

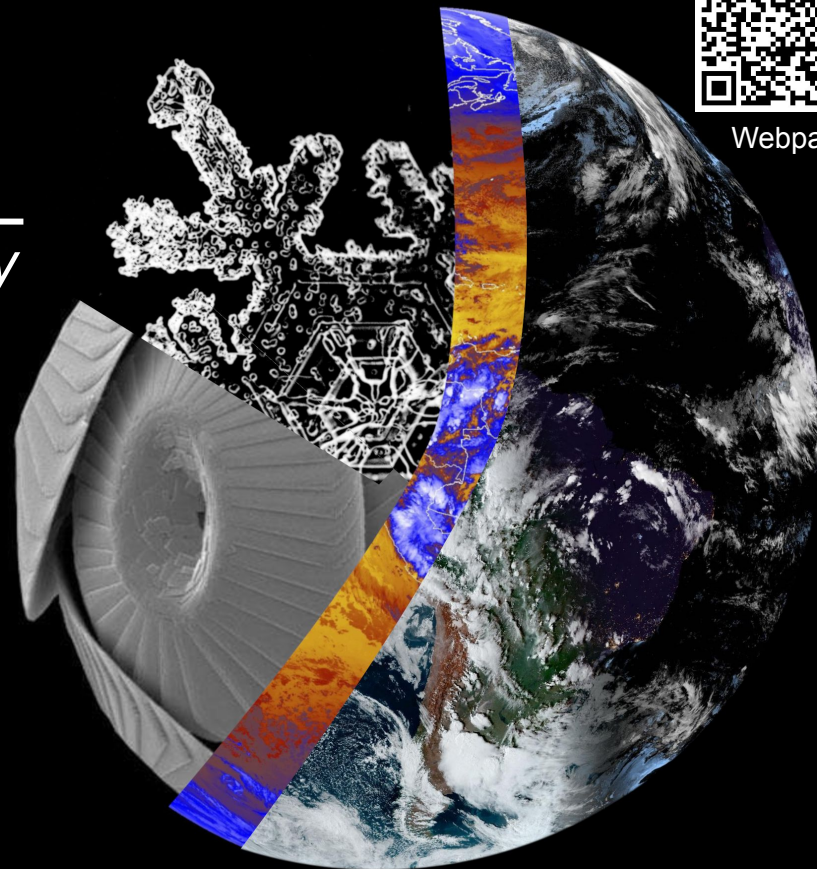
Micro2Macro

Origins of Climate Change Uncertainty

Welcome and Introduction

Monday, October 28

Wifi: UWyo Guest (no password)



Webpage

Image credit: Jeremy Young and Gabor Vali

Scientific Organizing Committee

Daniel McCoy, University of Wyoming (Co-chair)

Rob Wood, University of Washington (Co-chair)

Susannah Burrows, DOE PNNL

Ann Fridlind, NASA GISS

Adel Igel, University of California, Davis

Coty Jen, Carnegie Mellon University

Leighton Regayre, University of Leeds / UK Met Office

Masa Saito, University of Wyoming

Duncan Watson-Parris, University of California, San Diego

Program Organizing Committee

Alyssa Cannistraci, US CLIVAR

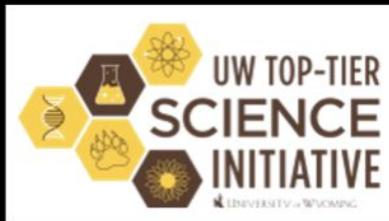
Mike Patterson, US CLIVAR

Jessica Martinez, UCAR CPAESS

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Workshop Motivation and Scope

- Microphysical precipitation, cloud, and aerosol processes are a leading source of uncertainty in climate projections
- Clouds, precipitation, convection, and aerosols are dependent on microscale processes responding to large-scale environmental change
- Next-generation, km-resolution global models will remain challenged to represent microphysical processes through parameterizations

Workshop Objectives

- Key deliverable: We are **tasked** with developing a report to sponsoring agencies representing community recommendations. This will be written by the organizing committee based on this workshop.
- Broad goal: Develop a new framework to confront and evaluate climate models using observations to improve our process-based understanding and strategically reduce climate projection uncertainty
- Five driving questions:
 - Session 1: What's wrong with microphysics in climate models?
 - Session 2: Can we even observe microphysics?
 - Session 3: How are observations being used to improve models?
 - Session 4: How can we plan future process observations to reduce climate change uncertainty?
 - Session 5: What do we do next?

Preview to Breakout Sessions

- Breakout sessions will be hybrid, allowing both in-person and online participants to discuss together
- Each room will focus on a different topic
- Online participants will use the “Breakout Group” feature on Webex to join the in-person breakouts
- Each breakout group will have one representative summarize their discussion during the ‘Recap’ session tomorrow and Wednesday at 8:00 AM

Preview to Breakout Sessions

Monday Breakout Topics

Plenary room: Warm Cloud Processes
(Group 1)

Salon A: Warm Cloud Processes
(Group 2)

Salon D/E: Met & Enviro Properties
Critical to Microphysics

Legacy Hall: Aerosol Chemical &
Physical Properties

Boyd: Cold Cloud Processes

Tuesday Breakout Topics

Plenary room: Designing Future Field
Campaigns to Address Knowledge Gaps

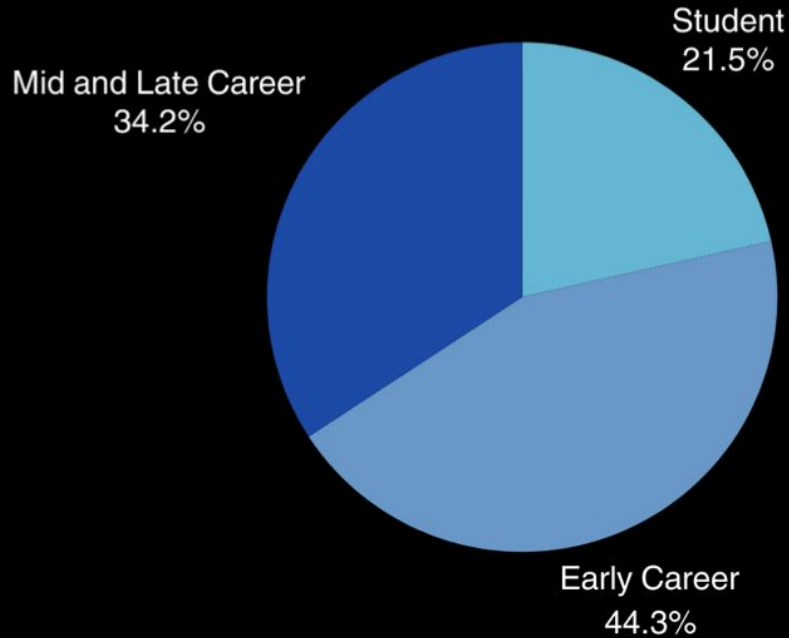
Salon A: Evaluating Observational
Uncertainty and its Impact on Climate
Models

Salon D/E: Frameworks for Model
Evaluation

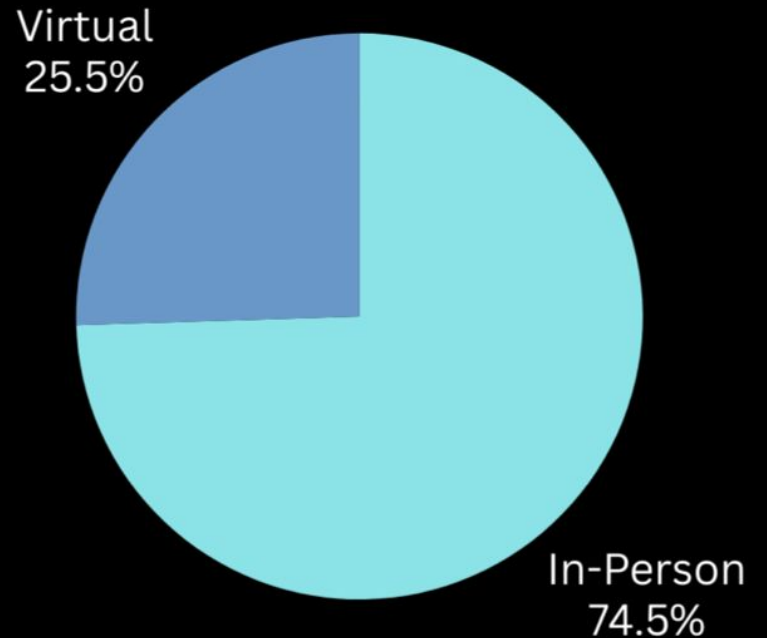
Legacy Hall: Using ML and AI for
Process-Level Constraints

Boyd: Integrating Satellite and
Remote Sensing Data into Models

Workshop Participation by Career Stage



Workshop Participation by Attendance



Workshop Philosophy

- **We want everyone's voice to be heard to capture the broad range of perspectives**- diverse researchers; virtual and in-person participants; spectrum of career stages.
- **Encourage participation by everyone in the breakout sessions**- especially students and early-career scientists.
- **Posters are key to workshop goals** - especially the report and discussions.

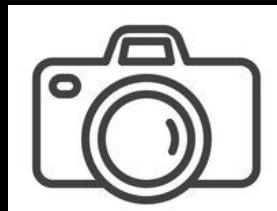
Important Notes for Hybrid Format

- In-person participants: **Please speak into a microphone** so that those participating online can hear you. Please give your name before sharing your comments or questions
- Virtual participants: Please use the raise your hand feature for asking questions. When called on, unmute and turn on your camera to share your comments or questions
- Posters (in-person and virtual) can be viewed in the online poster gallery link on the workshop webpage

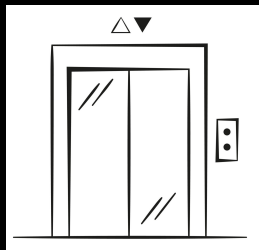
General Information



WIFI: UWyo Guest
(no password)



Group photo!
10:30 AM Monday
(before first break)



Elevator access for all floors

Restrooms are located in the
back corner of the atrium



Breakfast will be provided
all 3 days

Lunch will be provided
Monday and Tuesday



@USCLIVAR

@wyomingatmospheres

@UWyonews

#Micro2MacroWorkshop

Helpful folks:

- Jessica Martinez: Building, meals, and hotel
- Alyssa Cannistraci: Presentations, posters, and breakouts

Networking Event

Tonight from 5:15 to 8:00 PM!

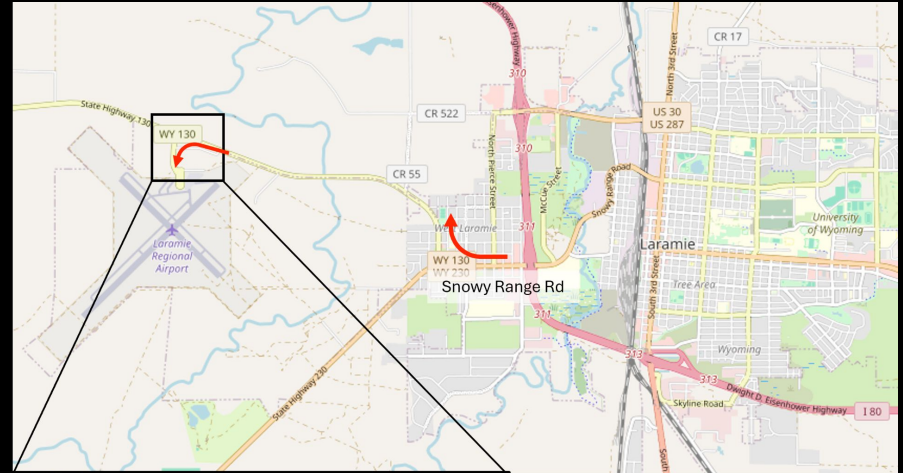
Buses will leave directly after the last breakout session today.

Reception will be held at UW Flight Center (map at right if you drive yourself).

Food and drinks provided.

Tours of new NSF Wyoming King Air for first hour.

Buses will return in waves. Jessica is coordinating returns.



Supercomputer Tour

Tour Wednesday after end of conference.

Bus supported by UW School of Computing.

Bus will depart 1:30 from conference center. Bus will drop back by the hotel at 5:30.

Sign up deadline: Today at 1:30 PM (after lunch). If you are interested, and have not signed up, see Alyssa. You must sign up so security desk can process you.



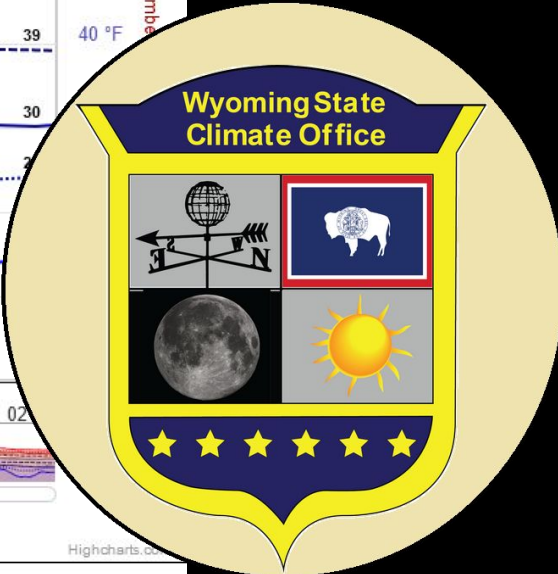
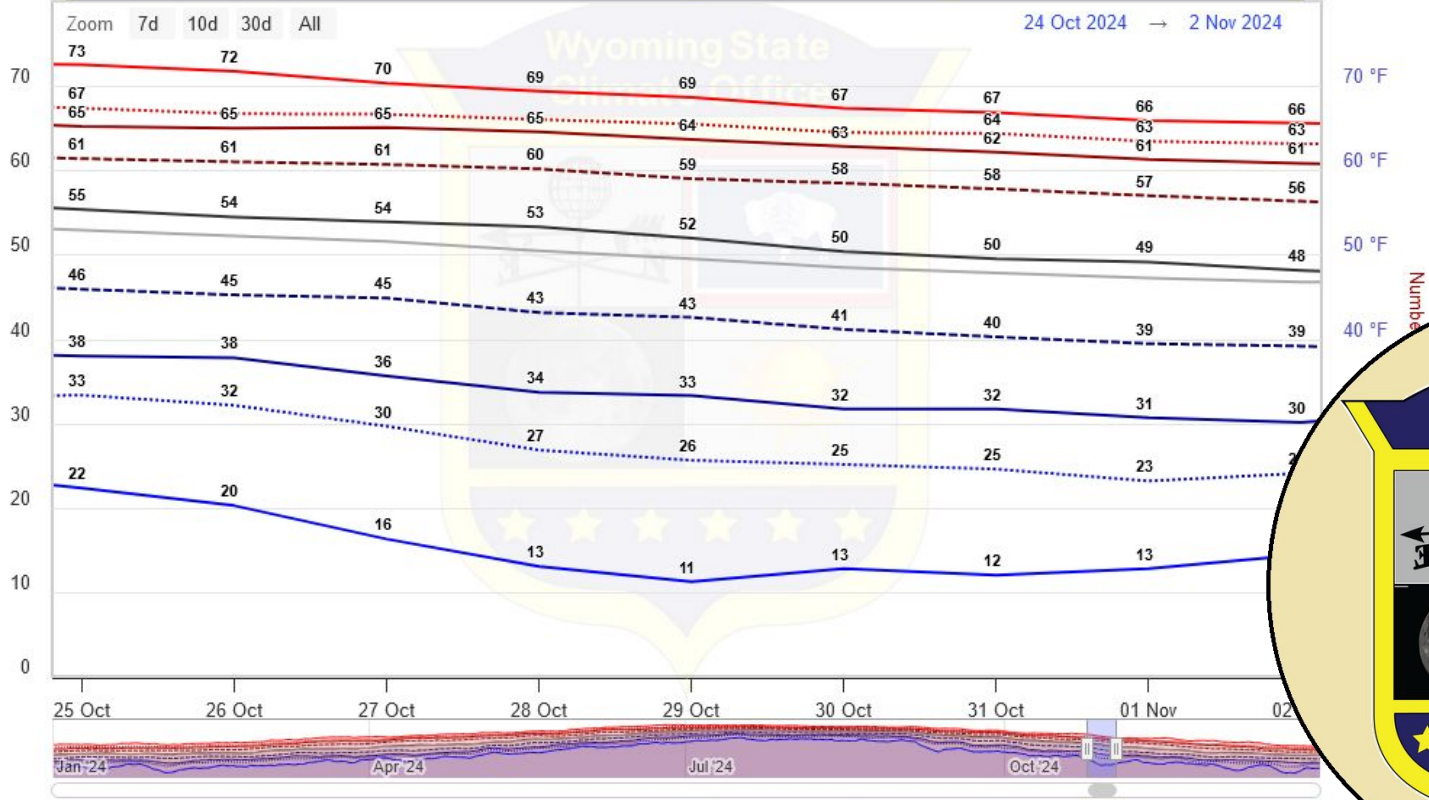
School of Computing

7-Day Daily Maximum Temperature Percentiles at PRISM Grid Cell Centered at (41.3333, -105.5833)

Hover over Legend Name to Highlight. Click Legend Name to Hide/Show



- 5th Percentile
- 10th Percentile
- 25th Percentile
- Median
- Average
- 75th Percentile
- 90th Percentile
- 95th Percentile
- Record Average
- Record Maximum



Produced by the Wyoming Water Resources Data System and State Climate Office www.wrds.uwyo.edu
 PRISM Climate Group, Oregon State University, <https://prism.oregonstate.edu>, accessed 18 Jun 2024

Highcharts.com

- Data Labels
- 5th Ptile
- 10th Ptile
- 25th Ptile
- 50th Ptile
- 75th Ptile
- 90th Ptile
- 95th Ptile
- Mean
- Minimum
- Maximum

Cold weather later

Cold weather expected Tuesday.

If you didn't pack appropriately we have a lot of great outdoor gear places downtown.

Atmosphere Mountainworks has a coupon for 15%: VISIT24 that I was told that you could use in store as well as online.

