Joint Hurricane Testbed (JHT) 2010 Update

Transition from Research to Operations

Jiann-Gwo Jiing
Chief, Technical Support Branch, NHC
JHT Director

Shirley Murillo
NOAA/HRD

Chris Landsea
NHC

NOAA Hurricane Conference
30 November, 2010
The Forecasters

The Researchers (them):

How to bridge the “valley of death”?
JHT Process

• Principal Investigators apply for funding through NOAA
• A seven member Steering Committee rates all proposals
• Funded projects are tested during one or two hurricane seasons in conjunction with NHC/Environmental Modeling Center points of contact
• At the project’s end, each are evaluated by NHC/EMC staff
• Implementation of successful projects are then carried out by NHC/EMC staff/PIs
Summary of JHT projects
2001-2010

1) Number of projects supported: 62
   - 50 completed, 35.5 accepted for operational implementation
   - Number of projects rejected: 5
   - Number of projects completed but pending further investigation (decisions deferred): 9.5
   - Number of projects in process: 12

2) Implementation
   - Number of projects implemented: 31.5
     • Number of numerical modeling related projects implemented by EMC/NCO: 10
     • Number of projects implemented by NHC: 21.5
   - Number of projects accepted but not yet fully implemented by NHC: 4

Note:
• 1) Implementation is defined when a project is completed, accepted, and the technique installed on NCEP/NCO or NHC operational systems and runs on operational time frame.
• Some techniques were “implemented” on JHT platform for testing.
Highlights of 4th Round Completed Projects

Sea Spray Parameterization – Bao/Fairall

Visualization Tool & SFMR – Carswell/Uhlhorn

Coupled TC-Wave-Ocean - Ginis

TC Dressing – Hansen
Factors Considered in NHC Decisions on Operational Implementation

- **Forecast or Analysis Benefit**: expected improvement in operational forecast and/or analysis accuracy
- **Efficiency**: adherence to forecaster time constraints and ease of use needs
- **Compatibility**: IT compatibility with operational hardware, software, data, communications, etc.
- **Sustainability**: availability of resources to operate, upgrade, and/or provide support
## 2009-2011 Major Activities

### 5th Round Project Focus Areas

<table>
<thead>
<tr>
<th>Primary Area of Focus</th>
<th># of Projects</th>
</tr>
</thead>
<tbody>
<tr>
<td>Improvements to dynamical models (for track, intensity, and precipitation forecasts)</td>
<td>5</td>
</tr>
<tr>
<td>Statistical intensity forecast guidance</td>
<td>3</td>
</tr>
<tr>
<td>Enhancements to observed data, assimilation</td>
<td>1</td>
</tr>
<tr>
<td>Tropical cyclone structure/wind/wave distribution</td>
<td>2</td>
</tr>
<tr>
<td>Enhancements to operational environment</td>
<td>1</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>12</strong></td>
</tr>
</tbody>
</table>
Challenges for 2010 and 2011

• **Implement newly accepted projects (NHC)**
  – JHT final review/reports to NHC Director
  – NHC Director makes implementation decision
  – Staff at NHC works to implement accepted projects

• **Test and evaluation (with NHC & EMC)**
  – Prepare real-time testing & evaluation for 5\textsuperscript{th} round projects
  – Set up necessary software code and data flow

• **Prepare for 6\textsuperscript{th} round (FY11) projects**
  – Funding announcement – July 2010
  – LOIs (30 received/reviewed) – August 2010
  – Full Proposals (23 received/being reviewed) – Oct 2010
  – Funding Decisions – March 2011
  – Projects Start – August 2011
NHC’s Visiting Scientist Program

Bring in Researchers and Outside Forecasters Annually
Visit During the Peak (Aug-Oct) of the Season
Learn About Operational Tools, Resources, & Constraints
NHC Forecasters Exposed to New Ideas & Methods
Funded through Hurricane Forecast Improvement Prog.
Acknowledgements

- JHT Steering Committee
- Shirley Murillo, JHT Admin. Asst.
- Chris Landsea, JHT Admin. Asst.
- Jose Salazar, JHT meteorologist/programmer
- NHC and EMC forecaster and points of contact
- NHC/Technical Support Branch staff
- JHT principal investigators and other funded participants
- John Gaynor/Roger Pierce (USWRP)
- NHC admin staff
Joint Hurricane Testbed (JHT) 2010 Update

Transition from Research to Operations

Jiann-Gwo Jiing
Chief, Technical Support Branch, NHC
JHT Director

Shirley Murillo
NOAA/HRD

Chris Landsea
NHC

NOAA Hurricane Conference
30 November, 2010