INTRODUCTION
George Brown Convention Center
Houston, Texas
23–27 January 2022

AMS President Mike Farrar and the 102nd Annual Meeting Overall Program Committee, John Lanicci and Gina Eosco (co-chairs), Andrea Bleistein, Roger Pulwarty, and Eileen Shea, along with the program chairpersons for each conference, invite you to take part in the 102nd AMS Annual Meeting.

The 102nd Annual Meeting organizers and AMS staff are committed to ensuring that the 102nd Annual Meeting allows you to share your science and connect with one another however we can, and creating a hybrid meeting space that is valuable and engaging for everyone, whether it be in-person, remotely, or a mix of both—despite the uncertainties and challenges we are all facing. Regardless of the way you attend the Annual Meeting, we know it will be a useful and unique experience. Our plans are based on best practices and recommendations from trusted vendors, partners, and other association and meeting planning professionals.

We know that “hybrid” can be interpreted in a variety of ways. Here’s our approach:

During this “first ever” hybrid meeting, all attendees (in-person AND remote) will have access to the same content (40+ concurrent sessions each day/600+ over the course of the week. plus more than 3000 online abstracts with supplementary information). All attendees (in-person AND remote) will be able to interact with each other—and with all presenters—at the same time.
Please visit our website to explore the presentation and participation options to learn more about what an in-person and remote experience will mean to you during our first ever hybrid meeting.

**Remote Oral Presenters and Speakers**
https://annual.ametsoc.org/index.cfm/2022/your-annual/hybrid-meeting-details/remote-oral-presenters/
Speakers have the option to present at the meeting fully remotely.

**Remote Poster Presenters**
https://annual.ametsoc.org/index.cfm/2022/your-annual/hybrid-meeting-details/remote-poster-presenters/
Online content can be used to remotely present poster content and interact with attendees.

**Remote Session Chairs and Moderators**
Support remote speakers and facilitate interaction online during sessions.

**Remote Exhibits**
https://annual.ametsoc.org/index.cfm/2022/your-annual/hybrid-meeting-details/remote
More information is coming soon!

**Remote Attendees**
https://annual.ametsoc.org/index.cfm/2022/your-annual/hybrid-meeting-details/remote-attendees/
Attendees can watch and interact with all in-person sessions in real time via live stream.

**In-Person Oral Presenters and Speakers**
https://annual.ametsoc.org/index.cfm/2022/your-annual/authors-and-presenters/102nd-annual-meeting-in-person-oral-presenters-information/
Speakers can present to and interact with an in-person and remote audience.

**In-Person Poster Presenters**
Printed posters can be used to present content to attendees in the poster hall.

**In-Person Session Chairs and Moderators**
Support in-person speakers and facilitate interaction during sessions.

**In-Person Exhibits**
https://annual.ametsoc.org/index.cfm/2022/your-annual/authors-and-presenters/102nd-annual-meeting-in-person-exhibitors-information/
Exhibitors will be showcasing a wide range of products, publications, and services to all those visiting the exhibit floor in Houston.
All in-person attendees must wear masks, provide proof of vaccination, and answer a short health survey daily to gain entry to AMS meeting space in Houston.

For those joining us in Houston, health and safety is our top priority. We encourage you to read through our Commitment to Care Statement and check back often, as we will evolve these plans as our planning progresses. All in-person participants will have access to all of our usual in-person offerings, including admission to all 600+ sessions organized by 40+ conferences and symposia, the poster hall, the exhibit hall, the career fair, coffee breaks and networking receptions, as well as full access to all of our virtual content before, during, and six months after the meeting takes place.

For those that are unable to join us in Houston, we are excited to provide new options for virtual attendance. We are looking forward to welcoming new attendees that are normally unable to attend the Annual Meeting and also engaging those that can’t make it this year. All remote participants will have access to all virtual content before, during, and six months after the meeting takes place. This content includes:

- 40+ live streams from the in-person oral sessions, for a total of 600+ sessions for the week and interact/ask questions via slido
- Recordings from all in-person oral sessions
- Online meeting room links and presentation schedule for individual remote poster presentations
- Abstracts and supplementary material (such as pdfs, links etc.) for all presentations (in-person as well as remote)
- Asynchronous q&a chat with presenters (in-person as well as remote) before and after presentations take place
- Attendee to attendee (in-person and remote) messaging
- Online exhibitor listing

While this year’s Annual Meeting promises to be a unique, hybrid experience, the quality of the content we provide will remain constant. We are presenting that content through an engaging and informative technical program that is organized into conferences and symposia and revolves around the AMS Annual Meeting theme: "Environmental Security: weather, water and climate for a more secure world". The pillars of this theme will be expanded upon during cross cutting Presidential Sessions that will be of interest to many.

Please read through the following 102nd Annual Meeting Preview to begin your plans to participate in the meeting. For the most up to date information on the Annual Meeting, please visit https://annual.ametsoc.org/index.cfm/2022/ and if you have any questions, please reach out to the AMS Meetings Department at meetings@ametsoc.org.

COSPONSORS OF THE 102nd ANNUAL MEETING

Canadian Meteorological and Oceanographic Society (CMOS)
Indian Meteorological Society (IMS)
Australian Meteorological and Oceanographic Society (AMOS)
American Geophysical Union (AGU)
Chinese Meteorological Society (CMS)
European Meteorological Society (EMS)
American Academy of Environmental Engineers and Scientists
American Geosciences Institute
The Oceanography Society
Air & Waste Management Association
OFFICERS OF THE 102nd ANNUAL MEETING

2022 Overall Planning Committee
John Lanicci and Gina Eosco, Co-chairpersons
Andrea Bleistein, Roger Pulwarty, and Eileen Shea

2022 Presidential Session Organizers
◆ Ghassem Asrar◆ Jordan Beaugard◆ Annalise Blum◆ Rob Cifeli◆ Kathie Dello◆ Kristie Ebi◆ Brian Etherton◆ Jeff Freedman
◆ Mike Gremillion◆ Michelle Hawkins◆ Gaige Kerr◆ Francisco Munoz-Arriola◆ Roger Pulwarty◆ Todd Ringler◆ Owen Shieh
◆ Lauren Stuart◆ Lauren Stuart◆ Juli Trtanj◆ Eric Wertz◆ Klaus Wolter◆ John Zack.

Program Chairpersons
◆ Marta Abalos◆ Rick Anthes◆ Philip Ardanuy◆ Sarav Arunachalam◆ Ghassem Asrar◆ Bob Atlas◆ Tom Auligne◆ Robert Bauer
◆ Tom Bedard◆ Reginald Blake◆ Trevor Boucher◆ Amanda L. Burke◆ Bill Burkey◆ Melissa Burt◆ Abhishek Chatterjee◆ Scott Collis
◆ Kerry Cook◆ Marc Cotnoir◆ Aiguo Dai◆ Becky DePodwin◆ Natalia Donoho◆ Clara Draper◆ Alec Engell◆ Kacey Ernst
◆ Mike Farrar◆ Tyler Fenske◆ Jesse Feyen◆ Emily Fischer◆ Trent Ford◆ Jeff Freedman◆ Jeff French◆ David John Gagne
◆ Andy Geyer◆ Nick Grondin◆ Samson Hagos◆ Reid Hansen◆ Stephanie Henderson◆ Aaron Hill◆ David Hondula◆ Jim Hurrell
◆ Scott Jacobs◆ Jonathan Jiang◆ Dave Jones◆ Satya Kalluri◆ Tom Karl◆ Makenzie Kroak◆ Christina Kumler◆ Young-Oh Kwon
◆ Scott Landolt◆ Renee A. Leduc◆ Xiaowen Li◆ Nathaniel Livesey◆ Sharan Majumdar◆ Steve Mango◆ Sophie Mankins
◆ Zane Martin◆ Danny Mattox◆ Greg McFarquhar◆ Gary McWilliams◆ Pat Murphy◆ Terry Nathan◆ Steve Nesbitt◆ Margaret Orr
◆ Robb M. Randall◆ Kristen Rasmussen◆ Nicole Reimer◆ Mike Robinson◆ Russ Schumacher◆ Joyce Shaw◆ Owen Shieh
◆ Tim Sliwinski◆ Rick Smith◆ Jennifer Sprague-Hilderbrand◆ Tiffany Vance◆ Jamie Vickery◆ Guiling Wang◆ Yuan Wang
◆ Kris Wargan◆ Eric Wertz◆ Brandon Wolding◆ Martin Yapur◆ Jim Yoe◆ John Zack.

Local Organizing Committee
Gavin Dillingham, Meredith Jennings, Bill Read, and Lance Wood

102nd Annual Meeting Health and Safety Task Force
◆ Kristie Ebi◆ Clark Evans◆ Scott Jacobs◆ Eileen Shea◆ Elyse Smith◆ Tiffany Vance◆ Stephanie Armstrong◆ Emily DeLuca◆
Jessica Hanley◆ Jen Ives◆ Katy Putsavage◆ Jenn Rosen

Meetings Department Staff
Jen Ives, Director of Meetings
Jenn Rosen, Senior Meetings & Exhibits Manager
Cati Iannarilli, Senior Meetings Coordinator
Serena Roche, Senior Meetings Coordinator
Marissa Welch, Senior Meetings Coordinator
Christine Card, Meetings Coordinator
Jessica Hanley, Meetings Coordinator

LOCATION OF FUNCTIONS AND EVENTS
AMS committee meetings, some receptions, and some events will be held at the AMS headquarters hotel, the Hilton Americas—Houston located at 1600 Lamar St, Houston, TX 77010. Annual Meeting registration, scientific sessions, poster sessions, exhibits, short courses, and town hall meetings will be held in the George Brown Convention Center, located at 1001 Avenida De Las Americas, Houston, TX 77010.

For those that are unable to join us in Houston, we are excited to provide new options for virtual attendance. We are looking forward to welcoming new attendees that are normally unable to attend the Annual Meeting and also engaging those that can’t make it this year. All remote participants will have access to all virtual content before, during, and six months after the meeting takes place.
CONFERENCES AND SYMPOSIA

Conferences and symposia represent the core of the AMS Annual Meeting. They provide the foundation for the organization of our technical sessions. To view the program online, please visit: https://annual.ametsoc.org/index.cfm/2022/program-events/conferences-and-symposia/. The following conferences and symposia are planned for the 102nd AMS Annual Meeting.

- 21st Annual Student Conference
- 10th AMS Conference for Early Career Professionals
- Presidential Forum
- Richard H. Johnson Symposium
- Kevin E. Trenberth Symposium
- 38th Conference on Environmental Information Processing Technologies
- 36th Conference on Hydrology
- 35th Conference on Climate Variability and Change
- 31st Conference on Education
- 31st Conference on Weather Analysis and Forecasting (WAF)/27th Conference on Numerical Weather Prediction (NWP)
- 27th Conference on Probability and Statistics
- 26th Conference on Applied Climatology
- 26th Conference on Integrated Observing and Assimilation Systems for the Atmosphere, Oceans, and Land Surface (IOAS-AOLS)
- 25th Conference of Atmospheric Science Librarians International
- 24th Conference on Atmospheric Chemistry
- 23rd Conference on Planned and Inadvertent Weather Modification
- 22nd Symposium on Meteorological Observation and Instrumentation
- 22nd Conference on Aviation, Range, and Aerospace Meteorology
- 22nd Conference on the Applications of Air Pollution Meteorology with the A&WMA
- 21st Conference on Artificial Intelligence for Environmental Science
- 21st Conference on Middle Atmosphere
- 20th Symposium on the Coastal Environment
- 20th History Symposium
- 19th Conference on Mesoscale Processes
- 19th Conference on Space Weather
- 18th Annual Symposium on Operational Environmental Satellite Systems
- 17th Symposium on Societal Applications: Policy, Research and Practice
- 14th Symposium on Aerosol–Cloud–Climate Interactions
- 13th Conference on Weather, Climate, and the New Energy Economy
- 13th Conference on Environment and Health
- 12th Conference on Transition of Research to Operations
- 12th Symposium on Advances in Modeling and Analysis Using Python
- 10th Symposium on the Weather, Water, and Climate Enterprise
- 10th Symposium on Building a Weather-Ready Nation: Enhancing Our Nation’s Readiness, Responsiveness, and Resilience to High Impact Weather Events
- 10th AMS Symposium on the Joint Center for Satellite Data Assimilation (JCSDA)
- 10th Symposium on the Madden-Julian Oscillation and Sub-Seasonal Monsoon Variability
- Eighth Symposium on High Performance Computing for Weather, Water, and Climate
- Seventh Symposium on US-International Partnerships
- Fifth Conference on Earth Observing SmallSats
- Third Symposium on Diversity, Equity, and Inclusion
- First Symposium on Earth Prediction Innovation and Community Modeling
- Major Weather Events and Impacts of 2021
- Symposium on Radar Science in the Service of Earth System Predictability

TECHNICAL PROGRAM

The technical presentations that take place within the various Annual Meeting conferences and symposia represent the core of the AMS Annual Meeting. They provide the foundation for the organization of our technical sessions. To view the full technical program online, please go to https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi.
### AMS 102nd Annual Meeting Conference at a Glance

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<th>Time</th>
<th>Sunday, 23 January</th>
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**MOBILE APP**

The 102nd AMS Annual Meeting Mobile App is due to be released in early December. Check here for information: [https://annual.ametsoc.org/index.cfm/2022/your-annual/mobile-app/](https://annual.ametsoc.org/index.cfm/2022/your-annual/mobile-app/).
PRESIDENTIAL SESSIONS

2022 AMS Presidential Forum, Sponsored by VAISALA

SUNDAY, 23 JANUARY, 2022 4:00–5:00 P.M.

The 2022 AMS Presidential Forum will engage attendees in a discussion with an exceptionally distinguished panel representing international, national, regional and local institutions engaged in advancing environmental security in the face of rapid and long-term physical, societal, and technological changes. The panelists will focus on the need and approaches for crafting virtuous and agile feedback loops among science, policy and practice; the public, private, and civil society partnerships.

Moderator: Mike Farrar, AMS President.

Panelists: Jane Lubchenco, Deputy Director for Climate and Environment in the White House Office of Science and Technology Policy; Mami Mizutori, Special Representative of the UN Secretary-General for Disaster Risk Reduction and the head of the United Nations Office for Disaster Risk Reduction (UNDRR, formerly UNISDR); Alice Hill, the David M. Rubenstein senior fellow for energy and the environment at the Council on Foreign Relations, and co-chair of the California Climate Insurance Working Group; Sherri Goodman, Senior Fellow at the Polar Institute and the Environmental Change & Security Program at the Woodrow Wilson International Center and Senior Strategist at the Center for Climate and Security, and Secretary General of the International Military Council on Climate & Security; and Sylvester Turner, Houston’s 62nd mayor serving his second four-year term.

https://annual.ametsoc.org/index.cfm/2022/program-events/conferences-and-symposia/presidential-forum-and-sessions/presidential-forum/

Panelists

Jane Lubchenco  Mami Mizutori  Alice Hill  Sherri Goodman  Sylvester Turner

NAMED SESSIONS

The Andy Majda Memorial Session on Tropical Convection and Waves
Monday, January 24, 2022
https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Session/59480

The Legacy and Impact of Dr. William M. “Bill” Lapenta
Monday, January 24, 2022
https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Session/59376

William W. Vaughan session on Technical Developments of Terrestrial Weather Information in Support of Commercial Space Operations Transgressing the Atmosphere Aviation, Range, and Aerospace Operations
Wednesday, January 26, 2022
https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Session/59528
Presidential Forum Sessions

The Annual Meeting theme is organized around five environmental security pillars, which often have several linkages and dependencies on one another. Organizers have planned this year’s Presidential Sessions around these pillars:

**Extreme weather:** national and human security impacts of extreme weather and climatic events.

**Health security:** environmental and security issues associated with minimizing “the danger and impact of acute public health events that endanger the collective health of populations living across geographical regions and international boundaries.” (WHO, n.d.: Health security. Accessed Apr. 7, 2020 from https://www.who.int/health-security/en/)

**Energy security:** environmental and security issues associated with ensuring uninterrupted availability of energy sources that are affordable, reliable, and accessible.

**Water security:** environmental and security issues associated with a population’s capacity to safeguard sustainable access to adequate quantities of acceptable-quality water for sustenance of livelihoods, well-being, and socioeconomic development, and for protecting against threats from waterborne pollution and water-related disasters.

**Food security:** environmental and security issues associated with the need for consistent physical, social, and economic access to sufficient, safe, and nutritious food that meets people’s dietary needs.

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<tr>
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<td>Session 1: Understanding the connections between weather, water, climate, and health security •</td>
<td>Session 5: Defining Water Security Across Scales, Disciplines and Communities •</td>
<td>Session 9: Texas Weather Disasters—Everything is Bigger here? •</td>
<td>Session 13: Physical and Social Processes Responsible for Water and Food Security Risks •</td>
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<td>Session 2: Critical Environmental Health Challenges on Mental Health, Energy Security, and Risk Assessment • •</td>
<td>Session 6: The struggle for environmental justice: Successes, challenges, and implications for the weather-water-climate enterprise •</td>
<td>Session 10: Integrating Environmental Justice into Extreme Weather Preparedness and Response in Texas and Beyond •</td>
<td>Session 14: History of Environmental Security •</td>
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<td>Session 3: Advancing awareness of environmental threats to human health through the integration of NASA Earth Observations • •</td>
<td>Session 7: Weather, Climate and Global Food Security</td>
<td>Session 11: Enhancing Civil-Military Coordination Before, During, and After Extreme Weather •</td>
<td>Session 15: Energy Security in the era of 100% renewables •</td>
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<td><strong>3:45 P.M.</strong></td>
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<tr>
<td>Session 4: Health Security: Air Quality in Texas Cities •</td>
<td>Session 8: Science and Diplomacy Session: Science and Diplomacy in Changing Climate Change •</td>
<td>Session 12: Grid Vulnerability to Weather and Climate Extremes—past, present, and future •</td>
<td></td>
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<tr>
<td>Monday, 24 January at 3:30 p.m.</td>
<td>Tuesday, 25 January at 3:30 p.m.</td>
<td>Wednesday, 26 January at 3:45 p.m.</td>
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</tbody>
</table>
SPECIAL CONFERENCES

21st Annual Student Conference
22–23 January 2022 | George R. Brown Convention Center
Securing the Future: Guiding Tomorrow's Leaders in the Weather, Water, and Climate Enterprise
Intended for all undergraduate and graduate students, sessions at the student conference will focus on self-exploration and understanding through exposure to career options and recent research in the geosciences. The conference concludes with a poster session featuring student presenters on Sunday evening. In addition to the traditional, in-person poster session on Sunday, there will also be an asynchronous remote poster session. While all registered attendees of the Student Conference and Annual Meeting are encouraged to attend the poster session, those attending sessions on Saturday and Sunday must be an active AMS member and register separately from the Annual Meeting. More details can be found at https://annual.ametsoc.org/index.cfm/2022/program-events/conferences-and-symposia/21st-annual-student-conference/.

10th AMS Conference for Early Career Professionals
24–25 January 2022 | George R. Brown Convention Center
The 10th AMS Conference for Early Career Professionals serves as a gateway for graduate students and those early in their careers to connect and network with other members, boards, and leaders of AMS. Registration for this conference is included in the 102nd Annual Meeting in-person and remote registration. More details can be found at https://annual.ametsoc.org/index.cfm/2022/program-events/conferences-and-symposia/10th-AMS-conference-for-early-career-professionals/.

25th Conference of Atmospheric Science Librarians International
26–27 January 2022 | George R. Brown Convention Center
Registration for the ASLI Conference does NOT include registration for other 102nd AMS Annual Meeting events, but ASLI Conference registrants are encouraged to visit the exhibits. Information on registration for this conference will be posted in November. For more information, visit https://annual.ametsoc.org/index.cfm/2022/program-events/conferences-and-symposia/25th-conference-of-atmospheric-science-librarians-international/.

LECTURES

Bernard Haurwitz Lecture
Monday, 24 January 2022, 10:45–11:45 A.M.
The Bernhard Haurwitz Memorial Lecturer recognizes an outstanding scientist for significant contributions to the understanding of atmospheric and oceanic fluid dynamics, the circulation of the middle atmosphere, or the dynamics of climate. This lecture will be given in a session sponsored by the 35th Conference on Climate Variability and Change by Isla Simpson, National Center for Atmospheric Research, Boulder, CO. The title of the lecture is “Future Projections in the Large Scale Circulation Response to Climate Change: Uncertainties, Implications, and Progress from CMIP5 to CMIP6.” https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Session/60188

Walter Orr Roberts
Monday, 24 January 2022, 3:45–5:00 P.M.
The Walter Orr Roberts Lecturer in Interdisciplinary Sciences is selected in recognition of significant contributions to the understanding of atmospheric processes through the effective interchange of knowledge between atmospheric science disciplines or between atmospheric scientists and scientists of other disciplines.

The Walter Orr Roberts Lecture will be given in a session sponsored by the 24th Conference on Atmospheric Chemistry. The lecture will be given by Allison Steiner, University of Michigan, Ann Arbor, MI. The title of the lecture is “The Terrestrial Biosphere: An interface between atmospheric chemistry and climate.” https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Session/60853

Robert H. Horton
Wednesday, 26 January 2022, 2:30–2:45 P.M.
The Robert E. Horton Lecturer in Hydrology is selected in recognition of a scientist for outstanding research on topics of interest to both hydrologists and meteorologists. The purpose of the lecture is to encourage and foster an interchange of ideas between meteorologists and hydrologists.

The Robert H. Horton Lecture will be given in a session sponsored by the 36th Conference on Hydrology. The lecture will be given by Francina Dominguez, University of Illinois at Urbana-Champaign, Urbana, IL. The title of the lecture is “Land-Atmosphere Interactions in the Americas: From Local to Continental Scale Hydroclimate.” https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Session/60642

HIGHLIGHTED SESSIONS

Town Hall Meetings
Town Halls provide a valuable opportunity for extended interactive two-way dialogue among the Weather, Water, and Climate Enterprise and other interested groups for the benefit of the AMS community. These engagements can include a wide range of topic areas and formats that do not typically fit into the traditional AMS Annual Meeting program.

For more information on Town Hall Meetings at the 102nd Annual Meeting, please visit https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Program/1547.
<table>
<thead>
<tr>
<th>Town Hall</th>
<th>Date and Time</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>NASA's Earth Science Flight Program—Planning For The Next-Generation Earth Observatories: Dr. Charles E. Webb (NASA HQ)</td>
<td>Monday, January 24, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Stephen A. Mango (<a href="mailto:Stephen.Mango@noaa.gov">Stephen.Mango@noaa.gov</a>).</td>
</tr>
<tr>
<td>NOAA Leadership’s Priorities</td>
<td>Monday, January 24, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact James Morrow (<a href="mailto:james.morrow@noaa.gov">james.morrow@noaa.gov</a>).</td>
</tr>
<tr>
<td>The Weather Enterprise: Transitioning Weather Research into Operations to Save Lives, Reduce Property Damage, and Enhance the National Economy</td>
<td>Monday, January 24, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Chantel Bivins (<a href="mailto:chantel.bivins@noaa.gov">chantel.bivins@noaa.gov</a>).</td>
</tr>
<tr>
<td>Enhancing the Ocean-Atmosphere Nexus: The Role and Opportunity of the UN Decade of Ocean Science for Sustainable Development</td>
<td>Tuesday, January 25, 2022, 7:00–8:15 a.m.</td>
<td>For additional information contact Craig McLean (<a href="mailto:Craig.McLean@noaa.gov">Craig.McLean@noaa.gov</a>).</td>
</tr>
<tr>
<td>NOAA Big Data Project</td>
<td>Tuesday, January 25, 2022, 7:00–8:15 a.m.</td>
<td>For additional information contact Nazila Merati (<a href="mailto:nazila.merati@Noaa.gov">nazila.merati@Noaa.gov</a>).</td>
</tr>
<tr>
<td>NSF and Geoscience Innovation: Accelerating Your Ideas to Impact</td>
<td>Tuesday, January 25, 2022, 7:00–8:15 a.m.</td>
<td>For additional information contact Barbara Ransom (<a href="mailto:bransom@nsf.gov">bransom@nsf.gov</a>).</td>
</tr>
<tr>
<td>The National Coordinated Soil Moisture Monitoring Network: Current Activities, Future Priorities</td>
<td>Tuesday, January 25, 2022, 7:00–8:15 a.m.</td>
<td>For additional information contact Marina Skumanich (<a href="mailto:marinask@ucar.edu">marinask@ucar.edu</a>).</td>
</tr>
<tr>
<td>Federal Meteorological Enterprise Coordination for Advancing Services</td>
<td>Tuesday, January 25, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Ammarita Mariotti (<a href="mailto:ammarita.mariotti@ostp.eop.gov">ammarita.mariotti@ostp.eop.gov</a>).</td>
</tr>
<tr>
<td>A Dialogue on Establishing a National Solar Geoengineering Research Program</td>
<td>Tuesday, January 25, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Amanda Staudt (<a href="mailto:astaudt@nas.gov">astaudt@nas.gov</a>).</td>
</tr>
<tr>
<td>The Role of Remote Sensing Observations, Products, and Forecasts-Predictions in Achieving and Sustaining Regional and Global Food and Environmental Security</td>
<td>Tuesday, January 25, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Stephen A. Mango (<a href="mailto:Stephen.Mango@noaa.gov">Stephen.Mango@noaa.gov</a>).</td>
</tr>
<tr>
<td>World Through My Eyes Accessibility Roundup</td>
<td>Tuesday, January 25, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Alyssa Bates (<a href="mailto:alyssa.bates@noaa.gov">alyssa.bates@noaa.gov</a>).</td>
</tr>
<tr>
<td>Building Capacity for Social Science Research into the Weather Enterprise</td>
<td>Tuesday, January 25, 2022, 6:00–7:15 p.m.</td>
<td>For additional information contact Jamie Vickery (<a href="mailto:vickery@uw.edu">vickery@uw.edu</a>).</td>
</tr>
<tr>
<td>NASA Earth Science Division (ESD) Town Hall</td>
<td>Tuesday, January 25, 2022, 6:00–7:15 p.m.</td>
<td>For additional information contact Jack A. Kaye (<a href="mailto:jack.kaye@nasa.gov">jack.kaye@nasa.gov</a>).</td>
</tr>
<tr>
<td>Open science expectations for simulation based research: What data and code needs to be preserved and shared with others to support published research?</td>
<td>Tuesday, January 25, 2022, 6:00–7:15 p.m.</td>
<td>For additional information contact Douglas Schuster (<a href="mailto:schuster@ucar.edu">schuster@ucar.edu</a>).</td>
</tr>
<tr>
<td>Spotlight on Space Weather Risks and Resilience: Preparing for Solar Cycle 25</td>
<td>Tuesday, January 25, 2022, 6:00–7:15 p.m.</td>
<td>For additional information contact Jennifer Meehan (<a href="mailto:jenifer.meehan@noaa.gov">jenifer.meehan@noaa.gov</a>).</td>
</tr>
<tr>
<td>UFS Community Modeling Forum</td>
<td>Wednesday, January 26, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Jose-Henrique Alves (<a href="mailto:henrique.alves@noaa.gov">henrique.alves@noaa.gov</a>).</td>
</tr>
<tr>
<td>US CLIVAR Town Hall on Climate at the Coasts</td>
<td>Wednesday, January 26, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Michael Patterson (<a href="mailto:mpatterson@usclivar.org">mpatterson@usclivar.org</a>).</td>
</tr>
<tr>
<td>NASA Weather and Atmospheric Dynamics Focus Area Town Hall</td>
<td>Wednesday, January 26, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Aaron Piña (<a href="mailto:rina.aaron@gmail.com">rina.aaron@gmail.com</a>).</td>
</tr>
<tr>
<td>Just as I AM: Mental Health Awareness in Meteorological Community</td>
<td>Wednesday, January 26, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Jason B. Wright (<a href="mailto:JasonBWrightP@yahoo.com">JasonBWrightP@yahoo.com</a>).</td>
</tr>
<tr>
<td>Linking the field forecasting needs to the solutions in the analysis and short-term forecast range through the requirements of the National Weather Service</td>
<td>Wednesday, January 26, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Young-Joon Kim (<a href="mailto:young-joon.kim@noaa.gov">young-joon.kim@noaa.gov</a>).</td>
</tr>
<tr>
<td>Open Science and NASA: Goals, the present, and the future</td>
<td>Wednesday, January 26, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Kevin Ward (<a href="mailto:kevin.a.ward@nasa.gov">kevin.a.ward@nasa.gov</a>).</td>
</tr>
<tr>
<td>The Climate Consensus—A multi-institution outreach network</td>
<td>Wednesday, January 26, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Janel Hanrahan (<a href="mailto:janel.hanrahan@northernvermont.edu">janel.hanrahan@northernvermont.edu</a>).</td>
</tr>
<tr>
<td>NOAA Satellites and Data: Observing a Rapidly Changing World</td>
<td>Wednesday, January 26, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Alek Krautmann (<a href="mailto:alek.krautmann@noaa.gov">alek.krautmann@noaa.gov</a>).</td>
</tr>
<tr>
<td>NOAA’s Unified Forecast System Research to Operations Project</td>
<td>Wednesday, January 26, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Yan Xue (<a href="mailto:Yan.Xue@noaa.gov">Yan.Xue@noaa.gov</a>).</td>
</tr>
<tr>
<td>Science and Deployment Plan for the DOE Third Atmospheric Radiation Measurement Mobile Facility: Coupled Observational-Modeling Studies of Land-Aerosol-Cloud Interactions in the Southeastern United States</td>
<td>Wednesday, January 26, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Chongai Kuang (<a href="mailto:ckuang@bnl.gov">ckuang@bnl.gov</a>).</td>
</tr>
<tr>
<td>NASA Earth Science Division Commercial Smallsat Data Acquisition Program: Overview and Update</td>
<td>Thursday, January 27, 2022, 12:15–1:15 p.m.</td>
<td>For additional information contact Manil Maskey (<a href="mailto:manil.maskey@nasa.gov">manil.maskey@nasa.gov</a>).</td>
</tr>
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HIGHLIGHTED PRESENTATIONS

Award Winners
Each year, AMS presents over thirty awards to leaders in the weather, water, and climate community. Many of the 2022 winners will present at our Annual Meeting. [https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Index/AwardWinner~Yes](https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Index/AwardWinner~Yes)

<table>
<thead>
<tr>
<th>Award Winner</th>
<th>Conference Title</th>
<th>Presentation Title</th>
<th>Day, Time, Location</th>
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<tbody>
<tr>
<td>Cecilia M. Bitz</td>
<td>35th Conference on Climate Variability and Change</td>
<td>Polar Amplification in Response to Large Volcanic Eruptions</td>
<td>Wednesday, January 26, 2022 10:45–11:15 a.m. George R. Brown Convention Center, 332BC</td>
</tr>
<tr>
<td>Kelly Chance</td>
<td>13th Conference on Environment and Health</td>
<td>Tropospheric Emissions: Monitoring of Pollution (TEMPO): Update on Mission Status and Science</td>
<td>Wednesday, January 26, 2022 8:30–8:45 a.m. George R. Brown Convention Center, 320C</td>
</tr>
<tr>
<td>Rong Fu</td>
<td>35th Conference on Climate Variability and Change</td>
<td>What Is the Main Source of Moisture in the Atmosphere over the Congo Basin?</td>
<td>Tuesday, January 25, 2022 1:45–2:00 p.m. George R. Brown Convention Center, 332BC</td>
</tr>
<tr>
<td>George N. Kiladis</td>
<td>21st Conference on Middle Atmosphere</td>
<td>The Concept of Self-Similarity in Andy Majda’s Thinking on Convectively Coupled Waves</td>
<td>Monday, January 24, 2022 10:45–11:00 a.m. George R. Brown Convention Center, 332BC</td>
</tr>
<tr>
<td>10th Symposium on the Madden-Julian Oscillation and Sub-Seasonal Monsoon Variability</td>
<td>Dependence of the Structures of Stratospheric Kelvin and Mixed Rossby–Gravity Waves on the Basic-State Background Flow</td>
<td>Wednesday, January 26, 2022 4:45–5:00 p.m. George R. Brown Convention Center, 351BC</td>
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</table>
Prabhat Kumar Sr.
19th Conference on Mesoscale Processes
Early Duplex Vertical Seeding (EDVS) Hail Mitigation: Swarm-Drone Controlled Technology
Tuesday, January 25, 2022 5:00–6:30 p.m.
George R. Brown Convention Center,

23rd Conference on Planned and Inadvertent Weather Modification
CG Lightning Jump, Tornado, and Secondary Vortices
Wednesday, January 26, 2022 5:00–6:30 p.m.
George R. Brown Convention Center,

Frank D. Marks Jr.
20th Conference on Transition of Research to Operations
Future Directions for Hurricane Research and HFIP
Thursday, January 27, 2022 1:45–2:00 p.m.
George R. Brown Convention Center, 372AD

Kate D. Musgrave
18th Annual Symposium on Operational Environmental Satellite Systems
Evaluation of Lightning Climatology in the Atlantic and Eastern Pacific Using Data from the Geostationary Lightning Mapper
Thursday, January 27, 2022 4:00–4:15 p.m.
George R. Brown Convention Center, 352DEF

Paul A. Newman
21st Conference on Middle Atmosphere
Relative Stratospheric and Tropospheric Air Fractions in the Tropopause Transition Layer Using Water and Ozone Concentrations
Monday, January 24, 2022 2:00–2:15 p.m.
George R. Brown Convention Center, 351BC

Venkatachalam Ramaswamy
14th Symposium on Aerosol–Cloud–Climate Interactions
The Radiative Forcing of Climate Change: Roles of Greenhouse Gases and Aerosols
Wednesday, January 26, 2022 8:30–9:00 a.m.
George R. Brown Convention Center, General Assembly B

Steven A. Rutledge
Richard H. Johnson Symposium
Mid-Latitude Mesoscale Convective System: Dick Johnson’s work in PRE-STORM
Wednesday, January 26, 2022 1:45–2:00 p.m.
George R. Brown Convention Center, Grand Ballroom A

Isla Simpson
2022 Bernard Haurwitz Lecture, 35th Conference on Climate Variability and Change
Future Projections in the Large-Scale Circulation Response to Climate Change: Uncertainties, Implications, and Progress from CMIP5 to CMIP6
Monday, January 24, 2022 10:45–11:00 a.m.
George R. Brown Convention Center, General Assembly A

36th Conference on Hydrology
Improvement in the Representation of Wintertime Surface Temperature Variability in CESM2 Related to the Representation of Snow Density
Monday, January 24, 2022 1:30–1:45 p.m.
George R. Brown Convention Center, 381ABC

John R. Toohey-Morales
22nd Symposium on Meteorological Observation and Instrumentation
Wrecked: Using Radar to Explore the Impacts of Atlantic Tropical Cyclones on Bird Migrants
Tuesday, January 25, 2022 4:15–4:30 p.m.
George R. Brown Convention Center, 362AD
New Fellows

Each year, AMS elects Fellows that have exemplified outstanding contributions to the atmospheric or related oceanic or hydrologic sciences or their applications during a substantial period of years. Be sure to catch a presentation made by one of our new 2022 Fellows. [https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Index/NewFellowAward~Yes](https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Index/NewFellowAward~Yes)

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<tr>
<th>New Fellow</th>
<th>Conference Title</th>
<th>Presentation Title</th>
<th>Day, Time, Location</th>
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<tbody>
<tr>
<td>Mian Chin</td>
<td>14th Symposium on Aerosol–Cloud–Climate Interactions</td>
<td>Role of Aerosol-Cloud-Radiation Interactions in Determining Multi-Decadal Trends of Solar Radiation Reaching the Surface</td>
<td>Wednesday, January 26, 2022 9:00–9:30 a.m. George R. Brown Convention Center, General Assembly B</td>
</tr>
<tr>
<td>Andreas Fink</td>
<td>35th Conference on Climate Variability and Change</td>
<td>Debilitating Floods in the Sahel Are Becoming Frequent</td>
<td>Tuesday, January 25, 2022 10:45–11:00 a.m. George R. Brown Convention Center, 332BC</td>
</tr>
<tr>
<td>Stephen W. Harned</td>
<td>36th Conference on Hydrology</td>
<td>Validation of Satellite Rainfall Estimates over Equatorial East Africa</td>
<td>Thursday, January 27, 2022 2:30–2:45 George R. Brown Convention Center, 382ABC</td>
</tr>
<tr>
<td>Andrew J. Heymsfield</td>
<td>Seventh Symposium on US-International Partnerships</td>
<td>An International Meteorological Forensic Case Involving Five Countries: United States, United Kingdom, Russia, Latvia, and Canada</td>
<td>Monday, January 24, 2022 2:45–3:00 p.m. George R. Brown Convention Center, 370ABC</td>
</tr>
<tr>
<td>Gerald Monroe Heymsfield</td>
<td>14th Symposium on Aerosol–Cloud–Climate Interactions</td>
<td>The Ice Phase Aloft, at the Surface, and in a Changing Climate</td>
<td>Wednesday, January 26, 2022 9:30–10:00 a.m. George R. Brown Convention Center, General Assembly B</td>
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<tr>
<td></td>
<td>Symposium on Radar Science in the Service of Earth System Predictability</td>
<td>Convective Vertical Air Motion Estimation from Nadir Pointing Airborne Doppler Radar</td>
<td>Wednesday, January 26, 2022 2:45–3:00 p.m. George R. Brown Convention Center, 371EF</td>
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<tr>
<td>Speaker</td>
<td>Title</td>
<td>Topic</td>
<td>Date and Time</td>
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<tr>
<td>Faisal Hossain</td>
<td>17th Symposium on Societal Applications: Policy, Research and Practice</td>
<td>Building on the Success of Satellite Radar Altimeter Applications</td>
<td>Wednesday, January 26, 2022 9:15–9:30 a.m.</td>
</tr>
<tr>
<td>Valliappa Lakshmanan</td>
<td>21st Conference on Artificial Intelligence for Environmental Science</td>
<td>Research and Commercial Opportunities for Machine Learning and Weather</td>
<td>Monday, January 24, 2022 10:45–11:15 a.m.</td>
</tr>
<tr>
<td>Julie K. Lundquist</td>
<td>12th Conference on Weather, Climate, and the New Energy Economy</td>
<td>Upper-Aтmosphere Smoke Injection from Large Areal Fires</td>
<td>Monday, January 24, 2022 2:45–3:00 p.m.</td>
</tr>
<tr>
<td>Gudrun Magnusdottir</td>
<td>10th Symposium on the Madden-Julian Oscillation and Sub-Seasonal Monsoon Variability</td>
<td>Effect of the Quasi-biennial Oscillation on the MJO Teleconnections in the Southern Hemisphere</td>
<td>Monday, January 24, 2022 2:00–2:15 p.m.</td>
</tr>
<tr>
<td></td>
<td>35th Conference on Climate Variability and Change</td>
<td>Arctic Amplification in the Free Atmosphere (700 hPa) and Implications for Arctic to Midlatitude Teleconnections</td>
<td>Wednesday, January 26, 2022 11:45 a.m.–12:00 p.m.</td>
</tr>
<tr>
<td>Sara C. Pryor</td>
<td>13th Conference on Weather, Climate, and the New Energy Economy</td>
<td>Power and Wakes in the U.S. East Coast Offshore Lease Areas</td>
<td>Tuesday, January 25, 2022 8:30–8:45 a.m.</td>
</tr>
<tr>
<td>Hui Su</td>
<td>24th Conference on Atmospheric Chemistry</td>
<td>An OSSE Framework for Coupling Meteorology and Atmospheric Composition Observing Systems</td>
<td>Wednesday, January 26, 2022 3:45–4:00 p.m.</td>
</tr>
<tr>
<td></td>
<td>35th Conference on Climate Variability and Change</td>
<td>Impact of Deep Convective Parameterization on Low Cloud Feedback and Climate Sensitivity</td>
<td>Thursday, January 27, 2022 2:30–2:45 p.m.</td>
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<tr>
<td>Guiling Wang</td>
<td>36th Conference on Hydrology</td>
<td>Thursday, January 27, 2022 2:30–2:45 p.m.</td>
<td>Monday, January 24, 2022 1:45–2:00 p.m.</td>
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Core Science Keynotes
This series of Invited Talks at AMS Annual Meetings are intended to highlight, discipline by discipline, the history, foundational knowledge, and research challenges that drive our field forward. This year, we welcomed Core Science Keynotes that link the individual session topic to the theme of "Environmental Security: weather, water and climate for a more secure world."

https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Index/CoreKeynote~Yes

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<thead>
<tr>
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<tbody>
<tr>
<td>Anderson Banihirwe</td>
<td>12th Symposium on Advances in Modeling and Analysis Using Python</td>
<td>Building Tools for the Scientific Python Community</td>
<td>Monday, January 24, 2022 1:30–2:00 p.m. George R. Brown Convention Center, 370DEF</td>
</tr>
<tr>
<td>Valliappa Lakshmanan</td>
<td>21st Conference on Artificial Intelligence for Environmental Science</td>
<td>Research and Commercial Opportunities for Machine Learning and Weather</td>
<td>Monday, January 24, 2022 10:45–11:15 a.m. George R. Brown Convention Center, 360DEF</td>
</tr>
<tr>
<td>William Randel</td>
<td>21st Conference on Middle Atmosphere</td>
<td>Chemistry–Climate Coupling and the Middle Atmosphere</td>
<td>Monday, January 24, 2022 3:45–5:00 p.m. George R. Brown Convention Center, 351BC</td>
</tr>
<tr>
<td>Venkatachalam Ramaswamy</td>
<td>14th Symposium on Aerosol–Cloud–Climate Interactions</td>
<td>The Radiative Forcing of Climate Change: Roles of Greenhouse Gases and Aerosols</td>
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<td>The Ice Phase Aloft, at the Surface, and in a Changing Climate</td>
<td>Wednesday, January 26, 2022 9:30–10:00 a.m. George R. Brown Convention Center, General Assembly B</td>
</tr>
</tbody>
</table>
### SHORT COURSES/WORKSHOPS

At the Annual Meeting, we offer short courses and workshops that will enable you to increase your skills and knowledge in your chosen area of expertise or learn about another. Short courses take place Saturday and Sunday, 22–23 January 2022, prior to the Annual Meeting and require a separate registration from Annual Meeting registration.

To view the short course descriptions and to register, please visit [https://annual.ametsoc.org/index.cfm/2022/program-events/short-courses-workshops](https://annual.ametsoc.org/index.cfm/2022/program-events/short-courses-workshops/).

<table>
<thead>
<tr>
<th>Short Course</th>
<th>Day, Time, Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>MetPy for Quantitative Analysis of Meteorological Data</td>
<td>Sunday, January 23, 2022, 9:00 A.M.–3:45 P.M., GRB 322AD</td>
</tr>
<tr>
<td>AI in Weather Radars</td>
<td>Sunday, January 23, 2022, 8:45 A.M.–3:45 P.M., GRB 322B</td>
</tr>
</tbody>
</table>
EVENTS

While the technical sessions at the Annual Meeting provide countless opportunities to learn about and share your science, you’ll also find many chances to network with your colleagues, collaborate informally, and help celebrate with our robust events program. https://annual.ametsoc.org/index.cfm/2022/program-events/networking-and-events/

INFORMATION FOR PRESENTERS

All authors should visit the AMS Abstract Author and Presenters page to learn more about managing their abstracts online and presenting their work at an AMS Meeting. For more detailed information about presenting at the 102nd Annual Meeting, please visit https://annual.ametsoc.org/index.cfm/2022/your-annual/authors-and-presenters/

Important dates:

- 15 December 2021: Deadline to select presentation date(s) and time(s) for Remote Poster Presenters
- 5 January 2022: Deadline to submit a prerecorded video for Remote Oral Presenters (optional)
- 24–27 January 2022: Abstracts are presented during the 102nd Annual Meeting
- 25 February 2022: Supplementary information upload deadline

Login details for Presenter’s Corner (https://ams.confex.com/ams/102ANNUAL/gateway.cgi) can be found on the Authors and Presenters FAQ (https://annual.ametsoc.org/index.cfm/2022/your-annual/authors-and-presenters/102nd-annual-meeting-authors-and-presenters-faq/).

Information for Oral Presenters

Loading Presentations Files:
If you have not already done so in Presenter’s Corner and are attending in-person, speakers may upload their presentations onto the Speaker Ready Room computers, which are networked to the proper meeting room. The use of personal laptops for presentations, which can cause technical delays and cut into a presenter’s time, is discouraged.

Presenters who choose to load their presentations at the meeting will be required to use special installer software running on the Speaker Ready Room PC, which is networked to the meeting room PC. These presenters will not be permitted to store their files on the PC desktop. Instead, the installer software will automatically create a special directory for those files. Once stored in the directory, presenters will be able to check that their files were copied and that they will run properly.

Sustainability at Buffalo Bayou Park Field Trip

Organized by the AMS Committee on Environmental Stewardship

1:00–3:45 P.M. CT Sunday, January 23rd (weather permitting)
2:30 P.M.—Shuttle bus departs George R. Brown Convention Center
3:45 P.M.—Return trip arrives at George R. Brown Convention Center

Field Trip Fee: $25

The 160-acre Buffalo Bayou Park stretches 2.3 miles through the heart of Houston, creating a multi-purpose space that improves flood mitigation, protects natural resources, and enhances public safety. Prior to the field trip, a diverse panel will discuss the scientific and social importance of the Buffalo Bayou Park. Weather-permitting, participants will have the opportunity to tour the Buffalo Bayou Park and observe strategies to provide conservation and utilitarian services to the city.
Presenters who have questions, are invited to visit the Speaker Ready Room outside of 212 of the GRB during the following hours:

- Sunday, 23 January 2020 12:00 P.M.–3:45 P.M.
- Monday, 24 January 2020 7:30 A.M.–6:00 P.M.
- Tuesday, 25 January 2020 7:30 A.M.–6:00 P.M.
- Wednesday, 26 January 2020 7:30 A.M.–6:00 P.M.
- Thursday, 27 January 2020 7:30 A.M.–5:00 P.M.

**In-Person Presentation File Guidelines:**
- The aspect ratio for projectors in session rooms is 16:9, with a resolution of 1280x720.
- The file size limit for upload in Presenter’s Corner is 200MB. If your file exceeds the size limit, please upload your presentation at the meeting in the Speaker Ready Room.
- The following file types may be uploaded: PDF document (*.pdf), PowerPoint presentation (*.ppt), PowerPoint presentation (*.pps), PPTX file (*.pptx), or PPSX file (*.ppsx).
- If your graphics or video clips are not embedded in your presentation, be sure to upload them in Presenter’s Corner and/or bring them to the meeting as well.
- Animated .gif files can occasionally be problematic; a free demo version of Easy Gif Animator can easily convert these animated .gif files to .avi files, which can then be added into your presentation.
- Make sure that codecs used for compressed animation and video files are generic codecs, not video hardware–specific codecs.

**Remote Presentation File Guidelines:**
Remote oral speakers are able to upload an Optional Backup Presentation File. Remote speakers will join the in-person session room via Zoom 30 minutes before scheduled session time and present their slides by sharing their screen during the scheduled presentation time.

The following file types may be uploaded: PDF document (*.pdf), PowerPoint presentation (*.ppt), PowerPoint presentation (*.pps), PPTX file (*.pptx), or PPSX file (*.ppsx).

**Recordings:**
In an attempt to expand the audience for presentations and to provide a more complete and permanent record of the authors’ remarks, presentation recordings will be made available in the online program and mobile app (48 hours after your session ends).

Copyright of recorded presentations remains with the author(s). Permission to use figures, tables, and brief excerpts from presentations is granted provided that the source is acknowledged. Any use of material in presentations that is determined to be “fair use” under § 107 of the U.S. Copyright Act or that satisfies the conditions specified in § 108 of the U.S. Copyright Act (17 USC § 108, as revised by P.L. 94-553) does not require the permission. Republication, systematic reproduction, password sharing, posting in the electronic form on other servers, or other uses of this material, excepted by the above statement, requires written permission or a license from the author(s).

**Information for Poster Presenters**
A poster support desk is located in Hall B3 of the GRB.
In-Person Poster Sessions will take place in Hall B3 of the GRB:

- Monday, 24 January 5:00–6:30 p.m.
- Tuesday, 25 January 5:00–6:30 p.m.
- Wednesday, 26 January 5:00–6:30 p.m.
- Thursday, 27 January 5:00–6:30 p.m.

Remote Posters will be presented during presenter selected times. Remote poster presentations will be given via presenter supplied meeting link (Zoom, GoogleMeet etc) during the self-selected Presentation times and meeting links (Zoom, GTM, etc.), which will be noted in the online program and mobile app.

**Poster Presentation Guidelines:**
- For maximum viewing, a suggested setup completion time is noon (lunch).
- Posters will be set up, presented, and taken down on the same day.
- The Standard Poster Display is a 4’H x 6’W (1.2m x 1.8m) (a NEW smaller size) double-sided Velcro covered panel. These panels have a horizontal/landscape orientation. Presenters are not permitted to move the boards or change the orientation.
- You can mount your poster with AMS supplied push pins or Velcro.
- Only one accepted abstract/topic is allowed on each board.

**ATTENDING THE 102nd ANNUAL MEETING**

**In Person Attendees**

Information Desk
Lost? Have a question about the Annual Meeting? Stop by the AMS Info Desk, located in the Hall B3 at the GRB during the following hours:

- Saturday, 22 January 2020 7:30 A.M.–6:00 P.M.
- Sunday, 23 January 2020 7:30 A.M.–6:00 P.M.
- Monday, 24 January 2020 7:30 A.M.–6:00 P.M.
- Tuesday, 25 January 2020 7:30 A.M.–6:00 P.M.
- Wednesday, 26 January 2020 7:30 A.M.–6:00 P.M.
- Thursday, 27 January 2020 7:30 A.M.–3:00 P.M.
AMS Headshot Studio
Sponsored by GENERAL DYNAMICS

Stop by the AMS Headshot Studio in Hall B3 at the Annual Meeting and get a professional headshot! The AMS Headshot Studio will be open Sunday–Tuesday and no appointment is necessary. Thank you to General Dynamics Mission Systems for their sponsorship of this new opportunity at the AMS Annual Meeting.

Hours of operation:
- Sunday, January 23rd: 12:30–2:00 p.m., 2:30–4:00 p.m., 5:30–8:00 p.m.
- Monday, January 24th: 10:00–11:30 a.m., 12:00–1:30 p.m., 2:30–4:00 p.m., 4:30–6:30 p.m.
- Tuesday, January 25th: 10:00–11:30 a.m., 12:00–1:30 p.m., 2:30–4:00 p.m., 4:30–6:30 p.m.

Accommodations
Hilton Americas - Houston (Headquarters)
1600 Lamar St, Houston, TX 77010
Distance to Convention Center: 0.1 Miles (3 min walk) and connected by a sky bridge.
https://annual.ametsoc.org/index.cfm/2022/travel/hotels/hilton-americas-houston-headquarters/

Marriott Marquis Houston
1777 Walker St, Houston, TX 77010
Distance to Convention Center: 0.1 Miles (3 min walk) and connected by a sky bridge.
https://annual.ametsoc.org/index.cfm/2022/travel/hotels/marriott-marquis-houston/

Additional information on the AMS-contracted hotels can be found at https://annual.ametsoc.org/index.cfm/2022/travel/hotels/

Transportation
Getting to Houston
There are two airport systems in Houston: Houston George Bush Intercontinental Airport (IAH) and William P. Hobby Airport (HOU).

Additional information on both airports and additional information on your transportation options can be found here: https://www.visithoustontexas.com/travel-planning/getting-to-and-around-houston/

William P. Hobby Airport
7800 Airport Blvd, Houston, TX 77061

Getting Around Houston
AMS encourages all attendees to use public transportation to and from the airport and around Houston. For additional information, please look here: https://www.visithoustontexas.com/travel-planning/getting-to-and-around-houston/

Rideshare
Uber: https://www.uber.com/cities/houston/
Lyft: https://www.lyft.com/rider

Taxi Information
Taxi service is available throughout the city. Houston has authorized a flat taxi fare of $6 for all trips in the downtown area. Current fares are approximately $60–$75.00 one way from George Bush Intercontinental Airport (IAH) and $30–$45.00 one way from William P. Hobby Airport.

Options include:
- Fiesta Cab Co. (713) 225-2666
- Liberty Cab Co. (713) 444-4444
- Lone Star Cab Co. (713) 444-4444
- Yellow Cab Houston (713) 236-1111

Additional information on transportation can be found at https://annual.ametsoc.org/index.cfm/2022/travel/transportation/

Food and Entertainment
https://www.visithoustontexas.com/

Visitor Services
Visit Houston staff will be available for attendees to ask questions about the city of Houston and surrounding areas, get directions, restaurant recommendations, as well as information on things to do and see while visiting. The is located in the available on the first floor of the George R. Brown Convention Center.

Volunteer at the 102nd Annual Meeting
Volunteering at the 102nd Annual Meeting is a great way to expand your network! We are looking for volunteers to help at registration, the information desk, in the speaker ready room, as in-person session chairs... and more. Please note: interested volunteers must complete the Google Form (https://forms.gle/SgPJsEep1pRWLCwlK8) by December 1st.

Ways to Volunteer
Registration: Help the AMS Meetings Staff and attendees check in and print their badges at our new self-service registration kiosks.
Info Desk: Help answer questions and provide directions
Speaker Ready Room: Help presenters upload their presentation.
Session Room: Audiovisual Help
In-Person Session Chair: In-person session Chairs moderate sessions and help facilitate Q&As. More information can be found on the Session Chair Page.
Student Competition Judge: Attends and judges a student presentation (oral/poster, in-person/remote).
Health and Safety Team: Help AMS Health and Safety Team apply guidelines put forth in the 102nd Annual Meeting Commitment to Care.
Student Assistant Program: Work directly with AMS staff at the AMS Annual Meeting in Houston, Texas. Please note, the application deadline has passed.

Never volunteered with AMS before? No worries, we will provide any necessary training!

Student Support
Travel Grants
Travel grants are for current senior undergraduate or graduate AMS student members interested in attending the AMS Annual Meeting. The application deadline has passed.
https://annual.ametsoc.org/index.cfm/2022/your-annual/students/student-travel-grants/

Assistant Program
Be sure to say hi and thank the AMS Student Assistants who will be running the AV in our session rooms! The application deadline has passed.
https://annual.ametsoc.org/index.cfm/2022/your-annual/students/student-assistant-program/

Award Opportunities
See which conferences and symposia will be giving awards!
https://annual.ametsoc.org/index.cfm/2022/your-annual/students/student-awards-and-opportunities/

Health and Safety
From its inception, the AMS has been committed to health and safety. As we continue to plan for the 102nd Annual Meeting, our highest priority remains the health and safety of everyone attending the meeting as well as the community of Houston, Texas. As such, we are closely monitoring news and guidance from the Centers for Disease Control & Prevention, the World Health Organization, and local health agencies regarding travel and events. We will be using this news and guidance, as well as the results of several attendee surveys, to evolve our Commitment to Care Statement, which details all of the strategies we are employing to assure your health and safety at the Annual Meeting.

ACCESSIBLE, SAFE, AND INCLUSIVE MEETINGS FOR ALL
Professional and Respectful Conduct at AMS Meetings

Need to report unprofessional or disrespectful conduct?
Email conduct@ametsoc.org or call 617-226-3965.

- AMS is committed to safe and inclusive meetings for all attendees.
- Harassment, intimidation, or discrimination of any kind will not be tolerated at any meeting or event associated with the meeting.
- All communication should be appropriate for a professional audience including people of many different backgrounds. Be inclusive and respectful.
- The recording or transmissions of any education sessions, presentations, demos, videos, or content in any format is strictly prohibited.
- Participants should not copy or take screenshots of Q&A or any chat room activity that takes place in the virtual space.
- This statement is meant to cover all meeting-associated events, including those sponsored by organizations other than AMS but held in relation to AMS events. This includes the scientific program, short courses, and exhibitions, as well as receptions, town hall meetings, and other informal or formal gatherings associated with AMS. Similarly, participants shall adhere to this code of conduct in online spaces related to the meeting and meeting-associated events, including Facebook, Twitter, and other online venues.
- Those who violate the standards of professional and respectful conduct may be asked to leave the meeting immediately and without refund, may not be considered for service on AMS boards and committees, and may be subject to additional legal action.
- Harassment, intimidation, or discrimination includes offensive comments and actions related to age, gender, gender identity, sexual orientation, disability, physical appearance, body size, race, religion; sexual images in public spaces; deliberate intimidation, stalking, or following; harassing photography or recording; sustained disruption of talks or other events; inappropriate physical contact; and unwelcome sexual attention.
- If you are the subject of unacceptable behavior or have witnessed any such behavior, please immediately
  - notify an AMS Staff Member (wearing a blue ribbon at an in person meeting),
  - email conduct@ametsoc.org or call 617-226-3965, or
  - email AMS Executive Director, Keith Seitter, kseitter@ametsoc.org
- If you witness or experience behavior that constitutes an immediate and serious threat, please call 911.
Members of the response team:
- Keith Seitter, Executive Director
- Stephanie Armstrong, Associate Executive Director
- Brian Papa, Associate Executive Director
- Jen Ives, Associate Director of Meetings
- Jenn Rosen, Senior Exhibits Manager
- Claudia Gorski, Director of Meetings
- Wendy Abshire, Education Program Director

Inclusivity at AMS
AMS is committed to creating an environment for meetings that "embraces diversity through the inclusion of individuals across age, gender, race, sex, nationality, ethnicity, physical ability, marital status, sexual orientation, body shape or size, gender identity and expression, socioeconomic status, and other facets of social diversity" (see: Diversity and Inclusion at AMS).

Inclusivity at the 102nd Annual Meeting
The American Meteorological Society (AMS) is committed to, and benefits from the full and equitable participation of a diverse community in its membership, in its activities, and in the audiences that it serves.

Plans for making the 102nd Annual Meeting inclusive for all include:

- Any meeting participant will be able to honor the languages they speak as well as preferred gender pronouns with a sticker for their badge.
- AMS is offering child care grants of up to $400 per family to assist conference attendees who will incur additional expenses by attending the Annual Meeting. Limited funds are available and preference is given to applicants in the early stages of their career. As a secondary criterion, preference will be given to applicants who explain clearly why a grant to support childcare, dependent care or their own assistance is necessary. The application deadline has passed.
- AMS Meetings staff arranges accessibility accommodations in accordance with the ADA.
- AMS Meetings staff ensures that gender neutral/family restrooms are available to meeting attendees.
- AMS has developed and continually enforces its policy Professional and Respectful Conduct at AMS Meetings.
- During the Third Symposium on Diversity and Inclusion, sessions that are cross-cutting between DEI, belongingness, and accessibility (DEIBA) and the geophysical sciences will take place. The intent is to create joint sessions between underrepresented communities and the geophysical processes that impact them. For more information, visit the Third Symposium on Diversity, Equity, and Inclusion webpage.
- We invite all attendees to the following events and sessions:
  - Colour of Weather Reception, Sunday, 23 January 2022, 6:30–8:30 p.m. CT, https://annual.ametsoc.org/index.cfm/2022/program-events/networking-and-events/events/colour-of-weather-reception/
  - Coriolis Reception, Sunday, 23 January 2022, 7:30–9:30 p.m. CT, https://annual.ametsoc.org/index.cfm/2022/program-events/networking-and-events/events/coriolis-reception/
  - Diversity Workshop with AdvanceGeo, Monday, 24 January 2022
  - Joint Session: Advocates and Allies (held between the 10th AMS Conference for Early Career Professionals and the Third Symposium on Diversity, Equity, and Inclusion), Monday, 24 January 2022, 8:30–10:30 a.m., George R. Brown Convention Center, 332EF, https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Session/59487
  - BRAID Annual Meeting, Monday, 24 January 2022, 3:00–4:30 p.m., Hilton, 335 AB
  - Session 5: Creating and Nurturing an Equitable and Inclusive Weather, Water, and Climate Community: Part I (Third Symposium on Diversity, Equity, and Inclusion), Tuesday, 25 January 2022, 8:30–10:00 a.m., George R. Brown Convention Center, 371AD, https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Session/59544
  - Session 6: Creating and Nurturing an Equitable and Inclusive Weather, Water, and Climate Community: Part II (Third Symposium on Diversity, Equity, and Inclusion), Tuesday, 25 January 2022, 10:45 a.m.–12:00 p.m., George R. Brown Convention Center, 371AD, https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Session/60524
  - Presidential Forum on Environmental Justice, Tuesday, 25 January 2022, 10:45 a.m.–12:00 p.m., George R. Brown Convention Center, Grand Ballroom B, https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Session/60664
  - Session 7 Inclusive and Accessible Science: Engaging with Diverse and Underrepresented Communities (Third Symposium on Diversity, Equity, and Inclusion), Tuesday, 25 January 2022 1:30–3:00 p.m., George R. Brown Convention Center, 371AD, https://ams.confex.com/ams/102ANNUAL/meetingapp.cgi/Session/59212
REGISTRATION

Registration for the AMS 102nd Annual Meeting is open online! View rates and special conference registration information, registration policies here: https://annual.ametsoc.org/index.cfm/2022/registration/ and register today!

Registration rates for the 102nd Annual Meeting are the same for in-person and remote participants. We made this decision so that we can offer a robust, flexible, and equal experience for everyone, whether you are in-person or remote.

Before you register, please note two important updates for the AMS 102nd Annual Meeting:

• Member rates will only be available for 2022 members. Please renew your membership for 2022 before registering for the meeting.
• All attendees must sign off on our Health and Safety Policy and Waiver indicating their agreement to: attend in-person only if symptom-free and vaccinated; wear a mask; and adhere to all guidelines put forth in the Commitment to Care statement.

Registration Policies

• Everyone presenting (both oral and poster, in-person or virtually) and/or attending the 102nd AMS Annual Meeting (in-person or virtually) must register. Early registration rates are valid through Wednesday, 1 December 2021.
• Please note that an individual must have a 2022 AMS membership to receive a Member registration rate.
• Please contact the AMS Meetings department (meetings@ametsoc.org) with requests or questions regarding cancellations.
• Refunds (less a $50 processing fee) will be granted for cancellations received on or before 5 January 2022.
• After 5 January 2022, refunds for cancelled registrations will not be granted.
• By registering for the AMS Annual Meeting, you are agreeing to adhere to the Professional and Respectful Conduct at AMS Meetings policy.
• Abstract Fee: Please note that the abstract fee of $95 is refundable only if the abstract is NOT accepted. The abstract fee is separate from the registration fee.

The following societies are cosponsoring the 2022 AMS Annual Meeting:

Canadian Meteorological and Oceanographic Society (CMOS)
Indian Meteorological Society (IMS)
Australian Meteorological and Oceanographic Society (AMOS)
American Geophysical Union (AGU)
Chinese Meteorological Society (CMS)
European Meteorological Society (EMS)
Air & Waste Management Association
American Academy of Environmental Engineers and Scientists
American Geosciences Institute
The Oceanography Society

Press Registration

The AMS operates a Press Room each year at the Annual Meeting, which provides an excellent opportunity for media with a plethora of presentations, special programs, and exhibits. Eligibility for press registration is limited to the working press and freelance science writers with appropriate identification, as well as public information officers of scientific societies, educational institutions, and government agencies.

In completing AMS Press Registration, the following conditions must be agreed to:

• No videotaping is allowed within session rooms.
• Press members are expected to adhere to the same guidelines as attendees when it comes to Professional and Respectful Conduct at AMS Meetings.
• Press credentials are provided as a courtesy by AMS and may be revoked by AMS if in its sole judgment an attendees presence at the meeting is in any way disruptive.

Photo Release

From time to time AMS uses photographs of conference events in its promotional materials. Unless this permission is revoked in writing to AMS, by virtue of their attendance all conference visitors agree to the use of their likeness in such materials.
Statement on Open Meetings
Throughout the week, AMS Committees, Boards, and the Council will be meeting at various times and locations. These meetings are, in principle, open to all members of the Society, although portions of some meetings may be held in executive sessions when dealing with personnel issues, awards, or other matters of a confidential nature.

As a matter of courtesy and to ensure adequately sized meeting rooms, members wishing to observe a particular Committee, Board, or Council Meeting should contact its chairperson in advance. Members may request a place on the agenda by following a similar procedure. Please feel free to contact Jen Ives at jives@ametsoc.org for more information.

Attendee Lists
AMS will make attendee lists available to any registered attendee. Attendees who do not want their name and address information included on the list must note this at the time of their registration. Please send an email (meetings@ametsoc.org) to request a copy of the attendee list. The list will only be delivered in an electronic format and will contain names, addresses, and affiliations (if provided). No phone numbers or email addresses will be provided.

EXHIBITORS

The AMS Annual Meeting is host to the largest exhibit program anywhere in the atmospheric, oceanic, and related sciences. Exhibitors come from all over the United States and abroad showcasing a wide range of products, publications, and services.

Exhibit Hours
Monday, 24 January 5:00–8:00 P.M. (internal walk-around 5:00–6:00 P.M.; ribbon cutting at 6:00 P.M.)
Tuesday, 25 January 9:00 A.M.–6:30 P.M.
Wednesday, 26 January 9:00 A.M.–6:30 P.M.
Thursday, 27 January 9:00 A.M.–12:00 P.M.

For more information of exhibit check in, please contact Jenn Rosen, AMS Senior Meeting and Exhibits Manager (jrosen@ametsoc.org) or visit https://annual.ametsoc.org/index.cfm/2022/exhibitors/.

BEACONS

The AMS Beacons Program is rooted in former Executive Director Kenneth Spengler’s legacy of fostering the AMS as an open, inclusive, and welcoming organization.

At the 102nd AMS Annual Meeting in Houston, Beacons will once again be available to assist anyone in attendance—from the first-timer who needs directions to a seasoned attendee who needs some timely and thoughtful advice. Beacons, who may be identified by their bright yellow lanyards, are a volunteer, complementary resource to the AMS staff and are trained on what questions and information should be referred to AMS staff members. For information on how to volunteer as a Beacon, contact Beth Farley, AMS director of Member Services (bfarley@ametsoc.org).

First timers or those who are seeking assistance in navigating the Annual Meeting are also invited to attend our Newcomer’s Welcome and Informational Exchange. For more information, visit https://annual.ametsoc.org/index.cfm/2022/your-annual/ams-beacons/.
AMS MEETS TWEETS AND BLOGS

With a number of presentations to be given at the 2022 AMS Annual Meeting both in Houston and remotely, the best way to stay up to date with all that is going on is by following all of the AMS social media channels.

The Front Page blog (www.blog.ametsoc.org) extends the reach of attendees and exhibitors beyond the Conference Center walls to fellow members back home and to the general public. In addition to news and commentary during the week in Houston, the blog features special sessions, news about presenters, tips for attendees, and explores the links between AMS science, the meeting agenda, and the world in the months leading up to the meeting.

In addition to The Front Page, follow the breaking stories and ongoing conversations at the Annual Meeting in real time on Facebook and Twitter. To stay up to date, be sure to “like” AMS on Facebook (www.facebook.com/ametsoc) and follow @ametsoc on Twitter and Instagram. The hashtag for the Annual Meeting is #AMS2022.

AMS BOOTH

Hall A3, No. 523
Come see what your Society is doing for you! Visit the AMS Booth and further your knowledge on member resources, community engagement, volunteering opportunities, our high-impact journals and award-winning books and certification programs, K-12 education initiatives, opportunities for students and early career professionals, and the AMS Policy Program. AMS provides many opportunities for everyone across our community, whether you’re a student, just starting your career, or have years of experience. Be sure to stop by to learn more about Your Community. Your Society. Your Success.

Meet the AMS Leadership

Stop by the AMS Booth (No. 523, Hall A3) to meet AMS President, Mike Farrar, AMS President-Elect Rich Clark, and other members of the AMS leadership team. Please stop by, ask questions and get to know your AMS leadership from 10:00–10:45 a.m. Tuesday, Wednesday, and Thursday.

SPONSORS

We would like to thank our diamond level sponsors:

GENERAL DYNAMICS

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VAISALA

Corporate Patron

Interested in supporting AMS and the 102nd Annual Meeting? Visit https://annual.ametsoc.org/index.cfm/2022/sponsorship-opportunities/
Equity and Inclusion at the 102nd AMS Annual Meeting

At-a-Glance: 23–27 January 2022

Many of your colleagues work directly on DEI and social justice. Here are some of their sessions and papers planned for the meeting. Events are open to all virtual attendees.

<table>
<thead>
<tr>
<th>Central time</th>
<th>Sunday 23 Jan</th>
<th>Monday 24 Jan</th>
<th>Tuesday 25 Jan</th>
</tr>
</thead>
<tbody>
<tr>
<td>AM</td>
<td></td>
<td>3rd Symposium on Diversity, Equity, and Inclusion opens: Advocates and Allies joint session w/ 10th Early Career. 8:30–10:30 AM</td>
<td>Creating and Nurturing an Equitable and Inclusive Weather, Water, and Climate Community: Part I. 3rd DEI. 8:30–10:00 AM</td>
</tr>
<tr>
<td>Later AM</td>
<td></td>
<td>Inclusive Risk Communication: Understanding the Communities We Serve. 17th Societal Applications. Monday: 10:45 AM–12:00 PM</td>
<td>Panel Discussion: The Struggle for Environmental Justice. Joint Presidential Session with 10th WWC Enterprise and 3rd DEI. 10:45 AM–12:00 PM</td>
</tr>
<tr>
<td>Midday</td>
<td></td>
<td></td>
<td>Town Hall Meeting: &quot;World Through My Eyes&quot; Accessibility Roundup. 12:15–1:15 PM</td>
</tr>
<tr>
<td>Early PM</td>
<td></td>
<td>Accelerating Climate Action through Equitable and Just Education, Civic Engagement, and Workforce Development. Joint session of 31st Education, 35th Climate Variability and Change, and 3rd DEI. 1:30–3:00 PM</td>
<td>Inclusive and Accessible Science: Engaging with Diverse and Underrepresented Communities. 3rd DEI. 1:30–3:00 PM</td>
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<td>Later PM</td>
<td>RECEPTIONS Colour of Weather. 7:00–9:00 PM; Coriolis. 7:30–9:30 PM</td>
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<td>CIC (Culture and Inclusion Cabinet) Meeting. 3:00–5:00 PM</td>
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<td>BRAID Meeting. 3:00 – 4:30 PM</td>
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Active Learning in the Atmospheric Sciences. 31st Education. Monday: 8:30–10:00 AM

Ethical and Responsible AI and Trust for Weather and Climate. 21st AI Conf. Monday: 11:15 AM

Eunice Foote: Her Unseen 1856 Meteorology…Advancing Women into Science. 20th History. Monday: 1:30 PM


Utilization of Key ASL Phrases by Broadcast Meteorologists to Reach Deaf and Hard of Hearing Communities in Dangerous Weather Coverage. 10th Building a Weather-Ready Nation. Monday: 4:00 PM,

A Heat Vulnerability Index for the Southeastern United States Using Socioeconomic and Environmental Data. 13th Environment and Health. Tuesday: 8:45 AM

Janet Liou Mark Memorial Session: Increasing Minority Participation in the Atmospheric Sciences. 31st Education Conf. Tuesday: 8:30–10:00 AM
You’ll find information about Accessibility, Safety, and Inclusivity at the Annual Meeting at https://annual.ametsoc.org/index.cfm/2022/your-annual/accessibility-safety-and-inclusivity-at-the-meeting/

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<th>Wed 26 Jan</th>
<th>Thursday 27 Jan</th>
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<tr>
<td>Women's Workshop: Working Toward Closing the Gender Equality Gap Panel Discussion. 3rd DEI. 10:45 AM–12:00 PM</td>
<td>Environmental Justice and Air Quality. 24th Atmospheric Chemistry Conf. Thursday: 8:30–10:00 AM</td>
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<tr>
<td>Panel Discussion: Extreme Weather: Integrating Environmental Justice into Extreme Weather Preparedness and Response in Texas and Beyond. Joint Presidential Session with Major Weather Events and Impacts 2021. 10:45 AM–12:00 PM</td>
<td>An Afrofuturist Connection to Critical Thinking and Climate Change. 25th ASLI Conf. Thursday: 10:45 AM</td>
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<td>Women in Atmospheric Science Luncheon. 12:00–1:15 PM</td>
<td>Panel Discussion: Leading the Way in Equity to Advance the Weather, Water, and Climate Enterprise: Part I. 10th Weather, Water, and Climate Enterprise. 1:30–3:00 PM</td>
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<td>Panel Discussion: Leading the Way in Equity to Advance the Weather, Water, and Climate Enterprise, Part II. 10th Weather, Water, and Climate Enterprise. 3:45–5:00 PM</td>
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How a silver lining forms

It starts at sea.
Tropical waters heat up.
Warm air soars skyward.
Cold air rushes to the void.
Cold air warms up.
Cycle repeats.
Faster and faster—a 50,000 foot engine of air.
At seventy four miles per hour it earns a name.
Harvey, Irma, Katrina.
Then landfall.
Roads rendered useless.
Buildings destroyed.
Families stranded.
But for a brief moment.
A silver lining appears.
People see neighbors instead of strangers.
And labels that divide are forgotten.

But when rains ease.
when clouds part.
silver linings need not fade.

Let’s embrace our shared humanity.
Let’s connect with one another.
Let’s find our love for each other.
Every single day.

Come together at lovehasnolabels.com