END STAGE EXPERIMENT
Science Goals & Observational Applications

Tropical Cyclones at Landfall Experiment: Ghassan Alaka (Co-PI), Heather Holbach (Co-PI), John Kaplan, Peter Dodge, Jun Zhang, Frank Marks

Goal: This experiment is designed to employ the P-3 aircraft to collect thermodynamic and kinematic observations in landfalling tropical cyclones to aid in achieving three goals:

1) To better understand the mechanisms that modulate a TC's potential for producing tornadoes. [*IFEX Goals 1, 3*]
2) To investigate the factors that control both the magnitude of the wind gusts and rate of decay of the sustained wind both at and after landfall. [*IFEX Goals 1, 3*]
3) To reduce the uncertainty in SFMR wind speed estimates in coastal regions. [*IFEX Goal 2*]

See the 2019 HRD HFP web page for additional details:
 http://www.aoml.noaa.gov/hrd/HFP2019/index.html

Observational Applications: The kinematic and thermodynamic data collected during this experiment will be useful both for real-time model initialization and analysis as well as post-storm validation purposes as the airborne Doppler, dropsonde, and SFMR data will each be transmitted in real-time and made available via public web sites after the completion of each flight. The comprehensive nature of the above datasets will allow researchers to perform various model sensitivity experiments to evaluate the forecast accuracy produced utilizing various model configurations as well to validate the accuracy of the pre and post landfall storm structure that is forecasted by a given model.