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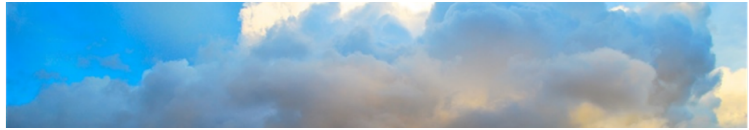
American Meteorological Society's (AMS) Weather Analysis & Forecasting Committee Strategic Plan 2022-2027+

AMS Weather Analysis & Forecasting Committee Vision:

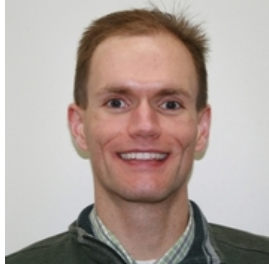
The committee that equitably serves as the trusted AMS focal point for weather analysis and forecast and numerical weather prediction visions.

AMS Weather Analysis & Forecasting Committee Mission:

The committee is dedicated to representing the diverse interests of the government, academic, and private sectors concerning weather analysis and numerical weather prediction through outreach, advocacy and conference organization.



AMS WAF Committee Strategic Vision



Dr. Clark Evans
Chair

For over a century, the American Meteorological Society (AMS) has represented members of the academic, private, and public sectors to help advance the atmospheric and related sciences through societal activities. At the AMS Centennial Meeting in 2020, the [AMS Council](#) advanced nine (9) strategic goals to help address the challenges and needs of the profession. From these goals, the society's core values were established and serve as the means through which all AMS Commissions, Boards, and Committees stand by to help advance the AMS mission.



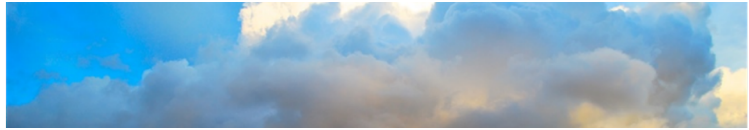
Dr. Stephen Bieda III
Vice-Chair

The AMS Committee on Weather Analysis and Forecasting (henceforth WAF Committee) serves as the focal point for weather analysis and forecasting, as well as numerical weather prediction across all sectors of the weather enterprise. As a steward of science, the committee is host to the Weather Analysis and Forecasting/Numerical Weather Prediction conferences (conducted every 18-months) and various annual Special Symposia that address important near-term subjects, reviews nominations for society-level awards, regularly updates terms in the AMS glossary, and maintains an AMS statement on Weather Analysis and Forecasting.

The future of the advancement of the weather, water and climate sciences thrives on the inspiration, passion, and diversity of the students who see meteorology, climatology, and hydrology as fields that are both welcoming and challenging. Once hired into the field, students build upon the foundation of the giants that preceded them to continue their learning and development. The development of tomorrow's workforce also requires a growth-centered environment that enables early-career professionals to become future leaders.

It is recognized that our science and technology have advanced to a state that enables us to imagine the possibilities of increased accuracy of predictions weeks to months in advance, supporting increased lead time for societal decision making. Finally, we recognize that a workforce which is reflective of the society at large, within which differences of thoughts and experiences are celebrated and incorporated into how we help society arrive at decisions, is important for both the profession as well as the services we provide.

The nation depends upon the scientific expertise of our society as we face the consequences of a changing climate. On behalf of the AMS WAF Committee, we present our 5-year strategic plan. Through this strategic plan, our committee hopes to lay a foundation of activities that will serve as a transparent and open dialogue between our members and the society at large about what is considered important to the weather and forecasting enterprise.



Focus Area 1: Student Development

Authors: Daniel Lloveras, Andrew Winters, and Kim Wood

The success of the weather and forecasting enterprise is incumbent on preparing students to effectively serve as future professionals. Students are inspired to engage in a profession in weather analysis and forecasting due to the complementary contributions towards saving lives and property from each sector (government, academic,, private) of the enterprise. In the classroom, students are challenged by the courses, instructors, and scholarships that enable them to successfully bid for and attain a position that will launch their career. At the same time, students must also be empowered to develop versatile skills that allow them to meet the challenges of a rapidly changing landscape. Our STAC committee will support efforts to train students via the following goals and objectives:

- Goal 1: Endorse changes to curricula developed by the AMS Education and AMS Ad Hoc “Mind the Gap” Committees
 - Objective 1.1: Advertise efforts by and surveys from the “Mind the Gap” and Education committees
 - Objective 1.2: Advertise successful changes to weather analysis and forecasting curricula
 - Objective 1.3: Advocate for the development of curricula that expose students to frontiers in weather analysis and forecasting (see Focus Area 4)
- Goal 2: Enhance student-student and student-professional connections
 - Objective 2.1: Facilitate virtual networking events, such as ones that could accompany committee-run conferences, to connect students with professionals
 - Objective 2.2: Collaborate with the AMS Local Chapter Affairs Committee to offer career resources and recommendations for speakers on weather analysis and forecasting topics to student chapters
 - Objective 2.3: Connect with the planning committee for the annual AMS Student Conference to recommend speakers and sessions on weather analysis and forecasting topics
 - Objective 2.4: Foster a diverse, inclusive, and supportive environment at all committee-sponsored activities so that students feel welcomed while pursuing careers in weather analysis and forecasting

AMS Mission: “Advance the atmospheric and related sciences, technologies, applications, and services for the benefit of society.”

AMS Core Values:

- *Value the integrity of science and the scientific process.*
- *Believe that a diverse, inclusive, and respectful community is essential in science.*
- *Believe that decisions affecting the society should be made in a transparent, evidence-based manner.*
- *Committed to excellence, relevance, and agility in all societal activities.*



Focus Area 2: Professional Development

Authors: Aaron Hill and Andrew Winters

The effects of the pandemic have had significant and disproportionate impacts on the professional growth of scientists, especially for those in the early-career stage. Developing a community whereby individuals can network, hone their skills, and engage with one another as part of a welcoming and collaborative environment is essential to the advancement of the weather and forecasting enterprise. The WAF committee recognizes its role in supporting professional development by focusing on the following goal and objectives:

- **Goal 1: Build Relationships and Skills that Foster Professional Growth**
 - Objective 1.1: Advertise AMS-sponsored and externally-sponsored seminars and workshops on topics of interest to the weather and forecasting community, such as cutting-edge research topics, mental health, work-life balance, and best-practices for science communication.
 - Objective 1.2: Co-sponsor AMS short courses that address skill gaps identified by AMS Ad Hoc “Mind the Gap” Committee.
 - Objective 1.3: Promote mentorship opportunities through existing AMS-sponsored programs (i.e., Mentoring365, Board of Private Sector Meteorologists) and identify/address gaps in mentorship opportunities that connect early-career scientists with mid- and late-career scientists outside of their respective institutions.

Focus Area 3: Social, Behavioral, and Economic Sciences (SBES)

Authors: Stephen Bieda and Kim Wood

The physical sciences of meteorology, hydrology, and climatology have significantly advanced, and forecast efficacy is now robust enough that service delivery is the more salient challenge to the weather and climate enterprises. Many recent examples of extreme weather events have shown alerts being delivered with hours to days of lead time, though challenges in risk communication, economic and societal inequities, political backgrounds, and other human decision factors (e.g., language translation) are being cited as examples for why loss of life and property occur. One such example occurred with Hurricane Ida in September 2021 where record flooding in New York resulted in 18 deaths. The New York Attorney General [noted](#) that a majority of the deaths occurred due to little to no proficiency in the English or Spanish languages. The WAF Committee recognizes the importance of this and many other issues identified by SBES research and will focus on the following goals and objectives:

- **Goal 1: Promote alignment of weather analysis & forecasting with SBES efforts**
 - Objective 1.1: Ensure that conferences hosted by the WAF committee include sessions highlighting SBES research efforts that would benefit the weather enterprise in collaboration with the AMS Board on Societal Impacts.



- Objective 1.2: Amplify SBES work on social media, such as those published in Weather, Climate, and Society, or other related AMS publications.
- Goal 2: Address Service Equity and Social Vulnerability
 - Objective 2.1: Promote the societal benefit of weather enterprise efforts through relationships or projects with users (starting with existing relationships or AMS efforts) that work to address service equity and social vulnerability.
 - Objective 2.2: Highlight, where applicable, the impacts resulting from significant weather events and cross-reference with social vulnerability (e.g., CDC Social Vulnerability Index).

Focus Area 4: Frontiers in Forecasting

Authors: Aaron Hill, Austin Coleman, Victor Gensini, Jon Poterjoy, and Rob Banks

A common thread among many meteorologists lies in the anticipation of hazardous atmospheric conditions that can damage property and cause loss of life. The science and art of weather forecasting has made significant strides in the last decade, but new frontiers lie ahead. In addition, recent extreme weather events have shown us the important role that communication plays when making and delivering a forecast to various constituents. Our STAC committee is well positioned to lead strategic efforts within AMS (and beyond) in the following areas:

- Goal 1: Strengthen relationships between research and operations communities
 - Objective 1.1: Establish a community “wishlist” for next-generation NWP capabilities through a live document (hosted on a platform cloud document platform) while simultaneously bringing together stakeholders from all weather enterprise sectors – via workshops, conferences, or virtual meetings (R2O2R discussions) – to identify and bridge gaps across the weather enterprise
 - Objective 1.2: More representation on committee from social sciences
 - Objective 1.3: Advocate for greater transparency in NWP systems, through soliciting and contributing to up-to-date public documentation of model and data assimilation specifications
- Goal 2: Increase forecast skill of extreme weather events
 - Objective 2.1: Focusing and communicating priority areas for development (e.g., S2S forecasting, fire weather)
 - Objective 2.2: Leverage workshops and/or full-fledged conferences towards discussions about advancing forecasting skills of these events
 - Objective 2.3: Advocate for the development of hindcasts and their best practices
 - Objective 2.4: Leverage new and emerging techniques (e.g., machine learning) for improving forecasts
- Goal 3: Support development of curricula that keep pace with modern forecasting



- Objective 3.1: Utilization of operations-to-research presentations, short course topics on the “forecast funnel”, and discussions at conferences about spatiotemporal scales that is easy-to-digest for class lectures
- Objective 3.2: Exposing students to forecasting frontiers in addition to well-established theory
- Objective 3.3: Practical and interactive conference demonstrations from all sectors

Focus Area 5: Outreach Efforts

Authors: Daniel Lloveras and Austin Coleman

Innovations within the weather analysis and forecasting community will not be meaningful unless they are shared with the broader scientific community and the general public. Since a wide range of atmospheric processes and scientific techniques fall under the umbrella of weather analysis and forecasting, our STAC committee is well positioned to bridge gaps in communication and collaboration within the AMS (i.e., statements, conferences and the glossary) and beyond. We will work to enhance outreach efforts via the following goals and objectives:

- **Goal 1: Facilitate communication and collaboration across STAC committees**
 - Objective 1.1: Compile a list of weather and forecasting initiatives shared by different committees, to be updated annually
 - Objective 1.2: Establish liaisons to connect committees with shared goals
 - Objective 1.3: Establish and advertise an inclusive and centralized communication platform (e.g., Slack) to connect weather and forecasting professionals and students
- **Goal 2: Engage in outreach activities outside of the AMS**
 - Objective 2.1: Collaborate with the AMS Board on Outreach and Informal Education to participate in and advertise opportunities to connect the general public with weather and forecasting
 - Objective 2.2: Collaborate with the AMS Board on Representation, Accessibility, Inclusion, and Diversity and the AMS Board on Pre-College Education to increase the committee’s involvement with K-12 education

Focus Area 6: Diversity, Equity, Inclusion, & Accessibility (DEIA)

Authors: Jon Poterjoy, Stephen Bieda, and Kim Wood

The WAF Committee recognizes that efforts are needed to increase diversity of the overall workforce, to treat individuals with equity, and to ensure an inclusive workforce while being accessible to all. Based on the latest available demographics provided by the US Census Bureau, women make up 24.6% of the atmospheric and space sciences workforce. Employees who identify as other than White make up 7.4% of the atmospheric and space sciences



workforce. To address these disparities, the WAF Committee has set the following as goals and objectives:

- Goal 1: Identify and Promote Historically Black Colleges & Universities, Hispanic-Serving Institutes with Atmospheric, Hydrologic, or Related Sciences
 - Objective 1.1: Ensure that scholarships or awards are identified, promoted, and highlighted for these institutions.
 - Objective 1.2: Recognize HBCU/HSI students, faculty, or staff in the weather analysis and forecasting arena for their contributions to the field.
 - Objective 1.3: Advocate for research funding experiences for undergraduates (REUs) at HBCUs and HSIs through encouraging involvement with DEIA student efforts.
- Goal 2: Be intentional about identifying and eliminating barriers that limit full participation from underrepresented groups across our community
 - Objective 2.1: Pursue creating societal-level awards, or updating award terms of reference, to recognize early career, forecasting, and service achievements that benefited marginalized communities.
 - Objective 2.2: Pursue creating and/or updating terms of reference to match societal-level awards with similar STAC-level awards.
 - Objective 2.3: Advocate for mental health support, especially for those working in weather analysis and forecasting who face trauma from historic events.
- Goal 3: Aid in increasing student diversity interest in weather analysis and forecasting (as well as the overall weather enterprise)
 - Objective 3.1: Work with K-12 efforts promoted by AMS to support student interest and diversity in weather analysis and forecasting-related careers since student interest in a given career path can begin solidifying as early as middle school.
 - Objective 3.2: Engage in and promote discussions about the Atmospheric and Related Sciences “pipeline” through academia, as it greatly influences the diversity of the future workforce.