

Welcome

AQUARIUS

**(Air QUALity Research In the western US)
Workshop**

GOAL: Plan a future aircraft campaign in the winter of 2021/2022 to investigate wintertime PM in mountain basins of the western U.S.

<https://atmos.utah.edu/aquarius/>

Thank you to our sponsors!

This workshop is jointly funded by the NSF Atmospheric Chemistry Program and the NOAA Atmospheric Chemistry, Climate and Carbon Cycle Program.



The AQUARIUS Organizing Committee

Gannet Hallar

Logan Mitchell

John Lin

Erik Crosman

Steve Brown

Chris Cappa

Jen Murphy

Kelley Barsanti



We thank you all for attending this workshop.

Thank you to our local organizers

Chris Rapp – Website

Holly Moreno - Logistics

Ben Fasoli – Camera

Ryan Barnes – Lab Tour

Maria Garcia - Logistics

John Horel – Support from Department

And many others ...

Structure of Workshop

- THEMES
 - Gas Phase Emissions and Chemistry
 - Particulate Matter Chemistry and Composition
 - Meteorology and Chemistry Coupling
 - Co-emitted Greenhouse Gases
- Invited Talks
 - State of the Science
 - Learning from other regions
- Breakout Session
- Dinner with Poster Session tonight
- Optional Lab Tours and Field Trip



Glen Warchol

Breakout Session

- Small Group Format
- Leaders to facilitate discussion
- Six assigned groups each day
- Have assigned space for each breakout group
- Each session has a member of steering committee acting as rapporteur
- Discussion centered around a specific science question for each group
 - Breakout session leaders and rapporteurs have all science questions available to share
- "Cap and Trade" System
 - You may trade groups with another attendee by exchanging stickers.



Day 1

- Group 1: Greenhouse Gases - Teresa Campos, John Lin 
- Group 2: Met –Chem Coupling – John Horel, Erik Crosman 
- Group 3: Met –Chem Coupling – Jochen Stutz, Sebastian Hoch 
- Group 4: PM Composition – Kevin Perry, Jen Murphy 
- Group 5: PM Formation (chemistry)– Ben Murphy, Steve Brown 
- Group 6: PM Formation (emissions) – Charles Stainer, Gannet Hallar 

Day 2

- Group 7: Greenhouse Gases – Shane Murphy, John Lin 
- Group 8: Met-Chem Coupling – Sebastian Hoch, Steve Brown 
- Group 9: PM Composition – Roya Bahreini, Gannet Hallar 
- Group 10: PM Composition – Carrie Womack, Chris Cappa 
- Group 11: PM Formation (chemistry) – Kerri Pratt, Logan Mitchell 
- Group 12: PM Formation (emissions) - Jaron Hansen, Kelley Barsanti 

Next Steps

- Take the results of this workshop and synthesizing into a white paper.
- Clearly articulate the scientific objectives of AQUARIUS.
- Clearly articulate the measurements and requirements.
- Plan publish this white paper in BAMS.



SESSION 1: WORKSHOP GOALS

8:30	Chris Cappa	University of California, Davis
9:00	Steve Brown	NOAA
9:10	Gannet Hallar	University of Utah
9:20	Kelley Barsanti	University of California, Riverside
9:30	Monika Kopacz	NOAA
9:50	Discussion	
10:00	<i>Coffee Break – Field Trip Registration (15 min)</i>	

SESSION 2: GAS PHASE EMISSIONS AND CHEMISTRY

10:15	Joel Thorton (<i>remote presentation</i>)	University of Washington
10:30	Jennifer Murphy	University of Toronto
10:45	Joost de Gouw	University of Colorado, Boulder
11:00	Brian McDonald	NOAA/CIRES
11:15	Becky Alexander	University of Washington
11:30	Keding Lu	Peking University
11:45	Discussion for Session 2	
12:00	<i>Lunch (1 Hour)</i>	

Extra Slides

SESSION 3: COEMITTED GHG'S

1:00	Ronald Cohen	UC Berkeley
1:15	John Lin	University of Utah
1:30	Francesca Hopkins	University of California, Riverside
1:45	Scott Herndon	Aerodyne Inc.
2:00	Discussion	
2:15	<i>Coffee Break (15 min)</i>	

BREAKOUT SESSIONS

2:30	<i>Breakouts (2.5 Hours)</i>
5:00	Reports from Breakouts
5:30	Adjourn

POSTER SESSION

5:45	Poster session & hor d'oeuvres
7:00	<i>Dinner</i>

Day 2 - September 26, 2019

8:00 *Coffee (30 min)*

SESSION 4: METEOROLOGY-CHEMISTRY COUPLING

8:30	John Horel	University of Utah
8:45	Heather Holmes	University of Nevada, Reno
9:00	Ian Faloon	University of California, Davis
9:15	Vanda Grubišić	NCAR Earth Observing Laboratory
9:30	Discussion	
9:45	<i>Coffee (15 min)</i>	

SESSION 5: PM CHEMISTRY AND COMPOSITION

10:00	James Kelly	US EPA
10:15	Rodney Weber	Georgia Tech
10:30	Carrie Womack	NOAA
10:45	Delphine Farmer	Colorado State University
11:00	Mike Kleeman	University of California, Davis
11:15	Discussion	
11:30	<i>Lunch and Breakouts (3 hours)</i>	

SESSION 6: INSIGHTS FROM OTHER REGIONS

2:30	Russ Dickerson	University of Maryland
2:45	Hendrik Fuchs	Forschungszentrum Juelich
3:00	Bill Simpson	University of Alaska, Fairbanks
3:15	Tao Wang	Hong Kong Polytechnic University
3:30	Stephan De Wekker	University of Virginia
3:45	Pablo Saide	UCLA
4:00	<i>Coffee (15 min)</i>	

BREAKOUTS AND DISCUSSION

4:15	<i>Breakout Reports</i>	
4:45	General discussion of future directions & white paper development	
6:00	Adjourn	
6:00	<i>Optional Lab Tours with Pizza</i>	