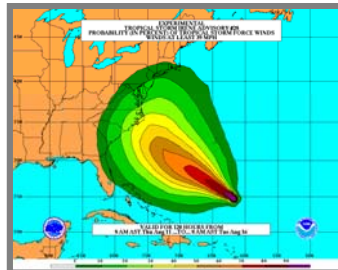




## Goals

- **Improve** Forecast Accuracy
  - Hurricane impact areas (track) – 50% in 10 years
  - Severity (intensity) – 50% in 10 years
  - Special Focus on Rapid Intensity Change (RI)
- **Extend** forecast reliability out to 7 days
- **Quantify, bound and reduce** forecast uncertainty to enable risk management decisions



<http://www.hfip.org/>



## How to get there?

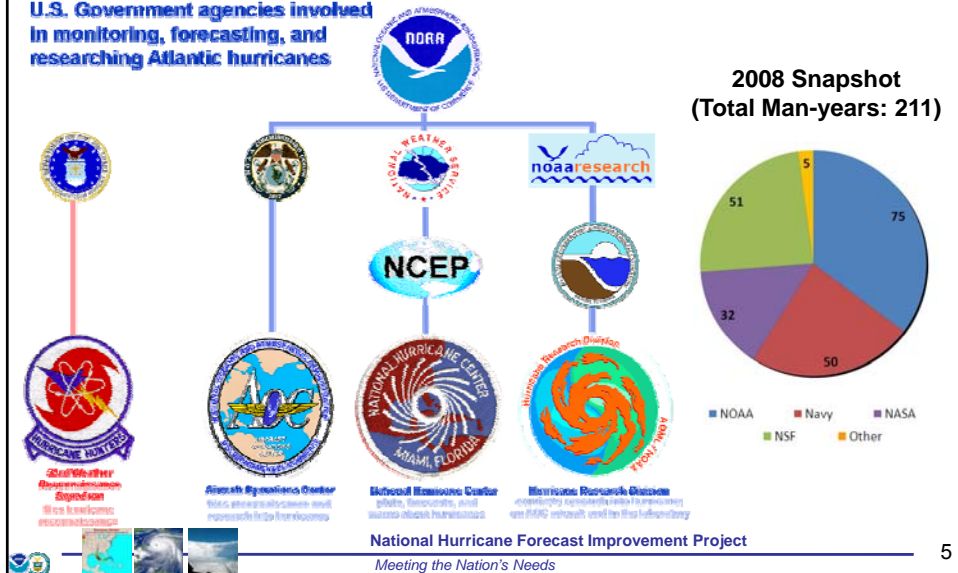


- ✓ **Science (8 Teams)**
  - Improved understanding from combining observations & models
  - Higher resolution coupled models – critical to storm evolution forecasts – especially intensity changes
  - Forecast techniques to understand, reduce & communicate uncertainty
- ✓ **Information Technology**
  - Increased computing power - run advanced hurricane/global models & reduce uncertainty
  - IT infrastructure for interagency data exchange
- ✓ **Observing Strategy**
  - Improved use of existing and planned systems
- ✓ **Improved Products for Forecasters**



# Who: U. S. Hurricane Team

U.S. Government agencies involved in monitoring, forecasting, and researching Atlantic hurricanes



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# What: HFIP Activities

## Traditional Hurricane Research Activities:

- Observations, analysis, database, & instrument R&D (IFEX)
- Statistical-dynamical model development
- Advances in operational models (Stream 1)

## New HFIP Research Thrusts:

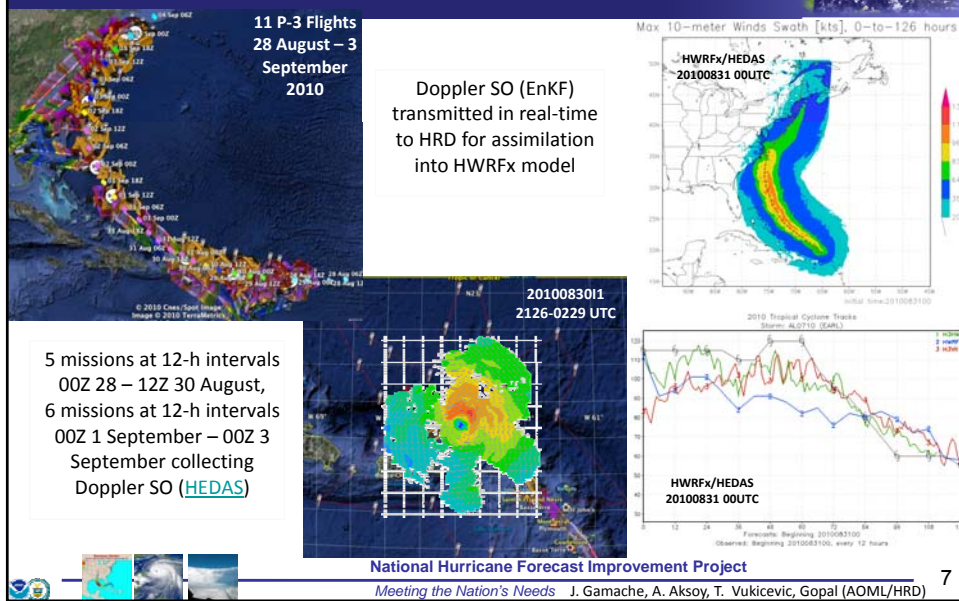
- Experimental global and regional hurricane model development (Stream 2)
- Data assimilation techniques and observing system strategy analysis development (Stream 1 & 2)
- Model evaluation tool development
- Application and tool development for forecasters

Partnership: NCEP, AOC, AOML, ESRL, GFDL, DTC, USWRP, NESDIS/STAR

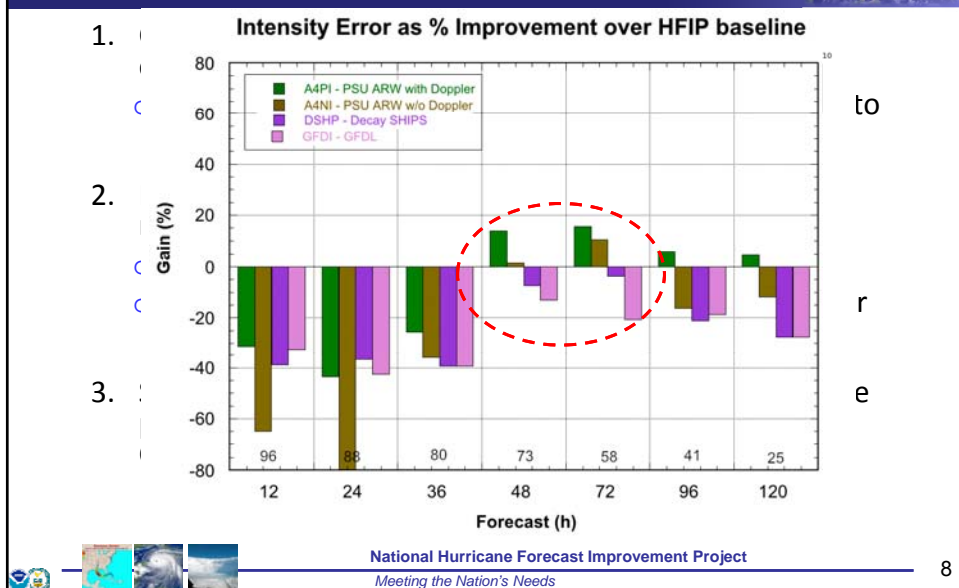
**National Hurricane Forecast Improvement Project**  
Meeting the Nation's Needs

6


# Improved Use of Observations: HFIP 2010 Demo: Earl



# HFIP 2010 Demonstration



# What in 2011?

- 2011 HFIP model demonstration
  - Global model ensemble
    - 80 member GFS hybrid-EnKF
  - Regional model ensemble
    - ≥15 HWRF members (2@27:9:3 km, ≥10@9:3 km)
    - ≥10 COAMPS-TC members (45:15:5 km)
    - ≥10 ARW members (40.5:13.5:4.5 km)
- IFEX 2011 
  - Continuation of IFEX objectives ([Rogers et al, 2006](#))
  - 320 flight hours two P-3s & G-IV available in June
  - Crews available for 2-per-day missions
  - [IFEX 2011 home page](#) (see Shirley's presentation)



# Keys to Success

- **Partnership:** AOML, ESRL, GFDL, DTC, USWRP, NESDIS/STAR working closely with Operations (EMC, NHC, AOC) and Federal & Academic Partners (NASA, NSF, ONR, NRL, NCAR, MMS)
- More integrated use & support of Testbeds: JHT, DTC, JCSDA
- Blend Traditional hurricane research activities and HFIP research activities
- **Manpower (diversity) to evaluate model performance with hurricane data sets is a critical need**



# Questions?

