

SPEAR: Strategic Partnerships for Enhancing Airport Resilience

University of Florida and Dallas Fort Worth International (DFW) Airport Workshop

DFW International Airport, Texas | 17 to 19 August 2026 | AGENDA

About the Workshop

Airports are among the most complex and consequential nodes of critical infrastructure: they concentrate transportation, energy, communications, logistics, and security functions in a single system which, when disrupted, can cascade impacts across entire regions within hours. Extreme weather, technological and cyber failures, and growing operational demand are stressing airports more frequently and more severely, while scenario-based planning struggles to keep pace. Building the resilience to absorb disruption, sustain critical functions, and recover quickly has become a strategic priority for U.S. airports.

The Strategic Partnerships for Enhancing Airport Resilience (SPEAR) project is a research network funded by the National Science Foundation (Award No. 2533731) and led by the Agricultural and Biological Engineering Department at the University of Florida's Institute of Food and Agricultural Sciences, in partnership with DFW and Dara Systems. SPEAR develops science-based, data-driven tools and frameworks that strengthen the operational resilience of U.S. airports and major infrastructure systems to withstand, recover from, and adapt to disruptions ranging from natural hazards to cascading failures.

Why DFW: Dallas Fort Worth International Airport serves as SPEAR's living laboratory for developing and validating resilience frameworks. Working through DFW's Integrated Operations Center, the project will generate generalizable models in active collaboration with other airports and transportation systems nationwide.

Workshop Objectives

- Identify and prioritize the critical functions that most affect airport operations and resilience.
- Develop a systematic evaluation framework to assess these functions and inform decision-making.
- Develop and adopt threat-agnostic methodologies that move beyond scenario-based analyses.
- Model systemic interdependencies among critical functions to enhance airport effectiveness and resilience.

Workshop at a Glance

Day 1, Monday 17 August — Framing the Challenge: Keynote briefings on airport resilience, stress-testing, and climate adaptation science; a panel on resilience indicators and data integration; and case studies from DFW's own resilience initiatives.

Day 2, Tuesday 18 August — Building the Toolkit: Breakout development of resilience models, metrics, and digital twin applications; strategic planning on operational bottlenecks and research gaps; an Integrated Operations Center (IOC) visit; and stakeholder stress-testing of proposed tools.

Day 3, Wednesday 19 August — Synthesis and Next Steps: Consolidation of findings into whitepapers defining research priorities, operational best practices, and policy guidance for U.S. airports.

Day 1: Monday, 17 August 2026

Framing the challenge: keynote, panel, and DFW case studies

Time	Activity	Room
9:00 to 9:30 am	Welcome and Introductions	1B1002 – Multi-Purpose Room
9:30 to 10:30 am	Keynote Leading experts on airport resilience, stress-testing, and climate adaptation science will present the latest research findings and frameworks.	1B1002 – Multi-Purpose Room
10:30 to 11:00 am	Coffee Break	
11:00 am to 12:30 pm	Panel How do resilience indicators capture operational recovery? What are the challenges of integrating multi-source airport data into actionable intelligence?	1B1002 – Multi-Purpose Room
12:30 to 1:30 pm	Lunch	
1:30 to 3:30 pm	Case Studies Real-world insights from DFW's own resilience initiatives, covering past disruptions, lessons learned, and current mitigation strategies.	1B1002 – Multi-Purpose Room
3:30 to 4:00 pm	Coffee Break	
4:00 to 5:00 pm	Wrap-Up and Reflection	

Day 2: Tuesday, 18 August 2026

Model building, strategic planning, and the Integrated Operations Center visit

Time	Activity	Room
9:00 to 9:30 am	Recap from Day 1 and Overview of Day 2	1B1002 – Multi-Purpose Room
9:30 to 10:30 am	Breakout Sessions Collaborative development of quantitative resilience models, resilience metric frameworks, and digital twin applications for airport systems.	1B1002 – Multi-Purpose Room; 1B1036 – Dallas Fort Worth; 1B1034 – Texas
10:30 to 11:00 am	Coffee Break	
11:00 am to 12:30 pm	Strategic Planning Structured sessions to identify operational bottlenecks and critical research gaps, and to develop a roadmap for strategic collaboration.	1B1002 – Multi-Purpose Room; 1B1036 – Dallas Fort Worth; 1B1034 – Texas
12:30 to 1:30 pm	Lunch	
1:30 to 2:30 pm	Shuttle to the IOC * Departure at 1:30 pm; IOC tour from 2:00 to 2:30 pm.	IOC Tour
2:30 to 3:30 pm	Presentation from the Vice President of the IOC Presented by Lance Bodine.	EOC (in the IOC)
3:30 to 5:00 pm	Stakeholder Engagement Industry operators and government partners will review and stress-test proposed tools and frameworks for real-world operational adoption.	EOC (in the IOC)

* Transportation to and from the IOC is provided.

Day 3: Wednesday, 19 August 2026

Synthesis, whitepapers, and next steps

Time	Activity	Room
9:00 am to 12:00 pm	Next Steps The workshop findings will be reported in a set of whitepapers that will help define research priorities, identify operational best practices, and guide policymaking to improve the operations of U.S. airports under diverse conditions.	1B1002 – Multi-Purpose Room
12:00 to 1:00 pm	Lunch and Closure	

The formal workshop concludes following Lunch and Closure.

The SPEAR Stakeholder Network

SPEAR gathers input from local governments and regulatory agencies, airport operation specialists, service providers, and transportation and resilience experts to understand the interdependencies among airport functions and their resilience implications.



Contact Information

Henry Medeiros, Ph.D.

Principal Investigator of SPEAR | Associate Professor

University of Florida

hmedeiros@ufl.edu