



2019 NOAA TB&PG Workshop

Boulder CO

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Joint Hurricane Testbed

Mark DeMaria, NWS/National Hurricane Center

Jason Sippel, OAR/Hurricane Research Division

Joint Hurricane Testbed Overview

- **Our Mission:** successfully transfer new technology, research results & observational advances for tropical typhoon forecasting from research groups to operational centers (NHC, CPHC, JTWC)
- Round 8: FY15-17 – 7 projects with no cost extensions wrapping up
- Round 9: FY17-19 – 6 projects in progress
- Round 10: FY19-21 - Selection of new projects nearly completed
- Funding levels
 - ~\$750 K for project funding
 - ½ time support for JHT IT facilitator
 - 0.2 FTE support and HRD for admin support

FY18 Highlights

- FSU Hart/Halperin TC genesis product very popular with forecasters
- CSU/CIRA heat content/daily SST processing system implemented in NHC operations for 2018 hurricane season
 - Extensive new developmental dataset for sub-surface ocean predictors for NHC statistical TC intensity models
- Two projects using machine learning for TC intensity models
 - Will assess value of advanced statistical methods relative to linear methods currently used
- U of Miami aircraft under-sampling bias correction method will be used in NHC operations in 2019

Challenges

- Leadership changes
 - Former JHT Director (Chris Landsea) became NHC TAFB Chief in May 2018
 - Mark DeMaria Acting JHT Director
 - Jason Sippel taking on larger role
 - JHT IT facilitator contract ended, new facilitator selected with new role
- Projects backing up (3 rounds at once)
 - Formal evaluation for FY15-17 projects will start soon
- Several recent projects have incompatible software, require real-time processing not available at NHC

Backup Slides for R2O Discussion

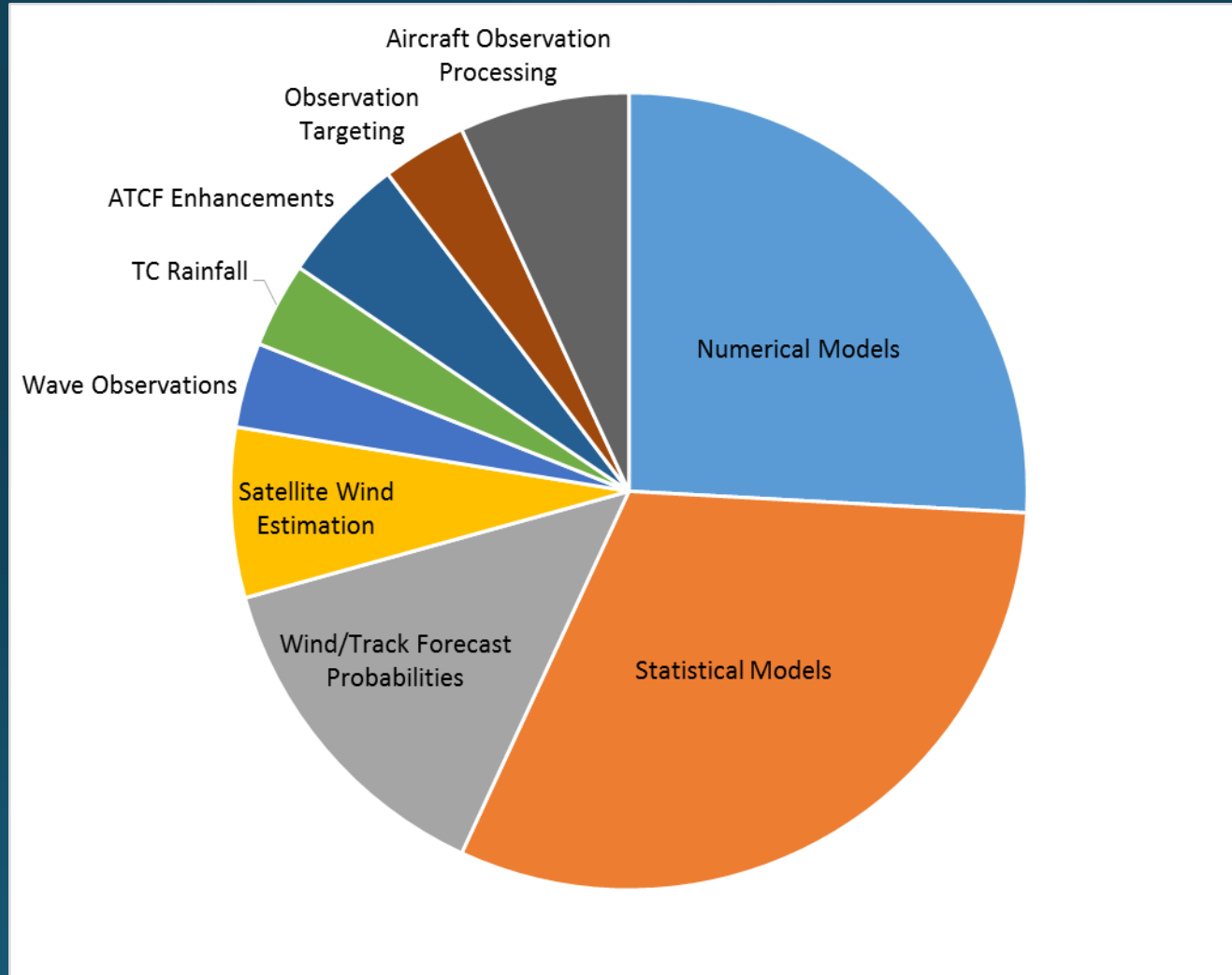
Metrics for Operational Implementation

- **Forecast or Analysis Benefit:** expected improvement operational forecast and/or analysis accuracy
- **Efficiency:** adherence to forecaster time constraints and ease of user's needs
- **Compatibility:** IT compatibility with operational hardware, software, data, communication, etc.
- **Sustainability:** availability of resources to operate, upgrade, and/or provide support

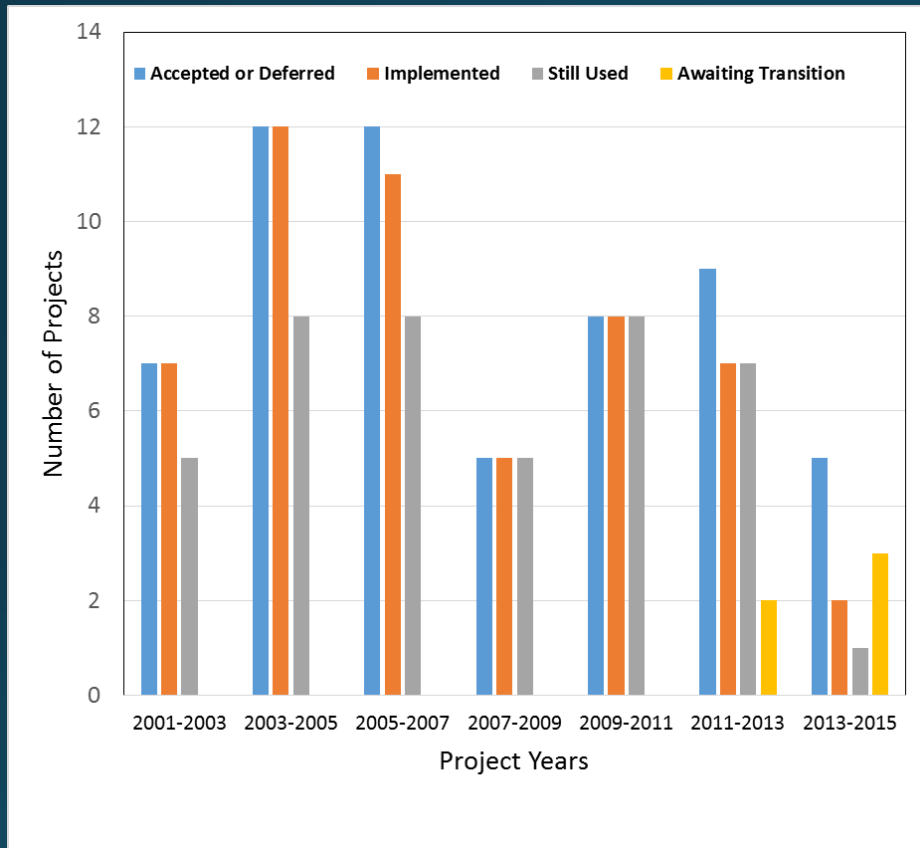
NHC Procedure for R2O Decision

- Receive final reports from PIs
- Provide interim and final reports to NHC forecaster focal points, TSB Chief, JHT Director for comments
- Make recommendation to NHC Director
- NHC Director makes final decision
 - Accepted for transition
 - Deferred
 - Non accepted
- Send decision letters to PIs
- NHC/TSB adds JHT transitions to annual development priorities

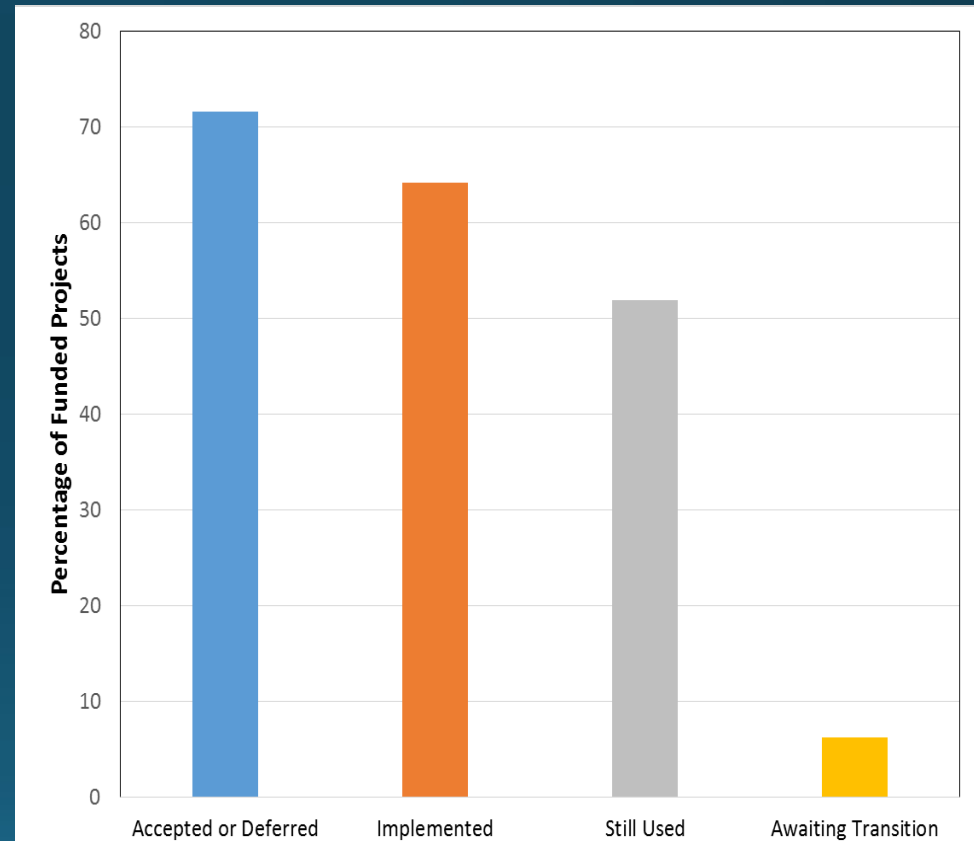
Evaluation of Round 1-7 Projects



Status of Round 1-7 Projects (2001-15)



By Round



Total Rounds 1-7

Lessoned Learned for Successful R2O

- Early coordination with project PIs
 - Describe NHC's operational computer environment
 - NHC forecast cycle and time constraints
- Real-time demonstrations enlightening
- Two categories of successful projects
 1. Major new capabilities
 - *Examples: 2003 TC Rapid Intensification Index*
 - *2007 Windspeed probability model*
 - *2015 Initial Hart/Halperin TC genesis probabilities*
 2. Used compatible software or tested in parallel operational IT environment
 - *Examples: 2007 Add GOES and ocean heat content predictors to statistical models*
 - *2013 Extended-range baseline track/intensity models*
 - *2017 NRL TC satellite product web page enhancements*