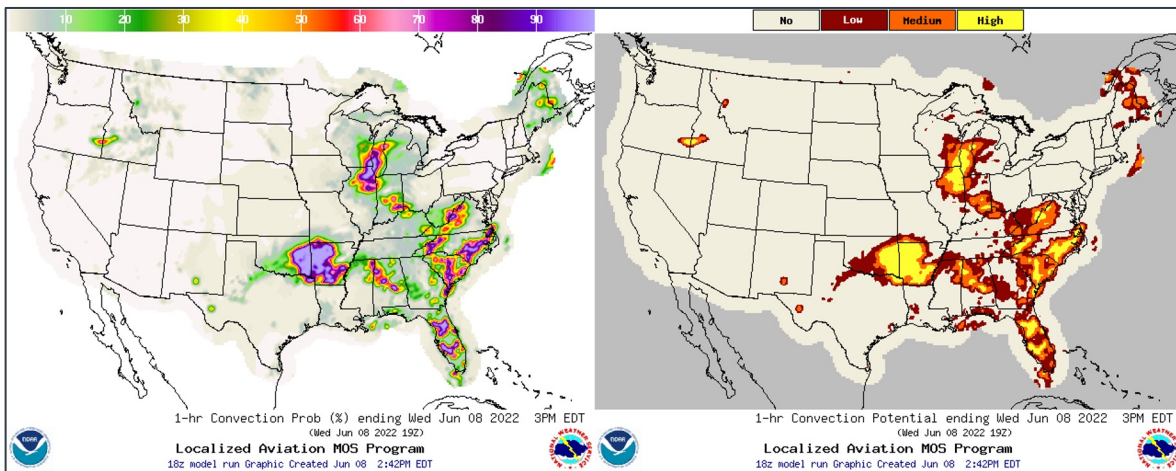


# NWS/OSTI/MDL - Judy Ghirardelli

- The NWS' **Meteorological Development Laboratory** (MDL) conducts applied research and development for the improvement of diagnostic and prognostic weather information; data depiction and utilization; warning and forecast product preparation and dissemination; forecast evaluation; and impact-based decision support services.
  - MDL has decades of experience with producing calibrated, statistically-postprocessed forecast guidance for a wide variety of users, partners, and stakeholders.
- The **National Blend of Models** (NBM) is a nationally consistent and skillful suite of calibrated forecast guidance based on a blend of both NWS and non-NWS numerical weather prediction model data and post-processed model guidance.
  - The goal of the NBM is to create a highly accurate, skillful and consistent starting point for the gridded forecast. This new way to produce NDFD grids will be helpful providing forecasters with a suite of information to use for their forecasts. The NBM is considered an important part of the efforts to evolve NWS capabilities to achieve a Weather-Ready Nation.

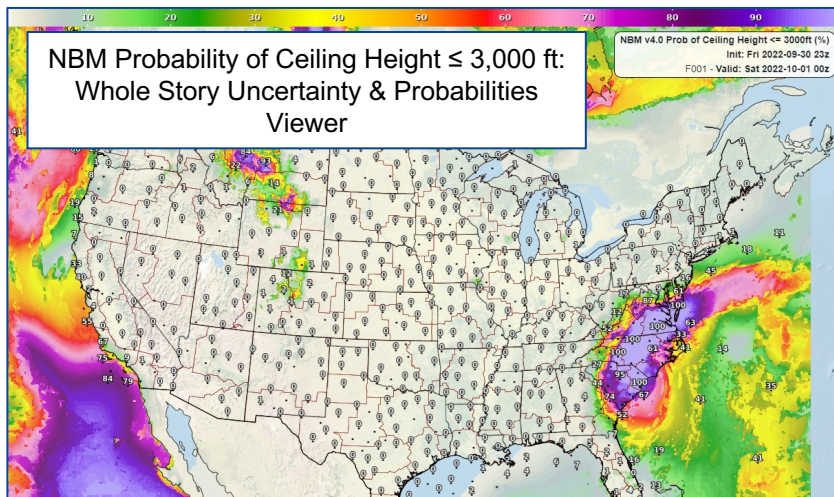
# NWS/OSTI/MDL - Judy Ghirardelli

- The **Localized Aviation MOS Program** (LAMP) provides probabilistic guidance for aviation elements including ceiling height, visibility, lightning, and convection.
  - LAMP's ceiling height & visibility guidance is weighted 100% in the NBM for 1-36 h
  - Almost all of LAMP deterministic guidance is based on underlying probabilities and statistically-derived thresholds.
- MDL techniques used:
  - Multiple Linear Regression
  - Bias Correction
  - Quantile Mapping
  - Currently exploring Artificial Intelligence/ Machine Learning techniques such as Random Forests and Convolutional Neural Networks



# Probabilistic Visualization

Probabilistic forecasts can help  
users to provide  
improved Impact-based  
Decision Support Services



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