2023: Connecting the Data Points: Enriching Today’s Students to Become Tomorrow’s Scientists

Saturday, January 7, 2023:

7:30–8:45 AM  |  STUDENT CONFERENCE REGISTRATION  |  Kiosks outside of Hall A
7:30–8:45 AM  |  COFFEE + NETWORKING

8:45–10:00 AM  |  SESSION 1: Welcoming Remarks & Keynote  |  Mile Hile Ballroom 2/3 & Zoom
  Session Chairs:
  Holly Mallinson, University of Illinois at Urbana-Champaign, Urbana, IL
  Aaron Alexander, University of Wisconsin-Madison, Madison, WI
  Margaret Orr, Center for Climate Change Communication, George Mason Univ., Fairfax, VA

8:45–9:05 AM  |  Welcome from the Student Conference Planning Committee
  Student Conference Co-Chairs

9:05–9:15 AM  |  Welcome from the AMS President
  Rich Clark

9:15–9:25 AM  |  Welcome from the AMS Executive Director
  Stella Kafka

9:25–9:40 AM  |  Establishing Foundations in Meteorology
  Paul Sirvatka (Lorenz Winner)

9:40–10:00 AM  |  Crowdsourced Data- How it Works and CoCoRaHS’s Successful Harnessing of it
  Henry Reges (Keynote)

10:00–10:30 AM  |  COFFEE + NETWORKING

10:30 AM–11:30 AM  |  SESSION 2: Mind, Body, Attitude  |  Mile Hile Ballroom 2/3 & Zoom
  Session Chair: Brandon Cohen, University of Oklahoma, Norman, OK

  Sometimes we get so caught up in trying to find the perfect job or get into the best graduate school that we forget to take care of our mental and physical health. This session will focus on just that; stretching your mind, taking care of your body, and maintaining a healthy attitude towards work and personal time.

10:30 - 10:45 AM  |  Setting Boundaries as a Key to Your Professional and Personal Success
  Steve Nesbitt

10:45 - 11:00 AM  |  What's wrong with me? Why can't I just...: Mental Health and ADHD
  Annareli Morales

11:00 - 11:15 AM  |  Finding Your Superpowers…Managing Physical and Mental Health
  Jameese Sims

11:15 - 11:30 AM  |  Taking Care of Your Sensors: Obtaining and Retaining a Sense of Self When the Stakes Feel High
  Elizabeth Smith
11:40–12:25 PM  **SESSION 3: RQ Panels**

**Education**  Mile High Ballroom 2/3 & Zoom  
*Session Chair: Haven Cashwell, Auburn University, Auburn, AL*

*Have you ever wondered how you can continue learning about and researching education in the atmospheric sciences? This session will show students a glimpse into what discipline based education research is within the realm of atmospheric science as well as current research that is being conducted in this field. Students will have the opportunity to ask panelists questions after hearing about various education research during lightning talks by panelists.*

11:40 - 11:50 AM  Overview of topic - Developing and Inspiring the Next Generation of Scientists: An Overview of Research in Teaching and Learning in the Atmospheric Sciences  
*Casey Davenport*

11:50 - 11:55 AM  Lightning Talk #1 - Geocognition and Geoscience Education Research  
*Karen McNeal- virtual speaker*

11:55 - 12:00 PM  Lightning Talk #2 - Momentum in ASER: Join the Movement!  
*Wendi Flynn*

12:00 - 12:05 PM  Lightning Talk #3 - Creating Educational Experiences About Our Planet, Its Weather, and Climate  
*Lisa Gardiner*

12:05 - 12:25 PM  Q&A

**Insurance and Risk Analysis**  Room 501 & Zoom  
*Session Chair: Laura Shedd, University of Oklahoma, Norman, Oklahoma*

*The weather and climate impacts our day to day lives, but how might it impact corporations who rely on an understanding of the forecast in order to stay in business? How does weather and climate impact our built environment and what can be done to better mitigate the risk? In this session, students will learn about the connections between the insurance industry and weather, water and climate sciences along with how risk analysis comes into play with this. This will be done through an overview of the topic and three "lightning talks" from experts in this field as well as an open Q&A time for our panelists.*

11:40 - 11:50 AM  Overview of topic - What you need to learn to do climate risk analysis that you may not get in your meteorology degree  
*Luke Madaus*

11:50 - 11:55 AM  Lightning Talk #1 - Science, Engineering & Insurance: A Career at the Intersection of Weather and Our Built Environment
Renewable Energy

Session Chair: Jacob Hale, Texas A&M University, College Station, Texas

Alternative sources of energy such as solar, hydropower, and wind generated electricity are key in sustainability plans for our climate. In this session, students learn about the connections between renewable energy and weather, water, and climate sciences with an overview of the topic and three “lightning talks” from experts in the field. In addition, there is ample time for Q&A and conversation with these professionals.

     Bri-Mathias Hodge
11:50 - 11:55 AM  Lightning Talk #1 - Weather and climate consulting in renewable energy
     Faith Groff
11:55 - 12:00 PM  Lightning Talk #2 - Modeling wind flows across scales
     Caroline Draxl
12:00 - 12:05 PM  Lightning Talk #3 - Meteorology in the Expanding Market of Renewable Energy
     Christi Eastham
12:05 - 12:25 PM  Q&A

Artificial Intelligence/Machine Learning

Session Chair: Keenan Eure, Pennsylvania State University, State College, PA

As computers get more advanced, so does our ability to use them for our needs. We will dive into some of the artificial intelligence and machine learning techniques used today to solve tomorrow’s problems related to the weather and climate enterprise with a general overview and three ‘lightning talks’, complete with ample time for a discussion-based Q&A.

11:40 - 11:50 AM  Overview of topic - Machine Learning for Climate Extremes
     Maria Molina
11:50 - 11:55 AM  Lightning Talk #1 - Explainable AI for Climate Science: why opening the
black box feels like your birthday!

Libby Barnes

11:55 - 12:00 PM Lightning Talk #2 - Machine learning for climate: hybrid models and emulation
Andre Perkins

12:00 - 12:05 PM Lightning Talk #3 - My Experiences with AI/ML for Earth and Environmental Sciences in Academia and Industry
Grey Nearing

12:05 - 12:25 PM Q&A

Weather and Engineering Room 601 & Zoom
Session Chair: Angelie Nieves Jiménez

In this session we will dive into the intersection between Weather and Engineering. The engineers in this session will give you an overview of this topic and what they encounter in their daily work with a general overview and three ‘lightning talks’ with a Q&A at the end.

11:40 - 11:50 AM Overview of topic - The engineering-meteorology connection, and the future of tornado resilient communities
Christine Alfano

11:50 - 11:55 AM Lightning Talk #1 - The Path to a Career as an Engineer and Meteorologist
Zach Wienhoff- virtual speaker

11:55 - 12:00 PM Lightning Talk #2 - AI for Long-Lead Forecasting
Ana Barros- virtual speaker

12:00 - 12:05 PM Lightning Talk #3 - Extreme Rainfall Studies for Critical Infrastructure
John England

12:05 - 12:25 PM Q&A

12:30–2:00 PM LUNCH + NETWORKING Mile High Ballroom 1

1:30–1:50 PM INTRODUCTION TO CONVERSATIONS WITH PROFESSIONALS Mile High Ballroom 1
Session Chairs (in-person): Melissa Piper (University at Albany), Karen Papazian (University of Miami, Rosenstiel School of Marine, Atmosphere and Earth Sciences)

1:30–1:50 PM INTRODUCTION TO CONVERSATIONS WITH PROFESSIONALS (Virtual) Zoom
Session Chair (online): Elena Fernandez (University at Albany)

2:00–3:45 PM SESSION 4A: Conversations with Professionals (In-person)
Session Chairs (in-person): Melissa Piper (University at Albany), Karen Papazian (University of Miami, Rosenstiel School of Marine, Atmosphere and Earth Sciences)
**Ever had a burning question to ask professionals within the atmospheric sciences?** Here, we have a wide variety of professionals from diverse parts of the atmospheric science field ready to answer your questions! This session will give you the opportunity to ask our speakers about their education, career path, and more in a small-group conversation setting. Choose one room for each rotation and get to know professionals in sectors of our field that interest you!

Christine Alfano  
Room 501  
Luke Madaus  
Room 501  
Bernadette Woods-Placky  
Room 605  
Stella Kafka  
Room 605  
Tevin Wooten  
Room 610/612  
Kathy Sabine  
Room 610/612  
Jennifer Hastings  
Room 601  
Kelly Nunez-Ocasio  
Room 601  
Matt Lanza  
Room 603  
Eric Pytlak  
Room 603  
Ayesha Davis  
Zoom 1  
Gretchen Mullendore  
Zoom 2  
Heather Holbach  
Zoom 2/3/4  
Alicia Bentley  
Zoom 1  
Zach Wienhoff  
Zoom 2  
Kaylee Nix  
Zoom 3  
Philppe Papin  
Zoom 4  
Wendi Flynn  
Zoom 5

**2:00–3:45 PM**  
**Session 4B: Conversations with Professionals (Virtual)**

*Session Chairs (online): Elena Fernandez, University at Albany, Albany, NY*

*Ever had a burning question to ask professionals within the atmospheric sciences? Here, we have a wide variety of professionals from diverse parts of the atmospheric science field ready to answer your questions! This session will give you the opportunity to ask our speakers about their education, career path, and more in a small-group conversation setting. Choose one room for each rotation and get to know professionals in sectors of our field that interest you!*
Field work plays a vital role in atmospheric science, facilitating data collection that can result in new observations, ground-breaking discoveries, and new innovation throughout the entire field. Hear from leading researchers about recent and ongoing field campaigns and get a look at some of the new data they've gathered as well as what it takes to organize these projects.

4:10 - 4:20 PM  Karen’s X-cellent Adventure  Karen Kosiba
4:20 - 4:30 PM  Field Work Adventures in Academia: Graduate School and Beyond  Wendi Flynn
4:30 - 4:40 PM  Building your field campaign toolkit: lessons and insights from the field  Steve Nesbitt
4:40 - 4:50 PM  Navigating back-to-back field campaigns PRECIP and NASA CPEX-CV: the research, the challenges, and the connections that have contributed to my next career step  Kelly Núñe Ocasio
4:50 - 5:00 PM  Q&A

5:00–5:30 PM  BREAK

5:30–7:30 PM  CAREER RESOURCE & GRADUATE SCHOOL FAIR  Hall A

Sunday, January 8, 2023:

8:00–9:00 AM  COFFEE + NETWORKING

9:00–10:00 AM  SESSION 6: Datapalooza  Mile High Ballroom 2/3/4 & Zoom
Session Chair: Matthew Hamel, Texas Tech University, Lubbock, Tx

Inspired by the up-and-coming movement for open-source science initiatives, we present Datapalooza. Students in this session will learn...
effective ways to access and work with earth science data from leading scientists in the field. Additionally, students will be able to ask questions during a Q&A period with the speakers to ask specific questions.

9:00 - 9:20 AM
Building a Living Atlas: Federal Science Agencies Share to Succeed
Nicole Grams-Herzog

9:20 - 9:40 AM
NASA Open Science: supporting a more equitable, impactful, and efficient scientific future
Cynthia Hall & Yaitza Luna-Cruz

9:40 - 10:00 AM
Q&A

10:10–10:55 AM
SESSION 7A: Skills for the Field (in-person)
Session Chair (in-person): Dillon Blount, University of Wisconsin-Milwaukee, Milwaukee, WI

Professional skills are important to develop as you navigate your student career. These skills vary from research skills to academic skills. This session will be a chance for you to learn how to build and master these skills to help you get that dream job! This session will be broken into 3 rotating breakout sessions for a chance to meet different speakers.

What skills do I need to be a successful researcher in atmospheric science?

Manda Chasteen Room 406
Title TBD
Rosimar Rios-Berrios Room 407
Navigating a Winding Career Path: Skills to help you go with the flow
Matt Lanza Room 603
Communicating with computers and with people: The value of programming for sharing your science
Kim Wood Room 605

10:10–10:55 AM
SESSION 7B: Skills for the Field (virtual)
Session Chair (online): Megan Franke, Colorado State University

Professional skills are important to develop as you navigate your student career. These skills vary from research skills to academic skills. This session will be a chance for you to learn how to build and master these skills to help you get that dream job! This session will be broken into 3 rotating breakout sessions for a chance to meet different speakers.

Useful Skills for a Career in Climate Data Science
Maria Molina Zoom 1
The Skills That Urged Me Onward In My Academic Journey
Eric Maloney Zoom 2
Overlooked Skills That Can Set you Apart
Scott Landolt
We’re Not in Academia Anymore Toto: The Skills That Helped Me Transition to the Private-Sector

Ali Cole

10:10 - 10:22 AM Rotation 1
10:25 - 10:37 AM Rotation 2
10:40 - 10:52 AM Rotation 3

10:10–10:55 AM SESSION 7C: Jumping Out of Academia
Mile High Ballroom 2/3/4
Session Chair: Brandon Cohen, University of Oklahoma, Norman, OK

This session focuses on making the transition from academia into industry and the private sector, and how the skills and experiences you have picked up can be used to build a successful career. Topics will include resume crafting tips, options for private sector positions, and funding opportunities to help with the transition.

Industry Job Searches for Graduate Students
Andrew Zeidell

10:55–11:10 AM COFFEE BREAK

11:10–11:10 AM What is BRAID?
Ayesha Davis

11:23 - 11:35 AM ¡El pueblo unido jamás será vencido! The Origins of the AMS Committee for Hispanic and Latinx Advancement
Joseph Trujillo-Falcon

11:35 - 11:47 AM ¡El pueblo unido jamás será vencido! The Origins of the AMS Committee for Hispanic and Latinx Advancement
Karimar Ledesma-Maldonado

11:47 - 11:50 AM Q&A
11:55 AM–12:00 PM  Pause/Reset

12:00–12:30 PM  SESSION 9: Keynote Presentation & Closing Remarks  Mile High Ballroom 2/3/4 & Zoom  
Session Chairs:  
Holly Mallinson, University of Illinois at Urbana-Champaign, Urbana, IL  
Aaron Alexander, University of Wisconsin-Madison, Madison, WI  
Margaret Orr, Center for Climate Change Communication, George Mason Univ., Fairfax, VA

12:00 - 12:20 PM  From Tornadoes to Turbines and Back Again: Lessons from an Unconventional Career Path  
Catherine Finley (Keynote)

12:20 - 12:30 PM  Concluding Remarks  
Student Conference Co-Chairs

12:35–2:00 PM  LUNCH (on your own)

12:30-2:00 PM  Minding the Gap: A Working and Mentoring Luncheon to Understand and Address the Education Gaps Facing Atmospheric Scientists  Mile High Ballroom 4EF  
Co-sponsored with BECP- sign-up required, limited slots available  
https://www.signupgenius.com/go/10C0D48A8A62DA7F8C34-mind

2:00–3:45 PM  SESSION 10: Breakout Session: Hands-on Experiences  
Sign-up required, limited slots available  
https://www.signupgenius.com/go/10C0D48A8A62DA7F8C34-workshop

Integrated Warning Team (IWT)- Room 404  
Session Chair: Dillon Blount, University of Wisconsin-Milwaukee, Milwaukee, WI

The Integrated Warning Team workshop will consider a fire weather event in the Denver, Colorado area. Students will have the opportunity to be part of a group that represents different areas that play a role in the event's information dissemination. The roles students could participate in are: emergency management, broadcast, National Weather Service, and private companies. The workshop will walk through pre-event, event, and post-event roles.

Greg Heavener  
Bruno Rodriguez  
Tom Bedard  
Matthew Moreland  
Hannah Kinnett  
Shundra Stewart  
Matt Meister  
Seth McKinney  
Raya Maday
Earth Prediction Innovation Center (EPIC) Workshop: Building the SRW using containers and on-bare metal systems  Room 405 & Zoom  
Session Chair: Victor Araya, St. Cloud State University, St. Cloud, MN

This workshop will focus on how to build the SRW application starting with a singularity container with the source code and spack-stack installed. If time permits, there will also be a discussion of how to build the spack-stack on a bare metal system.

<table>
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<tr>
<th>Activity/Method</th>
<th>Content Description</th>
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<tbody>
<tr>
<td>Introductions</td>
<td>Introduce speakers and their backgrounds. Let students know how they can ask questions and to whom they should direct questions to. Introduce slack and how to use it.</td>
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| Log In to cloud and go over basics of using singularity | Have students SSH into AWS using the PEM file  
Brief overview of how to build a singularity container.  
Create sandbox version of container.  
Explore what is in the container. |
| Build the SRW                            | Download a new copy of the SRW  
Make minor changes to either configuration or source code.  
Build the SRW on the host system using container modules |
| Describe how to set up a script to run containerized executables on the host system | Students will modify a script and learn how to run different executables inside the container  
Run a sample forecast with a model built in container |
| Re-run Sample forecast again             | Re-run forecast with model built using container modules |
| Wrap-Up                                  | Have students fill our survey and address remaining questions. |

Michael Kavulich  
Amanda Parson  
Natalie Perlin
Jessica Wheeler

**Elevator Speech Workshop - Room 406**  
*Session Chair: Bobby Saba, University of Oklahoma, Norman, OK*

Students in this session will hear from professionals all across the field and their tips and tricks to effective communication. You will learn the good and the not so good about selling yourself in those quick conversations with potential mentors, employers, or internship directors. Students will have the chance to give it a go themselves and get real-time critique from our panel. At the end of this session, there will be nothing to worry about when it comes to those awkward elevator conversations!

Charlie Woodrum  
Matt Janiga  
Gretchen Mullendore  
Bernadette Woods-Placky  
Rob Reale

**Getting Reel - Room 407**  
*Session Chair: Jennifer Cook, Louisiana Sea Grant, Baton Rouge, LA*

In this session, participants will hear from broadcast meteorologist regarding the best techniques for creating an exceptional tape. Participants will have an opportunity to showcase their pre-recorded broadcast to the panel of professional broadcast meteorologists. The panelist will provide feedback and suggestions that will make the recordings stand out. All participants are welcome to attend and learn these unique set of skills.

Kathy Sabine  
Adam Clayton  
Rob Lydick  
Tevin Wooten  
Fernanda Ramos-Garces

**NWS Forecasting Uncertainty - Room 605**  
*Session Chair: Keenan Eure, Pennsylvania State University, State College, PA*

As much as we think we know in a forecast, we can never be 100% certain. This workshop allows students to understand how the National Weather Service communicates confidence, uncertainty, and everything in between in their forecasts. This workshop will be collaborative and interactive in nature.

Eric Allen  
Chad Gravelle  
Katie Magee  
Ryan Ellis
Python Workshop- Room 603
Session Chair: Matthew Hamel, Texas Tech University, Lubbock, Tx

Are you looking to make the transition to Python but unsure of where to start? Do you already know Python but want to see atmospheric science specific applications? Are you looking for data? If so, then please join us for a hands-on Python Users’ Workshop where beginners and experts alike will learn skills that will enhance your ability to find, analyze, and explore data, all while doing so in the cloud. Specialized local software installations are not necessary. All you need is a laptop or tablet (a keyboard may be helpful) and a GitHub login to participate.

Drew Camron
Shay Carter
Julien Chastang
Nicole Carbin
Hassanpreet Kaur Dhaliwal
Bobby Espinoza
Rhoen Fiutak
Hailey A Johnson
Thomas Martin
Tiffany Meyer
Kevin Tyle

Resume/CV Review Room 601
Session Chairs:
Holly Mallinson, University of Illinois at Urbana-Champaign, Urbana, IL
Aaron Alexander, University of Wisconsin-Madison, Madison, WI
Margaret Orr, Center for Climate Change Communication, George Mason Univ., Fairfax, VA

Have your resume or CV reviewed by professionals and get feedback to help you land your dream job.

Andrew Zeidell
Jake Carstens
Eric Pytlak

Speed Networking Room 610/612
Session Chairs:
Holly Mallinson, University of Illinois at Urbana-Champaign, Urbana, IL
Aaron Alexander, University of Wisconsin-Madison, Madison, WI
Margaret Orr, Center for Climate Change Communication, George Mason Univ., Fairfax, VA

Get the chance to meet-up and talk with other attendees and professionals in this networking event!
Speed Networking (virtual)  
Session Chair: Laura Shedd, University of Oklahoma, Norman, OK  

Get the chance to meet-up and talk with other attendees and professionals in this networking event!

4:00–6:30 PM  
Presidential Forum & Awards Ceremony  
Mile High Ballroom 2/3 & Zoom

6:30–8:30 PM  
Poster Session  
Hall A & Zoom  
Session Chair: Holly Mallinson, University of Illinois at Urbana-Champaign, Urbana, IL