

## **The Hurricane Forecast Improvement Project Awards — Integrating research-to-operations gains at the National Weather Service**

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The Hurricane Forecast Improvement Project (HFIP) was established in 2009 as a ten year effort with the aim of achieving a 50% improvement in hurricane numerical forecast guidance provided by the National Centers for Environmental Prediction (NCEP) to the National Hurricane Center (NHC) for both track and intensity, predicting rapid intensification, and extending forecast guidance out to seven days. The specific goals for are as follows:

- Reduce average track errors by 20% in 5 years, 50% in 10 years for days 1 through 5.
- Reduce average intensity errors by 20% in 5 years, 50% in 10 years for days 1 through 5.
- Increase the probability of detection (POD) for rapid intensification (RI) to 90% at day one decreasing linearly to 60% at day 5, and decrease the false alarm ratio (FAR) for rapid intensity change to 10% for day 1 increasing linearly to 30% at day 5. The focus on rapid intensity change is the highest-priority forecast challenge identified by NHC.
- Extend the lead-time for hurricane forecasts out to day 7 (with accuracy equivalent to that of the day 5 forecasts in 2006, approximately 260 nautical miles).

Two federal funding opportunities were published, “round one” in 2011, and “round two” in 2013. Twelve collaborative awards were granted in round one totaling \$2.46M and also in round two totaling \$3.78M. A research contract was also awarded. Round one funding is now complete whereas round two continues and is past the first year mark. This summarizes the integration of research into operational gains transitioned to National Weather Service arising from the work of the awards and future plans.