

2019 ARM/ASR Joint User Facility and Principal Investigator Meeting

June 10-14, 2019

Bethesda North Marriott

AGENDA

Note that due to smaller poster space this year, posters cannot stay up the entire meeting. *Posters for sessions A1 & A2 may be displayed in Salon AB starting 3:30 pm Monday, but must be removed by 8:00 am Wednesday. Posters for sessions B1 & B2 may be displayed in Salon AB starting at 10:00 am Wednesday.*

Monday, June 10**9:00 am – 11:30 am Meetings & Tutorials**

- ARM Infrastructure Management Board (IMB) [invitation only] [Glen Echo]
 - *Sally McFarlane, Rick Petty*
- ASR Science Focus Area (SFA) and boutique lab project meeting [invitation only] [Forest Glen]
 - *Shaima Nasiri*
- Tutorial: Using ARM compute resources to do CESD science at scale [Brookside]
 - *Jitu Kumar, Scott Collis*
 - Registration required: Fill out [Google form](#) if attending

11:30 am – 1:00 pm Working lunch

- New ASR Principal Investigator (PI) lunch meeting [sign-up required] [Salon C]

----- **Formal Start of 2019 ARM/ASR Joint User Facility/PI Meeting** -----**1:30 pm – 3:30 pm Breakout Session 1**

- Advancing the Use of ARM Observations for Large-Scale Earth System Model Development [Brookside]
 - *Katia Lamer, Daniel Feldman, Jiwen Fan, Shaocheng Xie*
- Clouds, Aerosols, and Complex Terrain Interactions (CACTI) [Salon C]
 - *Adam Varble, Joe Hardin*
- Lidar applications [Forest Glen]
 - *Rob Newsom, Larry Berg, Dave Turner*
- Secondary Organic Aerosol [White Flint]
 - *John Shilling, Manish Shrivastava, Joel Thornton, Rahul Zaveri, Alla Zelenyuk*

3:30 pm – 4:00 pm Break**4:00 pm – 6:00 pm Breakout Session 2**

- ARM Aerosol Measurements Supporting ASR Science [White Flint]
 - *Jim Smith, Jim Mather, Nicole Riemer, Allison McComiskey*
- Process driven sampling strategies for ARM instruments [Brookside]

- *Scott Collis, Marcus van Lier-Walqui, Brenda Dolan, Andrei Lindenmaier*
- Interactions among the land surface, convective boundary layer, clouds and aerosols [Salon C]
 - *Yunyan Zhang, Larry Berg*
- Applications of machine and/or deep learning to ARM/ASR science [Glen Echo]
 - *Joe Hardin, Rao Kotamarthi, Jennifer Comstock, Shaocheng Xie, Ed Luke*

Tuesday, June 11

7:00 am Continental breakfast available for registered attendees

8:00 am – 10:10 am **Plenary Session - Programmatic Updates [Salon D]**

8:00 – 8:10 Welcome and introductory remarks

Gary Geernaert, Director, Climate and Environmental Sciences Division

8:10 – 8:40 ASR programmatic updates

Shaima Nasiri, ASR Program Manager

8:40 – 9:00 ARM programmatic updates

Sally McFarlane and Rickey Petty, ARM Program Managers

9:00 – 9:20 ARM Technical Director Updates

Jim Mather, ARM Technical Director

9:20 – 9:30 ARM Awards Presentation

9:30 – 10:10 ASR Working Group updates

9:30 – 9:40 Aerosol Processes Working Group

Nicole Riemer & Jim Smith

9:40 – 9:50 Convective Processes Working Group

Adam Varble & Mike Jensen

9:50 – 10:00 High-latitude Processes Working Group

Gijs de Boer & Greg McFarquhar

10:00 – 10:10 Warm Boundary Layer Processes Working Group

Rob Wood & Yunyan Zhang

10:10 am – 10:30 am **Break**

10:30 am – 12:30 pm **Plenary Session – Research Highlight & Poster Talks [Salon D]**

10:30 – 10:45 Spatial and Temporal Variability of Ice Nucleating Particles over the Southern Ocean

Paul DeMott, Colorado State University

10:45 – 11:00 Laboratory Measurements of Aerosol Scavenging in a Cloudy, Turbulent Environment

Will Cantrell, Michigan Technological University

11:00 – 11:15 Buoyancy sorting versus two-point mixing: investigating mixing in shallow cumuli using RACORO observations, LES, and Lagrangian particle tracking

Xin Wei, Harvard University

11:15 – 11:30 Evaluation and improvement of the parameterization of aerosol hygroscopicity in global climate models using in-situ surface measurements

Paul Zieger, Stockholm University

11:30 – 11:45 Aerosol size distributions and cloud condensation nuclei spectra and their temporal variability in the Southern Great Plains

Peter Marinescu, Colorado State University

11:45 – 12:00 Investigation of precipitation processes with RAMS and observations

Brenda Dolan, Colorado State University

12:00 – 12:15 Updraft and Downdraft Core Kinematics of Mesoscale Convective Systems through Observations and Idealized Simulations

Die Wang, Brookhaven National Laboratory

12:15 – 12:30 Taranis: Advanced Precipitation and Cloud Products for ARM Radars

Joe Hardin, Pacific Northwest National Laboratory

12:30 pm – 1:30 pm **Working Lunch & Tutorials**

- ARM User Executive Committee (UEC) Networking Lunch [Salon C]
 - *Sebastien Biraud; Allison Aiken*

1:30 pm – 3:30 pm **Breakout Session 3**

- LASSO Update and Discussion: Expansion Beyond Shallow Convection [White Flint]
 - *Bill Gustafson, Andrew Vogelmann, James Mather*
- Update on ARM Shortwave Spectral Radiometer Strategy [Forest Glen]
 - *Laura Riihimaki, Allison McComiskey, Connor Flynn*
- Aerosol and Cloud Experiments in the Eastern North Atlantic (ACE-ENA) [Salon C]
 - *Jian Wang, Jason Tomlinson, Beat Schmid*
- Ice nucleation [Brookside]
 - *Xiaohong Liu, Paul DeMott, Daniel Knopf, Nicole Riemer*

3:30 pm

Coffee break available

3:30 pm – 5:00 pm **Poster Session A1 [Salon AB]**

- Convective clouds, including aerosol interactions
- General topics
- General topics – aerosol
- General topics - clouds

5:00 pm – 6:30 pm **Poster Session A2 [Salon AB]**

- Absorbing aerosol
- ARM infrastructure
- Microphysics (cloud, aerosol and/or precipitation)

Wednesday, June 12

7:00 am Continental breakfast available for registered attendees

8:00 am – 10:00 am **Plenary Session – Research Highlight & Poster Talks [Salon D]**

8:00 – 8:15 Wintertime Atmospheric Aerosol Chemical Composition, Sources, and Mixing States on the North Slope of Alaska

Kerri Pratt, University of Michigan

8:15 – 8:30 Characteristics of snow regimes at North Slope Alaska as derived from the NSA snowfall product

Norman Wood, University of Wisconsin

8:30 – 8:45 ARM Data Epochs

Jennifer Comstock, Pacific Northwest National Laboratory

8:45 – 9:00 Toward combining observations and model experiments to improve soil moisture-precipitation feedbacks in Earth system models

Ian Williams, Lawrence Berkeley National Laboratory

9:00 – 9:15 Characterizing the Impact of Entrainment Rate in Stratocumulus from ARM Observations and Large-Eddy Simulations

Dave Mechem, University of Kansas

9:15 – 9:30 Meteorology both masks and magnifies the aerosol-cloud radiative effect

Ian Glenn, University of Colorado/NOAA

9:30 – 9:45 Characterization of aerosol above-cloud incidence and optical properties over the southeastern Atlantic

Yan Feng, Argonne National Laboratory

9:45 – 10:00 Application of the Dual Tandem DMA Method to Study the Amorphous Phase Transition of Organic Aerosols

Markus Petters, North Carolina State University

10:00 am – 10:30 am **Break**

10:30 am – 12:30 pm **Breakout Session 4**

- ARM West Antarctic Radiation Experiment (AWARE) [Forest Glen]
 - *Dan Lubin, Andrew Vogelmann, Johannes Verlinde*
- TRacking Aerosol Convection interactions ExpeRiment (TRACER) [White Flint]
 - *Mike Jensen, Nitin Bharadwaj*
- Marine cloud-topped boundary layer processes: cloud, aerosol, drizzle and turbulence [Salon C]
 - *Xue Zheng, Robert Wood*
- Brown carbon and aerosol light absorption uncertainty: bridging the observation-to-modeling gap [Brookside]
 - *Yan Feng, Art Sedlacek*

12:30 pm – 1:30 pm **Working Lunch & Tutorials**

- Social media for communicating research [Salon C]
 - *Hanna Goss*
- Data Discovery and Access: Current, New and Upcoming Capabilities [Glen Echo]
 - *Giri Prakash*

1:30 pm – 3:30 pm **Breakout Session 5**

- Evaluation of Measurement Needs to Address Cloud and Precipitation Science Issues [Salon C]
 - *Jim Mather*
- Upcoming Arctic campaigns (MOSAIC, COMBLE) [White Flint]
 - *Bart Geerts, Matt Shupe, Mikhail Ovchinnikov*
- PCM Data Consolidator Wizard Demo [Forest Glen]
 - *Krista Gaustad*
- Shortwave-absorbing aerosols and their interactions with clouds [Brookside]
 - *Paquita Zuidema, Art Sedlacek, Allison Aiken*

3:30 pm **Coffee break available**

3:30 pm – 5:00 pm **Poster Session B1 [Salon AB]**

- ARM next generation – megasite and LES activities
- Results from recent ARM field campaigns
- Boundary layer structure, including land-atmosphere interactions and turbulence
- Secondary organic aerosol

5:00 pm – 6:30 pm **Poster Session B2 [Salon AB]**

- High-latitude clouds and aerosols
- Radiation
- Warm low clouds, including aerosol interactions

Thursday, June 13

7:00 am Continental breakfast available for registered attendees

8:00 am – 10:05 am **Plenary Session – Invited Talks [Salon D]**

8:00 – 8:25 ACE-ENA

Jian Wang, Washington University in St. Louis

8:25 – 8:50 MARCUS/MICRE

Roger Marchand, University of Washington

8:50 – 9:15 CACTI

Adam Varble, Pacific Northwest National Laboratory

9:15 – 9:40 Arctic research in the Year(s) of Polar Prediction

Matthew Shupe, University of Colorado/NOAA

9:40 – 10:05 E3SM Next Generation Development of Atmospheric Physics

Shaocheng Xie, Lawrence Livermore National Laboratory

10:05 am – 10:30 am **Break**

10:30 am – 12:30 pm **Breakout Session 6**

- MICRE/MARCUS and Southern Ocean Activities [Brookside]
 - *Roger Marchand*
- How ARM Meets the Needs of ASR Science Goals (Panel Discussion) [Salon C]
 - *Shaocheng Xie, Jennifer Comstock, Jim Mather*
- Open Science For Advancing Knowledge Transfer Across CESD [Forest Glen]
 - *Scott Collis, Giri Prakash, Mariko Oue, William Gustafson, Joseph Hardin*
- Phase State of Organic Aerosol and Its Impact on Gas-Particle Interactions and Cloud Formation [White Flint]
 - *Manabu Shiraiwa and Daniel Knopf*

12:30 pm – 1:30 pm **Working Lunch**

1:30 pm – 4:00 pm **Working group meetings**

- Aerosol processes [White Flint]
 - *Nicole Riemer, Jim Smith*
- Convective processes [Brookside]
 - *Adam Varble, Mike Jensen*
- High-latitude processes [Forest Glen]
 - *Gijs de Boer, Greg McFarquhar*
- Warm boundary layer processes [Salon C]
 - *Rob Wood, Yunyan Zhang*

Friday, June 14

8:30 am – 12:30 pm **ARM ASR Coordination Team (AACT) [Invitation only] [Brookside]**