

**2013 Tropical Cyclone Research Forum**  
*Tropical Cyclone Research: Our Vision for the Future*

**AGENDA**

**DAY 1 - Tuesday, March 5, 2013**

7:00 AM Registration (7:00 AM-12:30 PM)

**Opening Session**

8:00 AM	Conference Opening	Mr. Samuel P. Williamson Federal Coordinator for Meteorology
	Welcoming Remarks	Dr. Louis Uccellini, Director, National Weather Service
	Keynote Address	Congressman Chaka Fattah, Ranking Member of the Subcommittee on Commerce, Justice, Science and related agencies (CJS)
	Invited Comments	Acting Secretary of Commerce Rebecca Blank (invited)
	Setting the Stage	Mr. Samuel P. Williamson Federal Coordinator for Meteorology
	<b>Panel Session: <i>The Emergency Response to Hurricane Sandy</i></b>  <b>Moderator:</b> Mr. Bryan Norcross, The Weather Channel Hurricane Specialist  <b>Panelists:</b> - Captain Thomas Scardino, Executive Officer, Emergency Management Section, New Jersey Homeland Security Branch - Mr. Jerome M. Hauer, Commissioner of the Division of Homeland Security and Emergency Services, New York State Division of Homeland Security and Emergency Services  <b>Discussion and Q&amp;A</b>	

9:30 AM Morning Break (9:30-10:00 AM)

**Session 1: Tropical Cyclone Research: Federal Agency Overview**

10:00 AM	Introduction of Panel Moderator	Dr. Paul D. Try, Senior Vice President Science and Technology Corporation
	<b>Senior Leader Panel: <i>Tropical Cyclone Research: The View from the Top</i></b>  <b>Moderator:</b> John D. Murphy, Director, Office of Science and Technology, National Weather Service  <b>Panelists:</b> - Dr. Jack Kaye, Associate Director and Research and Analysis Lead, Earth Science Division, National Aeronautics and Space Administration - Dr. Ronald Ferek, Program Officer, Marine Meteorology Program, Office of Naval Research - Dr. Frank Marks, Jr., Director, NOAA's Hurricane Research Division - Dr. Alexander E. (Sandy) MacDonald, Director of NOAA's Earth System Research Laboratory and Deputy Assistant Administrator for Research Laboratories and Cooperative Institutes - Dr. Michael C. Morgan, Division Director of Atmospheric and Geospace Sciences, National Science Foundation  <b>Discussion and Q&amp;A</b>	

12:00 PM Lunch on your own (12:00- 1:00 PM)

**Afternoon Coordinator: Col Gary Kubat (OFCM/USAF)**

**Session 2: Working Group for Tropical Cyclone Research**

Session Leaders Dr. Frank Marks, Co-Chair WG/TCR and Director, Hurricane Research Division (NOAA/AOML/HRD) Dr. Ronald Ferek, Co-Chair WG/TCR and Program Officer, Marine Meteorology Program (ONR)		
1:00 PM (S2-01)	Comparison of the 2010 and 2012 Snapshots of Tropical Cyclone Research and Development	Frank Marks (AOML/HRD) and Ronald Ferek (ONR)
1:15 PM	Discussion and Q&A	

**Session 3a: The Navy's Model Development and Improvement Program/Hurricane Forecast Improvement Program (HFIP): Supporting Talks**

Session Leaders Dr. Ron Ferek (ONR) and Dr. Frank Marks (AOML/HRD)		
1:30 PM (S3a-01)	The Hurricane Forecast Improvement Project: Recent Operational Implementation	<i>Bob Gall</i> (NWS), Fred Toepfer (NWS), Frank Marks (AOML/HRD), and Ed Rappaport (NHC)
1:45 PM (S3a-02)	Recent COAMPS-TC Development and Real-Time Tests	<i>James D. Doyle</i> (NRL/Monterey), R. Hodur (SAIC), S. Chen, E. Hendricks, T. Holt, H. Jin, Y. Jin, J. Moskaitis, M. Peng, A. Reinecke, K. Sashegyi, J. Schmidt, and S. Wang (NRL/Monterey)
2:00 PM (S3a-03)	NASA's Hurricane and Severe Storm Sentinel (HS3): Results from The 2012 Deployment and Plans for 2013	<i>Scott A. Braun</i> and Paul A. Newman (NASA/GSFC)
2:15 PM (S3a-04)	Improving the Assimilation of Multiple and Integrated High-Resolution Satellite Datasets in Mesoscale Models Of Tropical Cyclones	Chris Velden (CIMSS/Univ. of Wisconsin) and <i>Sharan Majumdar</i> (RSMAS/Univ. of Miami)
2:30 PM (S3a-05)	The Basin-Scale HWRF: Looking Beyond the 10-M Wind Speed for Improved Storm Predictions	<i>Sundaraman G. Gopalakrishnan</i> (AOML/HRD), Vijay Tallapragada (NCEP/EMC), Xuejin Zhang (CIMAS), Frank Marks, Jr., and Robert Atlas (AOML/HRD)
2:45 PM	Discussion and Q&A	

3:00 PM Afternoon Break (3:00-3:30 PM)

**Session 3b: Earth System Predication Capability (ESPC)/Next-Generation Suite of Models: Supporting Talks**

Session Leader Dr. Alexander E. (Sandy) MacDonald (OAR/ERSL)		
3:30 PM (S3b-01)	Earth System Prediction Capability Interagency Project	<i>Dan Eleuterio</i> (ONR) and Jessie C. Carman (NOAA/OAR)
3:40 PM (S3b-02)	Medium Range Global Weather Prediction Research at NCEP	<i>Bill Lapenta</i> and John Derber (NWS/NCEP)
3:50 PM (S3b-03)	Next-Generation Global Weather Prediction Research at ERSI	<i>Stan Benjamin</i> and Jin Luen Lee (NOAA/ERSI)
4:00 PM (S3b-04)	Global Modeling at GFDL	<i>Shian-Jiann Lin</i> (NOAA/GFDL)
4:10 PM (S3b-05)	Next-Generation Global Weather Prediction Research in the U.S. Navy	<i>James D. Doyle</i> (NRL/Monterey), Frank Giraldo (NPS) and Sasa Gabersek (NRL/Monterey)
4:20 PM (S3b-06)	Next-Generation Global Weather Prediction Research at NASA GMAO	<i>Bill Putman</i> and Michele Rienecker (NASA)
4:30 PM	Discussion and Q&A	

5:15 PM One Minute Poster Previews (Coordinator: Keith Blackwell (University of South Alabama))

5:30 PM Poster Session/Ice Breaker (5:30-7:00 PM)  
Location – (all posters are listed at the end of this agenda)

**DAY 2 - Wednesday, March 6, 2013**

**Morning Coordinator: Floyd Hauth (OFCM/STC)**

8:00 AM Opening/Administrative Remarks

**Session 3c: NSF Program Initiatives : Supporting Talks**

Session Leader: Dr. Michael C. Morgan (NSF)		
8:05 AM (S3c-01)	Predictability of Tropical Cyclone Intensity Change Using Ensembles	<i>Gregory J. Hakim</i> (University of Washington)
8:20 AM (S3c-02)	The Relative Contribution of Atmospheric and Oceanic Uncertainty in TC Intensity Forecasts	<i>Ryan Torn</i> (University at Albany-SUNY), Chris Davis and Chris Snyder (NCAR)
8:35 AM (S3c-03)	Probabilistic Verification of Ensemble Forecasts of Tropical Cyclogenesis	<i>Sharan Majumdar</i> (RSMAS/University of Miami) and Ryan Torn (University at Albany, SUNY)

8:50 AM (S3c-04)	The Impact of Ensemble-Based Data Assimilation on the Predictability of Landfalling Hurricanes	<i>Zhaoxia Pu</i> and Hailing Zhang (University of Utah)
9:05 AM (S3c-05)	Data-enabled Science: Challenges and Opportunities	<i>Mohan Ramamurthy</i> (UCAR/Unidata)
9:20 PM	Discussion and Q&A	

9:35 AM Morning Break (9:35-10:00 AM)

#### Session 4: The 2012 Tropical Cyclone Season in Review

Session Leader Bob Dumont (OFCM/STC)		
10:00 AM (S4-01)	53rd Weather Reconnaissance Squadron 2012 Hurricane Season Reconnaissance Summary	<i>Lt Col Jonathan Talbot</i> (USAFR/53 WRS)
10:15 AM (S4-02)	NOAA Aircraft Operations Center (AOC) 2012 Seasonal Summary and Future Plans	<i>Jim McFadden</i> (NOAA/AOC)
10:30 AM (S4-03)	Targeted Observations for Improving Numerical Weather Prediction: Review and Recommendations	<i>Sharan Majumdar</i> (RSMAS/University of Miami)
10:45 AM (S4-04)	Review of the 2012 Central Pacific Tropical Cyclone Season and Preliminary Verification	<i>Tom Evans</i> (NWS/CPHC)
11:00 AM (S4-05)	An Overview of Joint Typhoon Warning Center Tropical Cyclone Forecast Improvement Focus	<i>Brian R. Strahl</i> (JTWC)

#### Session 5a: Joint Hurricane Testbed Project Updates, Part 1

Session Leaders Vijay Tallapragada (NCEP/EMC) and John Cortinas (NOAA/OAR)		
11:15 AM (S5a-01)	An Update on The Joint Hurricane Testbed (JHT)	<i>Jiann-Gwo Jiing</i> , Chris Landsea, and Shirley Murillo (JHT)
11:30 AM (S5a-02)	Improved SFMR Surface Wind Measurements in Intense Rain Conditions	<i>Eric Uhlhorn</i> (NOAA/OAR/AOML) and Brad Klotz (CIMAS/Univ. of Miami)
11:45 AM (S5a-03)	Improved Automation and Performance of VORTRAC Intensity Guidance	<i>Wen-Chau Lee</i> (NCAR), Michael Bell (Univ. of Hawaii), and Paul Harasti, (NRL Monterey)
12:00 PM (S5a-04)	Development of a Real-Time Automated Tropical Cyclone Surface Wind Analysis: A Year-2 Joint Hurricane Testbed Project Update	<i>John A. Knaff</i> (NESDIS), Renate Brummer (CIRA/CSU), Mark DeMaria (NESDIS), and Chris Landsea, Michael Brennan, Robbie Berg, and Jessica Schauer (NHC)

12:15 PM Lunch on your own (12:15- 1:00 PM)

#### Afternoon Coordinator: Daniel Melendez (OFCM/NWS)

#### Session 5b: Joint Hurricane Testbed Project Updates, Part 2

Session Leader Vijay Tallapragada (NCEP/EMC) and John Cortinas (NOAA/OAR)		
1:00 PM (S5b-01)	Development of a Probabilistic Tropical Cyclone Genesis Prediction Scheme	<i>Jason Dunion</i> (UM/CIMAS, AOML), John Kaplan (NOAA/OAR/AOML), Andrea Schumacher (CSU/CIRA), Joshua Cossuth (FSU/COAPS), and Mark DeMaria (NESDIS)
1:15 PM (S5b-02)	Upgrades to the Operational GFDL/GFDN Hurricane Model Planned for 2013	<i>Morris A. Bender</i> , Timothy Marchok (NOAA/GFDL), Biju Thomas and Isaac Ginis (University of Rhode Island) and Robert Tuleya (CCPO/Old Dominion University)
1:30 PM (S5b-03)	Advancing HWRF and GFDL/GFDN Prediction Systems through New and Enhanced Physics of the Air-Sea-Wave Coupling Planned for 2013	<i>Isaac Ginis</i> , Richard Yablonsky, Biju Thomas (University of Rhode Island), Vijay Tallapragada, Hendrik Tolman (NCEP), and Morris Bender (GFDL)
1:45 PM (S5b-04)	Validation of HWRF Forecasts with Satellite Observations	<i>Tomislava Vukicevic</i> (NOAA/OAR/AOML) and Tom Greenwald (Univ. of Wisconsin/CIMSS)
2:00 PM (S5b-05)	Improvement to the SHIPS Rapid Intensification Index: A Year-2 JHT Project Update	<i>John Kaplan</i> (NOAA/AOML), Christopher M. Rozoff (CIMSS), Charles R. Sampson (NRL), Jim Kossin (NCDC), Chris Velden (CIMSS), and Mark DeMaria (NESDIS)
2:15 PM (S5b-06)	Improvements in Statistical Tropical Cyclone Forecast Models: A Year 2 Joint Hurricane Testbed Project Update	<i>Mark DeMaria</i> (NOAA/NESDIS), Andrea Schumacher (CIRA/CSU), John A. Knaff (NOAA/NESDIS), and Renate Brummer (CIRA/CSU)

2:30 PM (S5b-07)	Enhancement of SHIPS-RI Index using Satellite 37 GHz Microwave Ring Pattern	<i>Haiyan Jiang</i> (Florida Intl Univ.), Margie Kieper and Tie Yuan (FIU), Edward J. Zipser (Univ. of Utah), and John Kaplan (HRD)
2:45 PM (S5b-08)	A New Secondary Eyewall Formation Index; Transition to Operations and Quantification of Associated Hurricane Intensity and Structure Changes: A Joint Hurricane Testbed Project	<i>Jim Kossin</i> (NOAA/NCDC) and Matt Sitkowski, Will Lewis, and Chris Rozoff (CIMSS)

3:00 PM      Afternoon Break (3:00-3:30 PM)

#### **Session 6: Tropical Cyclone Model Development and Technology Transfer**

Session Leaders Dave McCarren (Navy/CNMOC) and Michael Farrar (NWS/OST)		
3:30 PM (S6-01)	Further Advancements to the NCEP Operational HWRF Modeling System for 2013 and Beyond	<i>Vijay Tallapragada</i> (NCEP/EMC)
3:45 PM (S6-02)	Application and Improvements to COAMPS-TC	<i>Richard M. Hodur</i> (SAIC/Innovative Employee Solutions), J. Doyle, E. Hendricks, Y. Jin, J. Moskaitis, K. Sashegyi, and J. Schmidt (NRL/Monterey)
4:00 PM (S6-03)	Evaluation of Experimental Models for Tropical Cyclone Forecasting in Support of the NOAA Hurricane Forecast Improvement Project (HFIP)	<i>Barbara G. Brown</i> , Louisa Nance, Paul A. Kucera, and Christopher L. Williams (NCAR)
4:15 PM (S6-04)	Improved Telescopic Nesting and its Effects on Hurricane Forecasting	<i>Samuel Trahan</i> (I.M. Systems Group/NCEP), Young Kwon (EMC/IMSG), Qingfu Liu (EMC) Xuejin Zhang (UM/CIMAS), Hui-Ya Chuang (EMC), Dave Zelinsky (NHC/SRG), Greg Thompson (NCAR), Shaowu Bao (ESRL) Ligia Bernardet (ESRL), Vijay Tallapragada (EMC), Brad Ferrier (EMC/IMSG)
4:30 PM (S6-05)	Potential Upgrades for the Radiation and Boundary Layer Physics in the Operational HWRF Model	<i>Young Kwon</i> (EMC/IMSG), Chanh Kieu, Weiguo Wang, Sam Trahan, Qingfu Liu, Zhan Zhang, Vijay Tallapragada (EMC) and Jun Zhang (HRD)
4:45 PM (S6-06)	Evaluation of the Ocean Response in HWRF: How Changes in the Atmosphere-Ocean Fluxes Affect Forecast Skill	<i>Ligia Bernardet</i> (NOAA/ESRL), Eric Uhlhorn (HRD), Shaowu Bao (NOAA/ESRL), Joe Cione (HRD)
5:00 PM (S6-07)	Further Development of a Statistical Ensemble for Tropical Cyclone Intensity Prediction	<i>Kate D. Musgrave</i> (CIRA/CSU), Mark DeMaria (NESDIS), Brian D. McNoldy (Univ. of Miami), Yi Jin (NRL Monterey), and Michael Fiorino (ESRL)
5:15 PM (S6-08)	Extended-range (5-30 day) Forecasts of Tropical Cyclones with the ECMWF Ensemble: Atlantic during HS3 Field Experiment	<i>Russell L. Elsberry</i> , Hsiao-Chung Tsai, Mary S. Jordan (Naval Postgraduate School) and Fredric Vitart (ECMWF, Shinfield Park, England)

#### **Forum Banquet**

6:00 PM      Dinner

6:45 PM      Hagemeyer Award Presentation

### **DAY 3 - Thursday, March 7, 2013**

**Morning Coordinator: Ms. Susan Callis (STC)**

8:00 AM      Opening/Administrative Remarks

#### **Session 7: Observations and Observing Strategies for Tropical Cyclones and their Environment**

Session Leaders Scott Braun (NASA/GSFC) and Svetla Hristova-Veleva (NASA/JPL)		
8:05 AM (S7-01)	The 2012 Satellite Proving Ground at the National Hurricane Center	<i>Michael Folmer</i> (UM/CICS) and Jack Beven, Michael Brennan, Hugh Cobb, Mark DeMaria, John Knaff, Christopher Velden, Jason Dunion, Gary Jedlovec, Kevin Fuell
8:20 AM (S7-02)	Computing Deep-Tropospheric Vertical Wind Shear Analyses for TC Applications: Does the Methodology Matter?	<i>Christopher S. Velden</i> and John Sears (University of Wisconsin-Cooperative Institute for Meteorological Satellite Studies (CIMSS))

8:35 AM (S7-03)	Outflow Layer Structure in Hurricanes Leslie And Nadine Revealed by Dropsondes Deployed from NASA Global Hawk UAV Aircraft during the 2012 Hurricane and Severe Storms Sentinel (HS3) Campaign: A New TC Observational Strategy	<i>Peter G. Black</i> (SAIC/NRL Monterey), Jon Moskaitis, James Doyle, Chris Velden, and Scott Braun
8:50 AM (S7-04)	HIWRAP Global Hawk Status and Future Plans	<i>Gerald. Heymsfield</i> (NASA/GSFC) and S. Guimond (NASA ORAU), L. Li and M. McLinden (NASA GSFC), J. Carswell (Remote Sensing Solutions), and L. Tian (UMBC GEST)
9:05 AM (S7-05)	Retrievals of Wind and Rain Rate from Combined Measurements of Up-Looking and Down-Looking SFMR(s)	Mark Goodberlet and <i>Ivan PopStefanija</i> (ProSensing)
9:20 AM (S7-06)	Implementation of Upper-Ocean Temperature Measurements on Operational Hurricane Reconnaissance: An Update on the AXBT Demonstration Project	<i>Elizabeth R. Sanabia</i> and Bradford S. Barrett (USNA), Peter Black (SAIC/NRL Monterey), Sue Chen and James Cummings (NRL Monterey)
9:35 AM (S7-07)	Observations of Upwelling Processes during Tropical Storm Isaac	Benjamin Jaime, <i>Lynn K. Shay</i> , Jodi Brewster, Ryan Schuster (RSMAS/Univ. of Miami) and Mark Powell (AOML/HRD)
9:50 AM (S7-08)	Progressing toward a Geostationary Microwave Sounder Mission	<i>Bjorn Lambrigtsen</i> (NASA/JPL)

10:05 AM Morning Break (10:05-10:30 AM)

#### Session 8: Improvements in Tropical Cyclone Forecast and Warning Products and Services

Session Leaders Tim McClung (NWS/OST) and Jim Goerss (NRL/Monterey)		
10:30 AM (S8-01)	COASTAL Act Requirements for Tropical Cyclone Post-Storm Assessments and Response by NOAA and Interagency Partners	<i>Stephen Lord</i> (NWS), Michael Bilder (NWS), Mark Powell (OAR/AOML), Jesse Feyen (NOS), Andre Westhuysen (NWS/EMC), and Tim Owen (NESDIS/NCDC)
10:45 AM (S8-02)	Using USACE-ERDC's Coastal Storm Modeling System in Support of Hurricane Sandy Operations	<i>Chris Massey</i> (USACE-ERDC-CHL)
11:00 AM (S8-03)	USGS Monitoring of Storm-Tide for Hurricanes Isaac and Sandy	<i>Robert R. Mason</i> , Benton D. McGee, and Brian E. McCallum (USGS)
11:15 AM (S8-04)	Improvements to the CO-OPS Storm QuickLook Product for Real-Time Storm Surge Monitoring for the 2014 Hurricane Season	<i>Paul Fanelli</i> (NOAA/NOS/Center for Operational Oceanographic Products and Services)
11:30 AM (S8-05)	Use of a Modified SHIPS Algorithm for Hurricane Intensity Forecasts	<i>T.N. Krishnamurti</i> and Amit Bhardwaj (Florida State University)
11:45 AM (S8-06)	Impact of New Predictors on Corrected Consensus TC Track Forecast Error	<i>James S. Goerss</i> (Innovative Employee Solutions/NRL/Monterey)
12:00 PM (S8-07)	Are Atlantic Basin Tropical Cyclone Intensity Forecasts Improving?	<i>J. R. Moskaitis</i> (NRL/ Monterey)
12:15 PM (S8-08)	CLIQR: A Climatological Analog Matcher to Ongoing Tropical Cyclones	<i>David Roth</i> (NWS/NCEP/HPC)

12:30 PM Lunch on your own (12:30 PM - 1:30 PM)

#### Afternoon Coordinator: Bob Dumont (OFCM/STC)

1:30 PM	Collaborative Decision Making: Connecting Agencies (Federal & State) and the Private Sector for Improved Situational Awareness, Coordination, and Response to Save Lives and Property	<i>Dave Jones</i> , Founder, President & CEO, StormCenter Communications, Inc.
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#### Session 9: Social Science Applications to the Tropical Cyclone Forecast and Warning Notification Problem

Session Moderators Ms. Jennifer Moore Sprague (NWS) and Ms. Tracy Rouleau (NWS)		
1:45 PM (S9-01)	Supporting the Integration of Physical and Social Science as it relates to the NOAA Hurricane Forecast Improvement Project (HFIP)	<i>Jennifer Moore Sprague</i> (NWS), B. Morrow, J.K. Lazo, J. Rhome, R. Berg, L. Nadeau, and E. Fago

2:00 PM (S9-02)	Utilizing Input from Emergency Managers, the Media, the Public and Local NWS Meteorologists to Better Communicate Surge and Other Storm Hazards	<i>Betty Hearn Morrow</i> ( SocResearch, Miami, FL), J. K. Lazo, J. Rhome, R. Berg, L. Nadeau, and E. Fago
2:15 PM (S9-03)	Communication of Hurricane Storm Surge Threat: A Mixed-Method Analysis	<i>Kathleen Sherman-Morris</i> (Mississippi State University)
2:30 PM (S9-04)	Evaluation of the NC-CERA Storm Surge and Wave Visualization Tool by Emergency Managers	<i>Jessica L. Losego</i> (Institute for the Environment, University of North Carolina)
2:45 PM	Discussion and Q&A	

**Final Plenary Session Coordinator: Dr. Paul D. Try (OFCM/STC)**

Session Moderator Colonel John Egentowich Air Force Director of Weather		
3:15 PM	WG/HWSOR: Action Item Review	Dr. Edward Rappaport (NCEP/NHC) Chairperson, WG/HWSOR
3:30 PM	Conference Wrap-Up	<ul style="list-style-type: none"> <li>- Dr. Michael C. Morgan, NSF</li> <li>- Dr. Alexander E. (Sandy) MacDonald, NOAA/ESRL</li> <li>- Dr. Ronald Ferek, ONR</li> <li>- Dr. Frank Marks, Jr., NOAA/HRD</li> </ul>
4:15PM	Final Wrap-up	Mr. Samuel P. Williamson Federal Coordinator for Meteorology
4:30 PM	Adjourn	

**POSTERS FOR THE TROPICAL CYCLONE RESEARCH FORUM****Poster Session: Tuesday, March 5, 2013, 5:30-7:00 PM (soft drinks and hors d'oeuvres)**

P01	A Convective Band Within the Inner Core of Hurricane Isaac at Landfall: Is This An Inner Eyewall or Just a Transient Banding Feature?	<i>Keith G. Blackwell</i> (University of South Alabama)
P02	A Highly Configurable Vortex Initialization Method for Tropical Cyclones	Brian McNoldy, David Nolan, and <i>Sharan Majumdar</i> (RSMAS/University of Miami) Eric Rappin (Western Kentucky Univ.)
P03	Quantifying Predictability of Environmental Parameters associated with Tropical Cyclogenesis	William Komaromi, Jonathan Labriola, and <i>Sharan Majumdar</i> (RSMAS/University of Miami)
P04	Ensemble Kalman Assimilation of Global-Hawk-based Data from Tropical Cyclones	<i>Jason Sippel</i> (NASA/GSFC)
P05	Azimuthal Variation in the Eyewall's Surface-Wind Speed May Increase Maximum Potential Intensity	<i>Owen Kelley</i> (NASA/GSFC) and Daniel Meléndez (NWS/OST)
P06	Tropical Cyclone Inner-Core Structure from Downward-Pointing, Conically-Scanning Airborne Doppler Radar: IWRAP and HIWRAP	<i>Stephen Guimond</i> (Univ. of Maryland/ESSIC and NASA/GSFC), Lin Tian (Morgan State Univ. and NASA/GSFC), Gerald Heymsfield (NASA/GSFC), and Stephen Frasier (Univ. of Massachusetts)
P07	Aerosols-Cloud-Microphysics Interactions in Tropical Cyclones using Aircraft Observations and the WRF-ARW Model	<i>Yaitza Luna-Cruz</i> (Howard University), Andrew J. Heymsfield, Gregory Thompson, Gregory Jenkins, Trude Eidhammer, and Aaron Bansemer
P08	The Impact of Ocean Heat Content Observations Collected during Operational Weather Reconnaissance Flights on SHIPS Intensity Forecasts in Hurricanes Ernesto and Isaac (2012)	Lauren McCann, Mary Cox, and Elizabeth Sanabia (USNA)
P09	Development of a new Tropical Cyclone Verification Toolkit (MET-TC)	<i>Kathryn Newman</i> , John Halley Gotway, Tressa Fowler, Paul Kucera, Barbara Brown, and Louisa Nance (NCAR)
P10	A Developmental Framework for Improving Hurricane Model Physical Parameterizations Using Aircraft Observations	Jun Zhang (CIMAS/HRD), <i>Sundararaman Gopalakrishnan</i> (HRD), Frank Marks (HRD), Robert Rogers (HRD), and Vijay Tallapragada (EMC)
P11	The 48-hour NESDIS Tropical Cyclone Formation Probability Product	<i>Andrea B. Schumacher</i> (CIRA/CSU) and Mark DeMaria (NESDIS/STAR)
P12	The JPL Tropical Cyclone Information System – A Tool for Hurricane Research, Model Evaluation and Satellite Algorithm Development: Current State and Ongoing Development	<i>Svetla. Hristova-Veleva</i> , Z. Haddad, B. Knosp, B. Lambriksen, P. P. Li, N. Niamsuwan, W. L. Poulsen, T.P. Shen, S. Tanelli, F. J. Turk, Q. A. Vu (JPL)

<b>POSTERS FOR THE TROPICAL CYCLONE RESEARCH FORUM</b>		
<b>Poster Session: Tuesday, March 5, 2013, 5:30-7:00 PM (<i>soft drinks and hors d'oeuvres</i>)</b>		
P13	Community Support and Testing of the Hurricane WRF Model at the Developmental Testbed Center	<i>Shaowu Bao</i> , Ligia Bernardet, and Timothy Brown (ESRL/CIRES) and Mrinal Biswas, Donald Stark, and Laurie Carson (NCAR)