Spring 2023 FPAW Meeting Agenda

Dates: 16 – 18 May 2023

Location: National Weather Service (NWS) Aviation Weather Center (AWC)
7220 NW 101st Terrace, Kansas City, MO 64153-2371

Room: NWS Training Center Auditorium unless otherwise specified

Registration: Required via FPAW website

Time (CDT)	Day 1 Tuesday, 5-16-23	Day 2 Wednesday, 5-17-23	Day 3 Thursday, 5-18-23
8:30 AM to 8:45 AM			AWC Tour 1
8:45 AM to 9:00 AM			
9:00 AM to 9:15 AM	**Main Session 1a** New Observation Standards and Methods 9:00 AM - 11:30 AM	**Main Session 3a** Research to Operations (R2O) 9:00 AM - 11:30 AM	AWC Tour 2
9:15 AM to 9:30 AM			
9:30 AM to 9:45 AM			**Main Session 4a** Aviation Weather Testbed (AWT) Activities 9:30 AM - 11:30 AM
9:45 AM to 10:00 AM			
10:00 AM to 10:15 AM			
10:15 AM to 10:30 AM			
10:30 AM to 10:45 AM			
10:45 AM to 11:00 AM			
11:00 AM to 11:15 AM			
11:15 AM to 11:30 AM			
11:30 AM to 11:45 AM	Lunch 11:30 AM - 12:30 PM	Lunch 11:30 AM - 12:30 PM	Lunch 11:30 AM - 12:30 PM
11:45 AM to 12:00 PM			
12:00 PM to 12:15 PM			
12:15 PM to 12:30 PM			
12:30 PM to 12:45 PM	**Main Session 1b** New Observation Standards and Methods 12:30 PM - 2:00 PM	**Main Session 3b** Research to Operations (R2O) 12:30 PM - 2:15 PM	**Main Session 4b** Aviation Weather Testbed (AWT) Activities 12:30 PM - 2:00 PM
12:45 PM to 1:00 PM			
1:00 PM to 1:15 PM			
1:15 PM to 1:30 PM			
1:30 PM to 1:45 PM			
1:45 PM to 2:00 PM			
2:00 PM to 2:15 PM			
2:15 PM to 2:30 PM	**Short Session 2** Wx Industry Survey 2:15 PM - 3:00 PM		**Short Session 5** Review of Prior FPAW Topics 2:15 PM - 3:15 PM
2:30 PM to 2:45 PM		**FPAW Planning Meeting** 2:30 PM - 4:30 PM	
2:45 PM to 3:00 PM			
3:00 PM to 3:15 PM			
3:15 PM to 3:30 PM	**Matt Strahan Tribute**		
3:30 PM to 3:45 PM			**Short Session 6** FPAW Org Updates 3:30 PM - 4:15 PM
3:45 PM to 4:00 PM	**FPAW Steering Committee Meeting (Closed Session)** AWC Conference Room 3:45 PM - 5:00 PM		
4:00 PM to 4:15 PM			
4:15 PM to 4:30 PM			
4:30 PM to 4:45 PM			
4:45 PM to 5:00 PM			
After 5:00 PM		**FPAW Dinner** 6:30 PM - ?? Granite City Brewery Zona Rosa	

Notes:

- Gray blocks indicate hybrid meeting (both in-person and remote participation)
- (r) = remote participant

Day 1 – Tuesday, May 16, 2023

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Main Sessions 1a and 1b – New Observation Standards and Methods
9:00 AM – 2:00 PM CDT, including a morning break and a lunch break
NWS Training Center Auditorium and Hybrid

New Observation Standards: FAA regulations require information in the Meteorological Aerodrome Report (METAR) to be used by aviators in their operations. Assuming that a METAR is representative of weather within 5 miles of the terminal area where the underlying observations are taken, this equates to two percent of Alaska and three percent of the lower 48 contiguous United States having reported weather information from Approved Sources at airports where a METAR is produced. Flight Standards has determined it is necessary to develop performance standards for Analyzed Weather information as a backup to and beyond where current approved weather reporting is being performed. These standards will be the basis for the approval of analyzed weather information for low altitude operations conducted where METAR information is missing or not available today.

The objective of this effort is to allow aviation operators to use Analyzed Weather Information that meets Performance Based Weather Standards (PBWS) as an approved source of weather information. This is primarily for low altitude operations where approved sensed weather information is either not available or is missing.

Session Co-Leads: John Steventon/FAA (r) and Scott Landolt/NCAR

Panelists/Presenters: Gordy Rother/FAA (r), Tom Ryan (CTR)/FAA (r), Kevin Johnston (CTR)/FAA (r), Don Berchoff/TruWeather Solutions and ASTM-F38 (r), Tiffany McCoy/FAA (r)

9:00 AM-9:10 AM CDT	*Welcome and Introduction* (Steventon, Landolt)
9:10 AM-9:50 AM CDT	*Performance Based Weather Standards (PBWS) for Analyzed Weather* (Rother, Ryan, Johnston)
9:50 AM-10:30 AM CDT	*ASTM-F38 Specifications for Weather Data Performance, Weather Data Interfaces and Weather Information Provider (WIP) Performance and Interoperability* (Berchoff)
10:30 AM-10:50 AM CDT	**BREAK**

10:50 AM-11:30 AM CDT *NextGen Operational Improvement (OI) Approval of 3rd Party Weather Information Providers* (McCoy)

11:30 AM-12:30 PM CDT **LUNCH BREAK**

New Observation Methods: This portion of the session will focus on planned improvements to automated weather observation systems, research being conducted on the use of UAS as *in situ* weather observation platforms, and efforts to fill in current weather radar gaps.

Panelists/Presenters: Gus de Azevedo/Oklahoma State University, Ken Boutin/NWS (r), Apoorva Bajaj/Climavision

12:30 PM-12:55 PM CDT *Latest UAS-based Measurements for Aviation Weather* (de Azevedo)

12:55 PM-1:30 PM CDT *A Decadal Look at the ASOS Life Cycle Sustainment* (Boutin)

1:30 PM-2:00 PM CDT *Radar Gap Filling with Supplemental X-band Weather Radars across the U.S.* (Bajaj)

2:00 PM-2:15 PM CDT **BREAK**

Short Session 2 – Weather Industry Perspective Survey Results
2:15 PM – 3:00 PM CDT
NWS Training Center Auditorium and Hybrid

Session Co-Leads and Panelists/Presenters: Tenny Lindholm/NCAR (r) and Gary Pokodner/FAA

This session presents the results of a Pilot Industry Survey that was developed and conducted by NCAR on behalf of the FAA's Weather Technology in the Cockpit (WTIC) Program Office. The primary goal of the survey was to identify information and capability gaps that still need to be addressed for the WTIC Program minimum weather service (MinWxSvc) recommendations for cockpit weather information. We present suggested future research for the WTIC Program as derived from survey results. We also solicit feedback on prioritizing these future research areas, and suggestions for other areas that the survey and subsequent analyses may have missed. Pilots represented by the Air Line Pilots Association (ALPA), the National Business Aviation Association (NBAA), and other Part 121 airline groups participated in the survey.

3:00 PM-3:15 PM CDT **BREAK**

Matt Strahan Tribute
3:15 PM-3:30 PM CDT
Please join us as we honor our late colleague, friend, and inaugural member of the FPAW Steering Committee, Mr. Matt Strahan. A scholarship fund has been started and set up in Matt's name. Please visit the University of Missouri's Mizzou Give Direct site at https://mizzougivedirect.missouri.edu/fund.aspx?item_id=886 for more information and to contribute to this most worthy of causes in our former colleague's name.

3:30 PM-3:45 PM CDT **BREAK**

FPAW Steering Committee Meeting
3:45 PM – 5:00 PM CDT
AWC Conference Room and Hybrid

FPAW Steering Committee members will meet to discuss matters of its organization, mission, and best ways to impactfully guide the FPAW movement going forward. It will be a closed session for FPAW Steering Committee members only.

Day 2 – Wednesday, May 17, 2023

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Main Sessions 3a and 3b – Research to Operations (R2O)
9:00 AM – 2:15 PM CDT, including a morning break, a lunch break and an afternoon mini-break
NWS Training Center Auditorium and Hybrid

It is estimated that millions of dollars are spent annually in the U.S. on Research to Operations (R2O) and new product development efforts in the aviation weather (AvWx) enterprise. Operationalized AvWx products are those techniques, algorithms, and software that make it into everyday use for the safe, efficient, and sustainable movement of passengers and goods in the NAS (and internationally) towards commercial, government or academic pursuits. Thus, successful AvWx R20 directly impacts the day-to-day activities conducted by aviation end users that include pilots, aircraft dispatchers, planners, air traffic controllers, airport personnel, and the aviation meteorologists that support the end users.

Steps of the R2O process can be assumed to be no different than what takes place in any other industry or enterprise and involve the identification of the needs ("customer needs") of stakeholders, articulation of problem statements, budget preparation, securing of funds, team selection, goal and timeline setting, development and experimenting, prototyping, user testing, quality control, trials, productization and eventual operational deployment. Given the size and diversity of the AvWx enterprise, how are we doing as a nation in our effectiveness in the R2O process? Are we seeing the expected Return on Investment? Are we 'organized' as a community for success?

This multi-part session will focus on:
1) Understanding the R2O process across the AvWx enterprise
   Panelists/presenters from across the enterprise will answer questions related to the R2O process itself, rather than focusing on active research or recent innovations themselves
2) Listening to End Users
   This session will feature a diverse group of users that directly use AvWx products in their day-to-day operations and gives them a chance to talk about their unmet needs. Invited speakers will include pilots, dispatchers, air traffic controllers, and airport personnel.

Session Co-Leads: Apoorva Bajaj/Climavision and Danny Sims/FAA

Panelists/Presenters: Gordon Brooks/AFWA, Brandon Smith/FAA and USNR (r), Kevin Garrett/NWS, Shawn Miller/Raytheon, David Strand/MITRE, Michael Splitt/FIT, Jim Evans/MIT-LL (r), Jose Guzman/Managing Partner, FortMedTix Medtech Consultants LLC (r), Bill Bauman/MITRE (r), Randy Bass/FAA, Eric Avila/NATCA, Nathan Polderman/UAL and David Dillahunt/SWA

9:00 AM-9:30 AM CDT	*Introduction – Where Does R2O Happen in the Aviation Weather Enterprise* (Bajaj, Sims)
9:30 AM-9:50 AM CDT	*R2O in the Air Force Weather Agency – A Manager's Perspective* (Brooks)
9:50 AM-10:10 AM CDT	*Aviation Weather R2O in the Navy* (Smith)
10:10 AM-10:30 AM CDT	**BREAK**
10:30 AM-10:50 AM CDT	*Unified Forecast System R2O* (Garrett)
10:50 AM-11:10 AM CDT	*R2O Case Studies - JPSS Common Ground System and EPIC Community-Led Innovation* (Miller)
11:10 AM-11:30 AM CDT	*R2O – A Pilot's Perspective* (Strand)
11:30 AM-12:30 PM CDT	**LUNCH BREAK**
12:30 PM-12:50 PM CDT	*R2O from a University Perspective* (Splitt)
12:50 PM-1:10 PM CDT	*R2O Case Study – Microburst Product* (Evans)
1:10 PM-1:20 PM CDT	**MINI-BREAK**
1:20 PM-1:50 PM CDT	*From the Operating Table to the Cockpit: What Can We Learn about Meeting User Needs from the Medical Devices Industry* (Guzman)
1:50 PM-2:15 PM CDT	*Panel and Audience Discussion: Going Ahead – What did We Learn Today?* (Bauman, Bass, Avila, Polderman, Dillahunt)
2:15 PM-2:30 PM CDT	**BREAK**

FPAW Planning Meeting
2:30 PM – 4:30 PM CDT
NWS Training Center Auditorium and Hybrid

Session Co-Leads: Matt Fronzak/MITRE and Matthias Steiner/NCAR

The location, dates, and target session topics for the Fall 2023 FPAW Meeting will be discussed and decided upon. Potential locations, dates, and session topics will be similarly reviewed and catalogued for the Spring 2024 FPAW Meeting. Proposed topics submitted to https://fpaw.aero/form/submit-a-topic will be included in these discussions.

FPAW Dinner
6:30 PM - ?? CDT
Granite City Brewery
8461 NW Prairie View Road
Kansas City, MO
(816) 587-3838
FPAW attendees and guests are welcome.
Sign-up via sheet in Training Center Auditorium.

Day 3 – Thursday, May 18, 2023

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AWC Tours
8:30 AM – 9:30 AM CDT
Meet-up location: NWS Training Center lobby near the AWC door

There will be two 30-minute tours of the Aviation Weather Center, the first starting at 8:30 AM CDT and the second at 9:00 AM CDT.
Sign-up via sheet in Training Center Auditorium. Maximum of 15 participants/tour.

Main Sessions 4a and 4b – Testbed Activity: User Engagement in the R2O Process
9:30 AM– 2:00 PM CDT, including a morning break, a lunch break, and an afternoon break
NWS Training Center Auditorium and Hybrid

This session will be a follow on from the Fall 2022 Friends and Partners in Aviation Weather (FPAW) session on probabilistic weather and will be run in collaboration with the 2023 Aviation Weather Testbed (AWT) experiment. The morning session will begin with an overview of current probabilistic guidance advancements and use from a variety of aviation weather experts. It will continue with an interactive, large group exercise involving interpretation of the AWC Winter Weather Dashboard. After lunch, the afternoon portion will first employ break out groups to examine user interpretation of Meteorologist in the Loop products, and it will conclude with another large group user interpretation exercise.

As part of the concurrent AWT experiment, participants will be tasked with developing probabilistic forecasts based on various guidance products and will then present those to the FPAW attendees. The FAA's Aviation Weather Demonstration and Evaluations (AWDE) Services group will be leading the focus group activities to better understand user utility, interpretation, and decision-making processes from the probabilistically derived forecast guidance presented. This guidance will include both forecaster-in-the-loop derived products, as well as graphical displays developed directly from probabilistic guidance.

The overall goal of this session is to establish a baseline of probabilistic guidance understanding by the user community and identify a path forward for developing and distributing probabilistic guidance products to ensure they are properly interpreted and utilized for decision making.

Session Co-Leads: Stephanie Avey/NWS AWC and Ian Johnson/FAA

Panelists/Presenters: Austin Cross/NWS AWC, Chad Gravelle, NWS SRH (r), Craig Hartsough/NOAA GSL, Nicole Stevens/CIRA AWC, Sonia Alvidrez/FAA, Courtney Maciejewski/FAA, Jill Miller/FAA

9:30 AM-9:45 AM CDT *AWT Overview of Current Probabilistic Products* (Avey, Cross)

9:45 AM-10:10 AM CDT *Forecasting a Continuum of Environmental Threats (FACETs) and the Use of Probabilities in the NWS* (Gravelle)

10:10 AM-10:30 AM CDT *RRFS Updates and Ensembles* (Hartsough)

10:30 AM-10:45 AM CDT **BREAK**

10:45 AM-11:30 AM CDT *Large Group Exercise: User Interpretation of the AWC Winter Weather Dashboard* (Stevens, Cross, Alvidrez, Maciejewski, Miller)

11:30 AM-12:30 PM CDT **LUNCH BREAK**

12:30 PM-1:15 PM CDT *Breakout Groups Exercise: User Interpretation of Meteorologist in the Loop IDSS Products* (Avey, Cross, Alvidrez, Maciejewski, Miller)

1:15 PM-1:30 PM CDT **BREAK**

1:30 PM-2:00 PM CDT *Large Group Exercise: User Interpretation of an Outlook Graphic for Days 1-3* (Avey, Cross, Alvidrez, Maciejewski, Miller)

2:00 PM-2:15 PM CDT **BREAK**

Short Session 5 – Review of Prior FPAW Topics
2:15 PM – 3:15 PM CDT
NWS Training Center Auditorium and Hybrid

Session Lead: Steve Darr/Dynamic Aerospace

Presenter: Randy Bass/FAA

This session will feature two updates. The first, presented by Steve Darr, will explore how FPAW partners can create 'pull' for the implementation of ADS-B Wx with the goal of having FPAW partners commit to taking specific actions to ensure the data ADS-B Wx can deliver is delivered. The second will focus on the activities of the FAA Weather Community of Interest (Wx COI) and be delivered by Wx COI Co-Lead Randy Bass (FAA).

3:15 PM-3:30 PM CDT **BREAK**

Short Session 6 – FPAW Organizational Update
3:30 PM – 4:15 PM CDT
NWS Training Center Auditorium and Hybrid

Session Co-Leads: Matt Fronzak/MITRE and Matthias Steiner/NCAR

Pertinent updates from the FPAW Steering Committee will be provided.