisa Goddard	For pioneering the translation of climate forecasts to decision-makers across the world and transforming the concept of climate services	Committee on Climate Variability and Change

STAC Distinguished Scientific/Technological Accomplishment Award	Richard Luettich, Jr.	For observing and modeling complex coastal environments to assess and predict ecological conditions and coastal hazards for the public interest	Committee on Coastal Environment
STAC Outstanding Early Career Award	Casey Davenport	For contributions to understanding of environmental and terrain influences on supercell thunderstorms and techniques to more effectively teach meteorology	Committee on Mesoscale Processes
STAC Distinguished Scientific/Technological Accomplishment Award	Roy M. Rasmussen	For significant contributions to weather modification research through leadership and advancement of tools and basic understanding of cloud physics	Committee on Planned and Inadvertent Weather Modification
STAC Distinguished Scientific/Technological Accomplishment Award	Phillip E. Shafer	For outstanding teamwork, mentoring, and contributions to the statistical forecasting program of the Meteorological Development Laboratory, National Weather Service	Committee on Probability and Statistics
STAC Distinguished Scientific/Technological Accomplishment Award	Zhuo Wang	For research in the mechanisms of tropical cyclogenesis, and leadership in facilitating cooperation of tropical cyclone research communities	Committee on Tropical Meteorology and Tropical Cyclones
STAC Distinguished Scientific/Technological Accomplishment Award	Xuguang Wang	For advances in ensemble data and observation assimilation methods that have improved numerical weather prediction systems	Committee on Weather Analysis and Forecasting

STAC Best Practices

The [STAC Best Practices Document](#) is in its eighth 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 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.

This year, based on prior STAC chair discussion, we added a section on supporting diverse, inclusive, and equitable measures in recruiting, retention, and supporting communities and expanded our guidance on board and committee contribution to the AMS statement process.

Named Sessions

STAC has plays an integral 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. The 2023 named sessions are:

2023 Annual meeting named sessions

- **William P. Roeder** session on Advances in Launch Weather Technology and Research in support of Range and Aerospace Operations, hosted by the 23rd Conference on Aviation, Range, and Aerospace Meteorology
- Recognizing **Lisa Goddard's** Contributions to Climate Predictions and Services, hosted by the 36th Conference on Climate Variability and Change
- **Janet Liou Mark**, hosted by the 32nd Conference on Education

2022-2023 specialty meetings named sessions

- A Session in Honor of **Dr. John Horel** (Applications of Mountain Meteorology), hosted by the 20th Conference on Mountain Meteorology (27 June - 1 July 2022 in Park City, UT)
- Recent Advancements in Dynamic Mesometeorology (In honor of **Lev Gutman**), hosted by the 20th Conference on Mesoscale Processes (16-21 July 2023 in Madison, WI)

Named Symposia are 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.

2023 Annual meeting Named symposia

- Roger Pielke, Sr.
- William Hooke

2023 Annual meeting Named symposia

- Kuo-Nan Liou
- Daniel Keyser

STAC Board and Committee Chairs Conference Calls

The Annual STAC chairs meeting, normally held in person at the annual meeting, was held virtually on February 4, 2022. We had several chairs present on their experience with the statements process and heard about the new Future of Meetings taskforce.

Our chairs call on May 12, 2022 focused on enhancing STAC web pages using the improved web editor tools. Every committee and board was asked to focus on website enhancements for the remainder of the calendar year.

Our chairs call on Oct 28, 2022 focused on discussion around a proposal to move board and committee meetings to virtual by default with AMS meetings director Jen Ives. Ultimately the decision was made to let boards and committees have this option, but not default to it.

Our 2023 annual STAC chairs meeting will be held in person and online during AMS Annual in Denver from 11 am - 2 pm and will focus on strategic planning and future of meetings.

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 23 proposed changes or additions to the Glossary were received. Of these 23 terms, ten new terms were added to the Glossary, eleven existing terms were revised, one new term is in review, and one was rejected. The Scientific and Technical Activities Commission (STAC) reviewed 11 of these terms. The remaining were reviewed by outside experts in the field, and by the Chief Editor with the assistance of the AMS Executive Secretary and the AMS staff editor.

The additions and revisions to the Glossary are shown in the following table.

ID	Term	Reviewed By	Disposition
22001	Sustained wind	Outside expert	Accepted as new term
22004	BUFR	Chief editor	Accepted as new term
22006	GRIB	Chief editor	Accepted as new term
22009	Weather, Water, and Climate Enterprise	Chief editor with AMS Executive Secretary	Accepted as new term

22011	High Tide Flooding	STAC	Accepted as new term
22012	Atmospheric Ducting	STAC	Accepted as new term
22013	Cool Change	STAC	Accepted as new term
22015	Research to Operations	STAC	Accepted as new term
22017	Winter Storm Severity Index	STAC	Accepted as new term
22020	Transient Luminous Event	STAC	Accepted as new term
22003	Radiosonde and related terms	Chief editor	Revised term
22005	Gravitation Tide	Outside expert	Revised term
22007	Neutercane	Chief editor	Revised term
22008	Moazagotl	STAC	Revised term
22010	Lightning	Outside expert	Revised term
22014	Yaw, roll, pitch	Chief editor	Revised term
22016	Dry Convection	STAC	Revised term
22018	Ventilation	STAC	Revised term
22019	Mean	Outside expert	Revised term
22021	Storm	Chief editor	Revised term
22022	Tropical Cyclone	Chief editor	Revised term

22023	Tropical Storm	STAC	Under review
22002	Vornado	STAC	Rejected

Membership Breakdown of STAC Boards and Committees

Detailed analysis of membership of STAC boards and committees is presented in the tables and maps below. Based on demographics received for Dec 2022.

STAC has 408 members, 7% smaller than last year. Of these members, 41% identify as women, a one percent increase over last year.

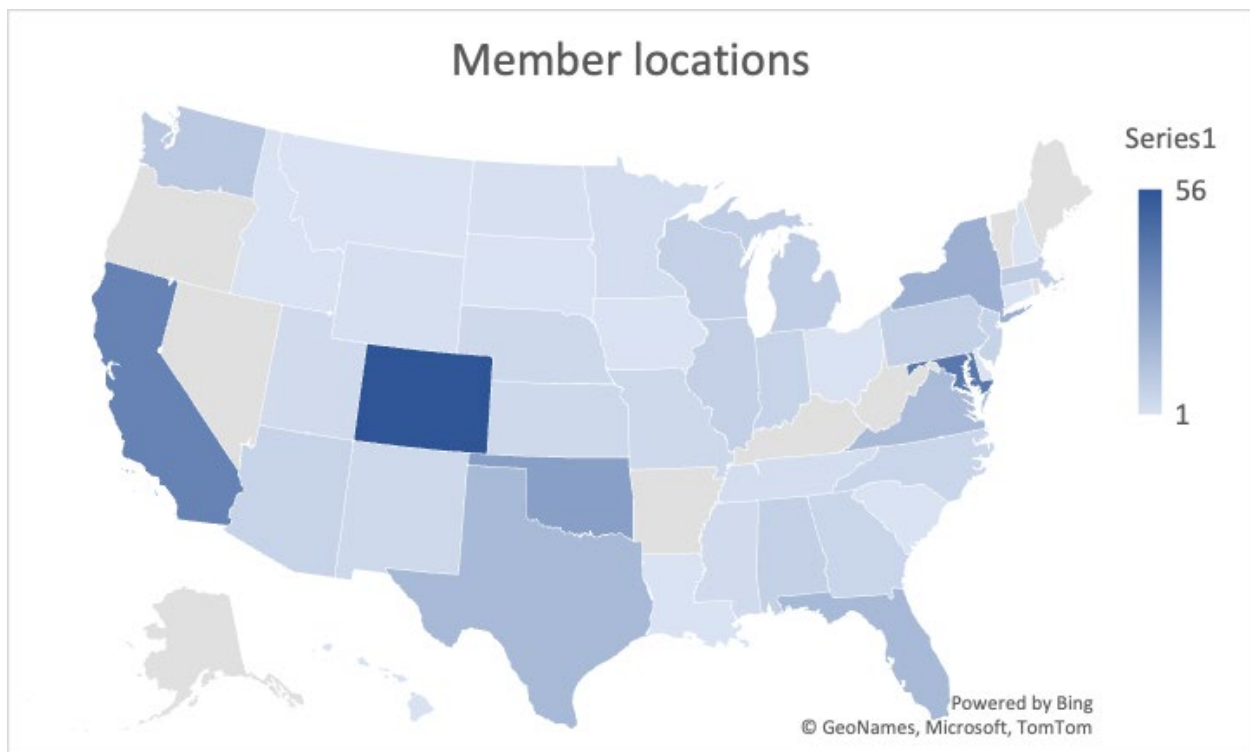
Row Labels	Female	Male	No Answer	(blank)	Grand Total
Chair	11	26			37
Co-Chairperson		1			1
Emeritus Chair	3				3
Member	122	169	1	9	301
Student Member	20	22			42
Vice-Chair	10	14			24
Grand Total	166	232	1	9	408

By affiliation, a majority of our members are from academic sector (47%), though this is a 5% decrease from last year, with the greatest increase in private sector members. 78% are AMS members.

Row Labels	Acad	Govt	Priv Sector	Student	(blank)	Grand Total
Chair	18	13	6			37
Co-Chairperson	1					1
Emeritus Chair	3					3
Member	155	88	12		46	301
Student Member				42		42
Vice-Chair	13	10	1			24
Grand Total	190	111	19	42	46	408

Row Labels	no	yes	Grand Total
Chair	3	34	37
Co-Chairperson		1	1
Emeritus Chair		3	3
Member	73	228	301
Student Member	6	36	42
Vice-Chair	6	18	24
Grand Total	88	320	408

Members came from 45 states, with California, Colorado and Maryland representing the largest contributors.



Most (93%) members were from the US, but representation from Australia, Europe, and Asia is noted.

Row Labels	Count of Member Flag
AUSTRALIA	4
AUSTRIA	1
CANADA	3
CHINA	1
CROATIA	1
FRANCE	3
GERMANY	3
GREAT BRITAIN	1
HONG KONG	1
IRELAND	1
ISRAEL	1
ITALY	1
JAPAN	2
NORWAY	1
SPAIN	1
TAIWAN	1
UNITED KINGDOM	1
UNITED STATES	381
Grand Total	408

All but 11 committees and boards have student members.

Row Labels	Chair	Co-Chairperson	Emeritus Chair	Member	Student Member	Vice-Chair	Grand Total
Agricultural and Forest Meteorology	1			6			7
Air-Sea Interaction	1			8	1	1	11
Applied Climatology	1			3	1		5

Artificial Intelligence Applications to Environmental Science	1		8	1	1	11
Atmospheric and Oceanic Fluid Dynamics	1		8	1	1	11
Atmospheric Chemistry	1		8			9
Atmospheric Electricity	1		11	2	1	15
Atmospheric Radiation		1	7	1	1	10
Aviation, Range, and Aerospace Meteorology	1		15	3	1	20
Board on Atmospheric Biogeosciences	1		4		1	6
Board on Data Stewardship	1		10		1	12
Board on Environment and Health	1		11	3	1	16
Board on Environmental Information Processing Technologies	1					1
Board on Societal Impacts	1	1	8	3		13
Board on the Urban Environment	1		5	1		7
Boundary Layers and Turbulence	1		9			10
Climate Variability and Change	1	1	13	2	1	18
Cloud Physics	1		12	2		15
Coastal Environment	1		9	1		11
Hydrology	1		16	2	1	20
Laser Atmospheric Studies	1		8	1	1	11
Measurements	1	1	7	3	1	13
Mesoscale Processes	1		6	2	1	10
Meteorological Aspects of Air Pollution	1				1	2
Meteorology and Oceanography of the Southern Hemisphere	1		3			4
Middle Atmosphere	1		8	2	1	12
Mountain Meteorology	1		11			12
Planned and Inadvertent Weather	1		7	1	1	10

Modification

Polar Meteorology and Oceanography	1	6	1	1	9
Probability and Statistics	1	5	1	1	8
Radar Meteorology	1	5	1	1	8
Satellite Meteorology, Oceanography, and Climatology	1	10	2		13
Severe Local Storms	1	11			12
Space Weather	1	8			9
Tropical Meteorology and Tropical Cyclones	2	16	1	2	21
Weather Analysis and Forecasting	2	19	3	2	26
Grand Total	37	1	3	301	42
				24	408

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.

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 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/>

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.