

# 2023 FARE Users' Workshop

## Event Schedule

Mon, Sep 18, 2023

7:30 AM

### Registration

🕒 7:30 AM - 8:30 AM, Sep 18

📍 Center Green Lobby

[FARE Proc...](#)

8:30 AM

### FARE Process - Opening Session

🕒 8:30 AM - 9:00 AM, Sep 18

📍 Center Green Auditorium

[FARE Proc...](#)

#### 🗨️ Speakers



#### Scott McIntosh

Deputy Director  
NCAR



#### Allison McComiskey

NCAR Associate Director / EOL Director  
NCAR EOL



#### Brigitte Baeuerle

Assist. Director for Operations  
NCAR EOL



#### Dr. Bart Geerts

Professor  
University of Wyoming

#### 2 Subsessions

#### ● Welcome & Opening Remarks

🕒 8:30 AM - 8:50 AM, Sep 18

📍 Center Green Auditorium

#### ● Workshop Overview, Objectives, and Goals

🕒 8:50 AM - 9:00 AM, Sep 18

📍 Center Green Auditorium

9:00 AM

### NSF FARE PROGRAM - Overview and Fundamentals

🕒 9:00 AM - 10:30 AM, Sep 18

📍 Center Green Auditorium

[FARE Proc...](#)

To facilitate fundamental research in the atmospheric sciences, NSF's Division of Atmospheric and Geospace Sciences (AGS) supports state-of-the-art instruments and facilities through the **Facilities for Atmospheric Research and Education (FARE)** Program. The FARE Program includes the **Lower Atmosphere Observing Facilities (LAOF)**, a portfolio of multi-user national facilities managed by NCAR and the University of Wyoming, and the **Community Instruments and Facilities (CIF)**, a selection of specialized instrumentation for field and laboratory-based studies provided by 10 US universities. In this session, representatives from NSF/AGS will provide an overview of NSF-funded FARE assets and associated support services; introduce the **Facility and Instrumentation Request Process (FIRP)** that describes the mechanism and timing by which the community can propose projects that require access to FARE facilities; outline the difference between the three proposal submission tracks (**Track 1 - Education and Outreach**; **Track 2 - Single Facility Request**; and **Track 3 - Field Campaigns**), and expand on additional NSF proposal documentation requirements.

**Virtual Participants:** Join the session by clicking on the [Live Stream link](#) below.

#### 🔊 Speakers



**Shree Mishra**  
FARE Program Director  
NSF AGS



**Nicholas Anderson**  
Program Director  
NSF AGS

#### 4 Subsessions

##### ● Introductions of NSF Representatives

🕒 9:00 AM - 9:05 AM, Sep 18  
📍 Center Green Auditorium

##### ● FARE Program: Available Observing Systems and Services

🕒 9:05 AM - 9:30 AM, Sep 18  
📍 Center Green Auditorium

##### ● FIRP Solicitation & Proposal Requirements

🕒 9:30 AM - 10:00 AM, Sep 18  
📍 Center Green Auditorium

##### ● Q&A Session

🕒 10:00 AM - 10:30 AM, Sep 18  
📍 Center Green Auditorium

10:30 AM

#### Coffee Break

🕒 10:30 AM - 10:50 AM, Sep 18  
📍 Center Green Lobby

[FARE Proc...](#)

10:50 AM

#### USER STORIES

🕒 10:50 AM - 11:50 AM, Sep 18  
📍 Center Green Auditorium

[FARE Proc...](#)

Recent users of FARE assets will share their experiences in requesting LAOF & CIF and conducting field campaigns. User stories are intended to set the stage for further in-depth discussions regarding Track 1, 2 and 3 projects throughout this part of the workshop.

## Speakers



**Lynne Gratz**  
Associate Professor  
Reed College



**Scott Steiger**  
Professor  
SUNY Oswego



**Ankur Desai**  
Professor & Department Chair  
University of Wisconsin - Madison



**Gannet Hallar**  
Professor  
University of Utah

## 4 Subsessions

### ● Track 1 - Leveraging Collaborative Research toward an Atmospheric Chemistry Field Course

🕒 10:50 AM - 11:05 AM, Sep 18

📍 Center Green Auditorium

### ● Track 2 - Chasing the white lightning during the Lake Effect Electrification (LEE) project with the Doppler on Wheels

🕒 11:05 AM - 11:20 AM, Sep 18

📍 Center Green Auditorium

### ● Track 3 - Skimming the trees: Benefits of the UW King Air for lower boundary layer characterization in CHEESEHEAD19

🕒 11:20 AM - 11:35 AM, Sep 18

📍 Center Green Auditorium

### ● Q&A Session

🕒 11:35 AM - 11:50 AM, Sep 18

📍 Center Green Auditorium

11:50 AM

## FARE INSTRUMENT CIRCUIT - Overview

🕒 11:50 AM - 12:00 PM, Sep 18

📍 Center Green Auditorium

[FARE Proc...](#)

*Virtual Participants: There will be no live streaming of the FARE Instrument Circuit.*

## Speaker



**Brigitte Baeuerle**  
Assist. Director for Operations  
NCAR EOL

12:00 PM

## Lunch

🕒 12:00 PM - 1:00 PM, Sep 18

📍 Center Green Lobby

[FARE Proc...](#)

1:00 PM

## FARE INSTRUMENT CIRCUIT

🕒 1:00 PM - 2:00 PM, Sep 18

📍 Center Green Auditorium (South); Library, Parking Lot

FARE Proc...

*Virtual Participants: There will be no live streaming of the FARE Instrument Circuit.*

*The FARE Instrument circuit facilitates in-person interactions and information exchange between LAOF and CIF facility providers, instrument experts, and workshop participants. The venue includes information displays, posters, brochures, and lots of one-on-one interactions.*

2:00 PM

### TRACK 1 - Educational Deployments

🕒 2:00 PM - 5:00 PM, Sep 18

📍 Center Green Auditorium

FARE Proc...

*This portion of the workshop will delve into the use of FARE assets to support Track 1 E&O Projects. After a short overview of how the Doppler on Wheels have been used in the past for educational activities, the afternoon will allow workshop participants to actively work on discussing and designing future Track 1 requests.*

#### 🗣️ Speaker



**Karen Kosiba**

Managing Director, FARM Facility  
University of Illinois Urbana-Champaign

#### 3 Subsessions

● **School of DOW - Over a decade of supported E&O with the Doppler on Wheels radars**

🕒 2:00 PM - 2:15 PM, Sep 18

📍 Center Green Auditorium

● **BREAKOUT SESSION - Track 1 Opportunities, Hurdles & Needs**

🕒 2:30 PM - 3:30 PM, Sep 18

📍 Center Green Conference Rooms

● **Reporting from Breakout Session**

🕒 3:45 PM - 4:45 PM, Sep 18

📍 Center Green Auditorium

5:00 PM

### FARE PROCESS RECEPTION - Sponsored by NCAR's Earth Observing Laboratory

🕒 5:00 PM - 7:00 PM, Sep 18

📍 Center Green Lobby

FARE Proc...

Please join us for drinks and heavy hors d'oeuvres in the UCAR Center Green Lobby. This reception is sponsored by NCAR's Earth Observing Laboratory.

**Tue, Sep 19, 2023**

8:30 AM

### FARE Process - Review of Day 1 with Q&A

🕒 8:30 AM - 8:45 AM, Sep 19

📍 Center Green Auditorium

FARE Proc...

### 🗣️ Speakers



**Shree Mishra**  
FARE Program Director  
NSF AGS



**Nicholas Anderson**  
Program Director  
NSF AGS

8:45 AM

## FARE SUPPORT SERVICES

🕒 8:45 AM - 9:30 AM, Sep 19

📍 Center Green Auditorium

[FARE Proc...](#)

NSF/AGS funds additional support services to assist Principal Investigator teams in the planning and conduct of field campaigns. Those services include data management, project management, operations support, forecasting and nowcasting support, and community outreach. This session will provide an overview of the available services, followed by user stories that highlight the support services that helped ensure the overall success of the campaign.

### 🗣️ Speakers



**Greg Stossmeister**  
Facility Manager  
NCAR EOL



**Cory Wolff**  
Project Manager  
NCAR EOL



**Daniel Zietlow**  
Educational Designer & Filmmaker, NCAR Education, Engagement & Early-Career Development  
NCAR

### 3 Subsessions

● **NCAR/EOL Data Services**

🕒 8:45 AM - 9:00 AM, Sep 19

📍 Center Green Auditorium

● **NCAR/EOL Project Management & Operations Support**

🕒 9:00 AM - 9:15 AM, Sep 19

📍 Center Green Auditorium

● **Education & Outreach Opportunities during Field Campaigns**

🕒 9:15 AM - 9:30 AM, Sep 19

📍 Center Green Auditorium

9:30 AM

## USER STORIES (Cont'd)

🕒 9:30 AM - 10:50 AM, Sep 19

📍 Center Green Auditorium

[FARE Proc...](#)

*Virtual Participants: Join the session by clicking on the Live Stream link below.*

## 🗣️ Speakers



**Leila Carvalho**  
Professor  
University of California Santa Barbara



**Emily Fischer**  
Professor  
Colorado State University



**Ilana Pollack**  
Research Scientist  
Colorado State University

## 3 Subsessions

### ● Seeking Opportunities with Perseverance: the Sundowner Wind Experiment (SWEX)

🕒 9:30 AM - 10:00 AM, Sep 19  
📍 Center Green Auditorium

### ● Coffee Break

🕒 10:00 AM - 10:20 AM, Sep 19  
📍 Center Green Lobby

### ● Reflections on preparing for WE-CAN and TRANS2AM: Tasks, Timing and Helpful Tips

🕒 10:20 AM - 10:50 AM, Sep 19  
📍 Center Green Auditorium

11:00 AM

## FARE INSTRUMENT CIRCUIT

🕒 11:00 AM - 12:00 PM, Sep 19  
📍 Center Green Auditorium (South); Library, Parking Lot

[FARE Proc...](#)

*Virtual Participants: There will be no live streaming of the FARE Instrument Circuit.*

*The FARE Instrument circuit facilitates in-person interactions and information exchange between LAOF and CIF facility providers, instrument experts, and workshop participants. The venue includes information displays, posters, brochures, and lots of one-on-one interactions.*

12:00 PM

## Lunch

🕒 12:00 PM - 1:00 PM, Sep 19  
📍 Center Green Lobby

[FARE Proc...](#)

1:00 PM

## TRACK 2 & 3 - Deployments

🕒 1:00 PM - 3:15 PM, Sep 19  
📍 Center Green Auditorium

[FARE Proc...](#)

*This portion of the workshop will delve into the use of FARE assets to support Track 2 and 3 field deployments. After a short introduction of the hurdles experienced by an early career scientist in getting her foot in the door, the afternoon will allow workshop participants to actively work on discussing the opportunities and challenges associated with Track 2 and 3 requests.*

*Virtual Participants: Join the session by clicking on the Live Stream link below.*

🗣️ Speaker



**Minghui Diao**  
Associate Professor  
San Jose State University

3 Subsessions

- **Challenges, needs, and opportunities to get your foot (back) in the door**  
🕒 1:00 PM - 1:15 PM, Sep 19  
📍 Center Green Auditorium
- **Breakout Session - Track 2 & 3 - Opportunities, Hurdles & Needs**  
🕒 1:30 PM - 2:30 PM, Sep 19  
📍 Center Green Conference Rooms
- **Reporting from Breakout Session - Track 2 & 3 Table Discussion**  
🕒 2:45 PM - 3:15 PM, Sep 19  
📍 Center Green Auditorium

3:15 PM

**Coffee Break**

🕒 3:15 PM - 3:30 PM, Sep 19  
📍 Center Green Lobby

[FARE Proc...](#)

3:30 PM

**Elements of a Safe and Inclusive Work Environment Plan**

🕒 3:30 PM - 4:00 PM, Sep 19  
📍 Center Green Auditorium

[FARE Proc...](#)

*Virtual Participants: Join the session by clicking on the Live Stream link below.*

🗣️ Speaker



**Carolyn Brinkworth**  
Chief Diversity, Equity & Inclusion Officer  
UCAR

4:00 PM

**FARE PROCESS - Summary and Q&A**

🕒 4:00 PM - 4:30 PM, Sep 19  
📍 Center Green Auditorium

[FARE Proc...](#)

Recap of FARE Process Conference (Monday-Tuesday); important items to be aware for the Wednesday Exhibit/Tour; and explanation of the Hands-on activity following the summary.

🗣️ Speakers



**Brigitte Baeuerle**  
Assist. Director for Operations  
NCAR EOL



**Nicholas Anderson**  
Program Director  
NSF AGS

4:30 PM

**LOOKING FOR COLLABORATORS - Use of an NSF Aircraft to Train the Next**

## Generation Observationalists

🕒 4:30 PM - 5:30 PM, Sep 19

📍 Center Green Auditorium

[FARE Proc...](#)

Brainstorming opportunity to plan an educational field campaign (Track 3) using an NSF aircraft to train the next generation of observationalists in airborne deployments and data collection. This is an opportunity for like-minded individuals to meet and get started on the planning process.

### 🗨️ Speakers



#### Frank Flocke

Senior Scientist  
NCAR ACOM



#### Brigitte Baeuerle

Assist. Director for Operations  
NCAR EOL



#### Minghui Diao

Associate Professor  
San Jose State University



#### Ruben Delgado

Associate Professor  
Hampton University

## Wed, Sep 20, 2023

8:00 AM

### NCAR Research Aviation Facility (RAF) Tour Check-In

🕒 8:00 AM - 8:30 AM, Sep 20

📍 Center Green Lobby

[FARE Asset Exhibit | Ope...](#)

Please ensure you have enough time to check in and be on the bus by 8:30 AM. **The bus for the RAF tour will leave UCAR Center Green (3090 Center Green Drive, Boulder, CO) promptly at 8:30 AM.**

For those not attending the RAF tour, the remainder of the day will be held at NCAR Foothills Laboratory FL1 (3450 Mitchell Lane, Boulder, CO).

8:30 AM

### NCAR RAF TOUR - NSF/NCAR Aircraft and Airborne Instrumentation

🕒 8:30 AM - 11:45 PM, Sep 20

[FARE Asset Exhibit | Ope...](#)

*Tour participants must be on the bus by 8:30am to be included in the RAF tour.*

#### 4 Subsessions

##### ● Bus departs Center Green for RAF

🕒 8:30 AM - 8:30 AM, Sep 20

📍 Center Green Parking Lot

##### ● Check in at RAF Front Desk

🕒 9:00 AM - 9:15 AM, Sep 20

📍 RAF Lobby

##### ● Tour of NSF Aircraft and airborne instrumentation

🕒 9:15 AM - 11:00 AM, Sep 20

📍 RAF

##### ● Bus departs RAF to Foothills Laboratory FL1

🕒 11:15 AM - 11:15 AM, Sep 20

11:45 AM

### Lunch at Foothills Laboratory FL1

🕒 11:45 AM - 12:55 PM, Sep 20

📍 FL1 Atrium

[FARE Asset Exhibit | Ope...](#)

*Lunch will be pizza and salad. There's plenty of indoor and outdoor seating available for everyone.*

1:00 PM

### NCAR FOOTHILLS LABORATORY TOUR - Data FAIR, and Ground-based Instrumentation and Laboratories

🕒 1:00 PM - 3:15 PM, Sep 20

📍 FL1 Atrium

[FARE Asset Exhibit | Ope...](#)

*After lunch, gather in the Foothills Laboratory building (FL1) Atrium area where you will be divided into groups for the tours and Data FAIR. After the Data FAIR and tour is complete, either walk or take the UCAR shuttle bus back to the Center Green Campus if you parked there in the morning.*

### DATA FAIR

🕒 1:00 PM - 3:00 PM, Sep 20

📍 FL1 Atrium

[FARE Asset Exhibit | Ope...](#)

### FL1 Tour Group 1

🕒 1:00 PM - 2:00 PM, Sep 20

📍 FL1 Atrium

[FARE Asset Exhibit | Ope...](#)

2:00 PM

### FL Tour Group 2

🕒 2:00 PM - 3:00 PM, Sep 20

📍 FL1 Atrium

[FARE Asset Exhibit | Ope...](#)

3:00 PM

### EXHIBIT and TOUR - Wrap Up

🕒 3:00 PM - 3:15 PM, Sep 20

📍 FL1 Atrium

[FARE Asset Exhibit | Ope...](#)

## Thu, Sep 21, 2023

7:30 AM

### Registration for FARE Future

🕒 7:30 AM - 8:15 AM, Sep 21

📍 Center Green Lobby

[FARE Futu...](#)

8:15 AM

### FARE Future - Opening Session

🕒 8:15 AM - 8:45 AM, Sep 21

📍 Center Green Auditorium

[FARE Futu...](#)

*Virtual Participants: Join the session by clicking on the Live Stream link below.*

## 🗣️ Speakers



**Dr. Bart Geerts**  
Professor  
University of Wyoming



**Shree Mishra**  
FARE Program Director  
NSF AGS



**Nicholas Anderson**  
Program Director  
NSF AGS



**Allison McComiskey**  
NCAR Associate Director / EOL Director  
NCAR EOL

## 2 Subsessions

### ● **Welcome & Opening Remarks**

🕒 8:15 AM - 8:30 AM, Sep 21

📍 Center Green Auditorium

### ● **FARE Future Overview, Objectives and Goals**

🕒 8:30 AM - 8:45 AM, Sep 21

📍 Center Green Auditorium

8:45 AM

## **EMERGING TECHNOLOGIES - Lightning Talks**

🕒 8:45 AM - 10:05 AM, Sep 21

📍 Center Green Auditorium

[FARE Futu...](#)

*Virtual Participants: Join the session by clicking on the Live Stream link below.*

🗣️ Speakers



**Robert Palmer**

Exec Director, Assoc VPR, Professor  
U. of Oklahoma ARRC



**Joshua Wurman**

Executive Director  
University of Illinois



**Jothiram Vivekanandan**

Senior Scientist  
NCAR EOL



**Kevin Repasky**

Professor  
Montana State University



**Dave Turner**

Senior Scientist  
NOAA Global Systems Lab



**Tammy Weckwerth**

Senior Scientist  
NCAR EOL



**Zhien Wang**

Professor  
Stony Brook University



**Gavin McMeeking**

CloudSci LLC



**Adriana Bailey**

Assistant Professor  
University of Michigan



**Gijs de Boer**

Senior Research Scientist  
University of Colorado Boulder

10 Subsessions

● **Mobile Phased Array Weather Radars - Developments from the ARRC at the University of Oklahoma**

🕒 8:45 AM - 8:51 AM, Sep 21

📍 Center Green Auditorium

● **Network of portable S-band radars (SOW) and bistatic array of radars network (BARN)**

🕒 8:53 AM - 8:59 AM, Sep 21

📍 Center Green Auditorium

● **Airborne Phased Array Radar (APAR)**

🕒 9:01 AM - 9:07 AM, Sep 21

📍 Center Green Auditorium

● **Micropulse DIAL for Thermodynamic Profiling of the Lower Troposphere**

🕒 9:09 AM - 9:15 AM, Sep 21

📍 Center Green Auditorium

● **Ground-based Spectral IR Thermodynamic Profiling**

🕒 9:17 AM - 9:23 AM, Sep 21

📍 Center Green Auditorium

● **LOTOS: A comprehensive lower-tropospheric observing network**

🕒 9:25 AM - 9:31 AM, Sep 21

📍 Center Green Auditorium

● **Multi-functional Airborne Raman Lidar (MARLi) and 5-Beam Airborne Doppler Radar (ADL)**

🕒 9:33 AM - 9:39 AM, Sep 21

📍 Center Green Auditorium

● **Network of Atmospheric Composition and Aerosol Sensors**

🕒 9:41 AM - 9:47 AM, Sep 21

📍 Center Green Auditorium

● **From State to Process: What Airborne Isotopic Measurements tell us about Moisture Transport, Convective Mixing, and Precipitation Efficiency**

🕒 9:49 AM - 9:55 AM, Sep 21

📍 Center Green Auditorium

● **Small Uncrewed Aircraft for Weather and Climate Research: Insights from Decades of Research at the University of Colorado**

🕒 9:57 AM - 10:03 AM, Sep 21

📍 Center Green Auditorium

10:05 AM

**Coffee Break & Emerging Technologies Poster Session**

🕒 10:05 AM - 10:50 AM, Sep 21

📍 Center Green Lobby

[FARE Futu...](#)

10:50 AM

**SCIENCE NEEDS**

🕒 10:50 AM - 12:30 PM, Sep 21

📍 Center Green Auditorium

[FARE Futu...](#)

*Virtual Participants: Join the session by clicking on the Live Stream link below.*

## Speakers



**Steven Brown**  
Program Leader  
NOAA CSL



**Bianca Adler**  
Research Scientist  
CIRES, University of Colorado, NOAA PSL



**Dr. Adam Varble**  
Earth Scientist  
PNNL



**Greg McFarquhar**  
Director  
U. of Oklahoma CIWRO

## 5 Subsessions

### ● The NOAA/CSL Airborne Research Program - Measurements, Capabilities, Emerging Technologies, and Needs for Air Quality and Climate Research

🕒 10:50 AM - 11:10 AM, Sep 21

📍 Center Green Auditorium

### ● Advancing the Understanding of the Atmospheric Boundary Layer - Instrument Synergies and Challenges

🕒 11:12 AM - 11:32 AM, Sep 21

📍 Center Green Auditorium

### ● Requisite Measurements to Close Critical Gaps in our Understanding of Deep Convective Processes

🕒 11:34 AM - 11:54 AM, Sep 21

📍 Center Green Auditorium

### ● Measurements Needed to Advance Understanding of Aerosol-Cloud-Precipitation-Climate Interactions

🕒 11:56 AM - 12:16 PM, Sep 21

📍 Center Green Auditorium

### ● Q&A Science Needs

🕒 12:18 PM - 12:30 PM, Sep 21

📍 Center Green Auditorium

12:30 PM

## Lunch

🕒 12:30 PM - 1:30 PM, Sep 21

📍 Center Green Lobby

[FARE Futu...](#)

1:30 PM

## BREAKOUT SESSION 1 - What Capabilities Are Needed To Answer Science Questions? (5 Parallel Sessions)

🕒 1:30 PM - 3:15 PM, Sep 21

📍 Center Green Conference Rooms

[FARE Futu...](#)

- Topic 1A = Center Green Room 2603
- Topic 1B = Center Green Room 2607
- Topic 1C = Center Green Room 2503
- Topic 1D = Center Green Room 3131
- Topic 1E = Center Green Room 2126

*Virtual Participants: Join the Google Meet breakout session at the appropriate time for your preference of sessions.*

#### 6 Subsessions

● **Topic 1A - Aerosol, Cloud, Precipitation and Climate**

🕒 1:30 PM - 2:40 PM, Sep 21

📍 Center Green Room 2603

● **Topic 1B - Trace Gases, Biogeochemical Cycles, and Climate**

🕒 1:30 PM - 2:40 PM, Sep 21

📍 Center Green Room 2607

● **Topic 1C - Atmospheric Thermodynamics and Radiation**

🕒 1:30 PM - 2:40 PM, Sep 21

📍 Center Green Room 2503

● **Topic 1D - Boundary Layer Processes and Air Quality**

🕒 1:30 PM - 2:40 PM, Sep 21

📍 Center Green Room 3131

● **Topic 1E - Extreme Events: Deep Convection and Tropical Cyclones**

🕒 1:30 PM - 2:40 PM, Sep 21

📍 Center Green Room 2126

● **Reporting from Breakout Session 1 (5 mins each)**

🕒 2:45 PM - 3:15 PM, Sep 21

📍 Center Green Auditorium

3:15 PM

#### Coffee Break and Poster Session

🕒 3:15 PM - 3:45 PM, Sep 21

📍 Center Green Lobby

[FARE Futu...](#)

3:45 PM

#### BREAKOUT SESSION 2 - What Are the New Frontiers of Measurement Capabilities - Instruments? (5 Parallel Sessions)

🕒 3:45 PM - 5:30 PM, Sep 21

📍 Center Green Conference Rooms

[FARE Futu...](#)

- Topic 2A: Center Green Room 3131
- Topic 2B: Center Green Room 2503
- Topic 2C: Center Green Room 2126
- Topic 2D: Center Green Room 2603
- Topic 2E: Center Green Room 2607

*Virtual Participants: Join the Google Meet breakout session at the appropriate time for your preference of sessions.*

#### 6 Subsessions

● **Topic 2A - Radars (Phased Array, Solid State and Passive Radar Systems, Radar Hardware)**

🕒 3:45 PM - 4:55 PM, Sep 21

📍 Center Green Room 3131

● **Topic 2B - Lidars (Doppler, Raman, DIAL)**

🕒 3:45 PM - 4:55 PM, Sep 21

📍 Center Green Room 2503

● **Topic 2C - Passive Remote Sensing (Microwave Radiometers, IR Spectrometers, ...)**

🕒 3:45 PM - 4:55 PM, Sep 21

📍 Center Green Room 2126

● **Topic 2D - In-Situ Trace Gas Instruments**

🕒 3:45 PM - 4:55 PM, Sep 21

📍 Center Green Room 2603

● **Topic 2E - In-Situ Aerosol, Cloud and Precipitation Probes**

🕒 3:45 PM - 4:55 PM, Sep 21

📍 Center Green Room 2607

● **Reporting from Breakout Session 2 (5 mins each)**

🕒 5:00 PM - 5:30 PM, Sep 21

📍 Center Green Auditorium

5:30 PM

### FARE FUTURE RECEPTION - Sponsored by University of Wyoming

🕒 5:30 PM - 7:30 PM, Sep 21

📍 Center Green Lobby

[FARE Futu...](#)

Please join us for drinks and heavy hor d'oeuvres in the UCAR Center Green Lobby. This reception is sponsored by the University of Wyoming.

**Fri, Sep 22, 2023**

8:15 AM

### FARE Future - Review of Day 4 with Q&A

🕒 8:15 AM - 8:30 AM, Sep 22

📍 Center Green Auditorium

[FARE Futu...](#)

#### 🗣️ Speakers



**Dr. Bart Geerts**

Professor  
University of Wyoming



**Shree Mishra**

FARE Program Director  
NSF AGS



**Nicholas Anderson**

Program Director  
NSF AGS

8:45 AM

### BREAKOUT SESSION 3 - What Are the New Frontiers of Measurement Capabilities - Platforms? (5 Parallel Sessions)

🕒 8:45 AM - 10:30 AM, Sep 22

📍 Center Green Conference Rooms

[FARE Futu...](#)

- Topic 3A: Center Green Room 3131
- Topic 3B: Center Green Room 2126
- Topic 3C: Center Green Room 2503
- Topic 3D: Center Green Room 2607
- Topic 3E: Center Green Room 2603

*Virtual Participants: Join the Google Meet breakout session at the appropriate time for your preference of sessions.*

## 6 Subsessions

### ● Topic 3A - Instrument Networks

🕒 8:45 AM - 9:55 AM, Sep 22

📍 Center Green Room 3131

### ● Topic 3B - Crewed Aircraft Measurements Opportunities and Challenges

🕒 8:45 AM - 9:55 AM, Sep 22

📍 Center Green Room 2126

### ● Topic 3C - UAS / Drone Measurements Opportunities and Challenges

🕒 8:45 AM - 9:55 AM, Sep 22

📍 Center Green Room 2503

### ● Topic 3D - Lab Systems (Cloud Chambers, Ice Nucleation, Aerosol/Gas Spectrometry)

🕒 8:45 AM - 9:55 AM, Sep 22

📍 Center Green Room 2607

### ● Topic 3E - Interface between Models and Experimental Data

🕒 8:45 AM - 9:55 AM, Sep 22

📍 Center Green Room 2603

### ● Reports from Breakout Session 3 (5 mins each)

🕒 10:00 AM - 10:30 AM, Sep 22

📍 Center Green Auditorium

10:30 AM

### Coffee Break

🕒 10:30 AM - 11:00 AM, Sep 22

📍 Center Green Lobby

[FARE Futu...](#)

11:00 AM

### BREAKOUT SESSION - Wrap Up (Q&A and Refinement)

🕒 11:00 AM - 11:45 AM, Sep 22

📍 Center Green Auditorium

[FARE Futu...](#)

*Virtual Participants: Join the session by clicking on the Live Stream link below.*

#### 🗣️ Speakers



#### Dr. Bart Geerts

Professor  
University of Wyoming



#### Shree Mishra

FARE Program Director  
NSF AGS



#### Nicholas Anderson

Program Director  
NSF AGS



#### Allison McComiskey

NCAR Associate Director / EOL Director  
NCAR EOL

12:00 PM

### POST WORKSHOP - Steering Committee Working Lunch (Next Steps + Report Writing Over Lunch)

🕒 12:00 PM - 2:00 PM, Sep 22

📍 Center Green Room 3131

[FARE Futu...](#)

*Workshop Steering*

