

MMM SEMINAR SERIES



Dynamic weather, dynamic people: Understanding the human system to guide improved predictions of hazardous weather

Julie Demuth
NSF NCAR/MMM

Hazardous weather—such as hurricanes, flooding, tornadoes, winter storms—is dynamic, evolving over the course of minutes, hours, and days. The weather community accordingly has developed an extensive observational network and computational capabilities to observe, understand, and predict such threats and the risks they pose to people. It is reasonable to think that the human system is dynamic in response to the dynamic physical system. Research to investigate such coupling is nascent, yet it is essential in order to assess the effectiveness of the forecast system and to identify where improved predictions are most needed.

In this talk, I'll begin by sharing empirical and theoretical highlights from past studies, which reflect the genesis of research I have led and collaborated on to examine humans as dynamic across different timescales and different hazards. I'll then discuss our team's ongoing research efforts, focusing predominantly on repeated surveys of the same people—termed longitudinal panel surveys—conducted for a given hazardous weather event, which we have implemented for three hurricanes and two atmospheric rivers while each event was threatening. These surveys reflect a major methodological contribution to collecting perishable, event-based observations of people to investigate whether, when, and how they changed over time as the hazardous weather threat evolved. These data are yielding insights about how people obtained, interpreted, and used forecast information and about potential forecast improvements. I'll share some results from these data, and I'll discuss ideas for future directions to expand this research. Finally, I'll highlight the criticality of team-based research, including with expertise from across disciplines and sectors, to the success of the science.

WEDNESDAY, 18 June 2025, 2:15PM

Refreshments 2:00PM

Please also join colleagues for refreshments and informal discussion after the seminar until 3:45pm

NCAR-Foothills Laboratory, 3450 Mitchell Lane
FL2-1022, Large Seminar

Seminar will also be live webcast

<https://sundog.ucar.edu/public/page/MMM>

Participants may ask questions during the seminar via Slido.