



**2021 HFIP Annual Meeting  
November 15-18, 2021  
Virtual Meeting**

**Meeting Objectives**

The primary objective of this meeting is to discuss the overall progress and accomplishments made under HFIP, focussed on development of the next generation Hurricane Analysis and Forecast System (HAFS) outlined in the 2019 HFIP Strategic plan with potential future steps. The current state of operational hurricane modeling capabilities and challenges, forecasters' needs and activities supporting operations as well as the results from the 2021 hurricane season will also be discussed.

**Agenda Outline**

**Day 1 (Nov 15):** Programmatic Updates; Forecaster needs and activities supporting operations.

**Day 2 (Nov 16):** Updates from Current Operational Forecast; Special Session on 2021 challenging cases; SBES Session; Guest Talk.

**Day 3 (Nov 17):** HFIP supported external research Reports.

**Day 4 (Nov 18):** Real-time experiment results; Observations for HAFS; HAFS developments and Future steps.



## HFIP Annual Meeting Agenda

Day 1: Monday Nov 15, 2021

12 noon - 5 pm ET

Monday, November 15, 2021

**12:00 noon** Welcome Remarks (James Sims)

**12:10 pm - 1:40 pm: Programmatic updates and Plans (Chair: Vijay Tallapragada; Co-chair: S. Gopal)**  
*(13 mins Talk + 7 mins Q&A)*

12:10 pm HFIP Status and Plans (Frank Marks)

12:30 pm HFIP Programmatic Updates (Youngsun Jung)

12:50 pm Hurricane Supplemental Updates (James Sims)

1:20 pm RDHPCS/Cloud Computing updates from OCIO (Frank Indiviglio)

**1:40 pm - 5:00 pm: Forecaster needs and Activities Supporting Operations (Chair: Brian Zachry; Co-chair: Avichal Mehra)**

*(13 mins Talk + 7 mins Q&A)*

1:40 pm Current forecast capabilities - NHC verification (John Cangialosi)

2:00 pm NHC's analysis and forecasting challenges (Mike Brennan)

2:20 pm WPC rainfall forecast (Jim Nelson)

2:40 pm JTWC TC activity, forecast challenges, and priorities (Levi Cowan)

**3:00 pm** Break (30 mins)

**(Chair: Michael Brennan, Co-chair: Youngsun Jung)**

3:30 pm Verification of Rapid Intensification Metrics (James Franklin)

3:50 pm Operational applications including ensemble products (Brian Zachry)

4:10 pm Post Processing and Verification (PPAV) Team update (David Zelinsky)

4:30 pm Infrastructure: ATCF and AWIPS plans (David Zelinsky)

4:50 pm Operational storm surge modeling (Andrew Penny/Laura Alaka)

**5:10 pm** Adjourn



## HFIP Annual Meeting Agenda

Day 2: Tuesday Nov 16, 2021

12 noon - 5 pm ET

**Tuesday, November 16, 2021**

**12:00 pm - 1:00 pm: Updates on Current Operational Model (Chair: S. Gopal, Co-chair: Youngsun Jung)**  
*(13 mins Talk + 7 mins Q&A)*

- 12:00 pm Updates on Current Operational Regional Model Advances and plans (Avichal Mehra)
- 12:20 pm Updates on Global Model advances and plans (Vijay Tallapragada)
- 12:40 pm RDHPCS and Operational Computing activities and plans (Vijay Tallapragada)

**1:00 pm - 3:00 pm: Special session on 2021 Challenging Cases (Chairs: Vijay Tallapragada and Frank Marks)**

- 1:00 pm Overview of Modeling challenges
  - Issues identified by the forecasters (NHC/JTWC - Mike Brennan/Levi Cowan) (10 mins)
  - Issues identified by Modelers (EMC/HRD - Zhan Zhang/Gus Alaka) (10 mins)
- 1:20 pm Difficult TC Cases Working Group Presentation (Panelists: Jim Doyle; Linus Magnusson; Julian Heming; Sharan Majumdar; Mike Brennan; Jon Moskaitis; Will Komaromi; Vijay Tallapragada)
- 2:30 pm Panel/Audience Q&A.

**3:00 pm Break**

**3:30 pm - 4:30 pm: Social, Behavioral and Economic Science (SBES) Research (Chair: Frank Marks; Co-chair: Youngsun Jung)**

- 3:30 pm Status of Tropical Program (Jessica Schauer)
- 3:50 pm Early findings from the FY18 SBES Hurricane Supplemental Projects (Castle Williams, Gina Eosco, Jennifer Sprague-Hilderbrand, Valerie Were)
- 4:10 pm Quantifying the economic benefits of the hurricane forecast program (Renato Molina)

**4:30 pm - 4:50 pm: Guest Talk: Storm Surge Modeling at NOS (Saeed Moghimi)**

4:50 pm Wrap-up

**5:00 pm Adjourn**



## HFIP Annual Meeting Agenda

Day 3 (Nov 17, 2021)

12 pm - 5:00 pm ET

**Wednesday, November 17, 2021**

**12:00 pm - 1:40 pm: HFIP Funded (2018) External Research Reports (Chair: James Sims; Co-chair: Mike Brennan)**

*(13 mins Talk + 7 mins Q&A)*

12:00 pm Using Dynamically-Based Probabilistic Forecast Systems to Improve the NHC Wind Speed Products (Alan Brammer/Andrea Schumacher)

12:20 pm New Frameworks for Predicting Extreme Rapid Intensification (Chirs Rozoff)

12:40 pm Advanced DA Techniques for Satellite-Derived Atmos. Motion Vectors from GOES 16/17 in the HWRF (Agnes Lim)

1:00 pm Rapid Intensification Changes: Improving Sub-Grid Scale Model Parameterization and Microphysical-Dynamical Interaction (Ping Zhu)

1:20 pm Wrap-up

**1:40 pm Break (30 mins)**

**2:10 pm - 3:30 pm: HFIP Funded (NOFO) External Research Reports (Chair: Youngsun Jung; Co-chair: Zhan Zhang)**

*(13 mins Talk + 7 mins Q&A)*

2:10 pm Extending the Tropical Cyclone Genesis Index to Global Ensemble Forecasts (Alan Brammer)

2:30 pm Developing regional ocean modeling capabilities with MOM6 for use in the Unified Forecast System (Enrique Curchitser)

2:50 pm Application of Innovation Statistics to Diagnose Biases in the HAFS system (Ryan Torn)

3:10 pm Evaluating Initial Condition Perturbation Methods in the HWRF Ensemble Prediction System (Ryan Torn)

**3:30 pm - 5:00 pm: HFIP Supported External Research Reports (Chair: Avichal Mehra; Co-chair: S. Gopal)**

*(13 mins Talk + 7 mins Q&A)*

3:30 pm Ground-based Radar DA in HWRF Hybrid Ensemble-variational (Xuguang Wang)



- 3:50 pm FV3 Model and Ensemble-based DA for Convection-permitting Hurricane Analysis and Prediction (Xingchao Chen)
- 4:10 pm DTC Updates (Kathryn Newman)
- 4:30 pm Display and Diagnostics (Paul Kucera)
- 4: 50 pm Wrap-up
- 5:00 pm Adjourn**



## HFIP Annual Meeting Agenda

Day 4 (Nov 18, 2021)

12 noon - 5 pm ET

**12:00 pm - 1:15 pm: HFIP Real-time Experiment (Chair: Vijay Tallapragada; Co-chair: Frank Marks)**  
*(10 mins Talk + 5 mins Q&A)*

12:00 pm Results from HAFS v0.2A (Bin Liu)

12:15 pm Results from HAFS v0.2B (Andy Hazelton)

12:30 pm Results from HAFS v0.2D (Li Bi)

12:45 pm Results from HAFS v0.2E (Zhan Zhang)

1:00 pm Results from T-SHiELD (Morris Bender/Tim Marchok)

1:15 pm Results from GSL FV3 Experiments (Georg Grell)

**1:30 pm - 2:15 pm: Observations for HAFS (Chair: Avichal Mehra; Co-chair: Jason Sippel)**  
*(10 mins Talk + 5 mins Q&A)*

1:30 pm Advancing Prediction of Hurricanes Experiment (APHEX) (Jason Dunion)

1:45 pm 2021 Ocean observing collaboration (Gustavo Goni)

2:00 pm Extreme Events Ocean Observing Task Team (EEOOTT) (Cheyenne Stienbarger)

**2:15 pm Break (15 mins)**

**2:30 pm - 5:00 pm: Discussion on HAFS Development (Chairs: S. Gopal and Avichal Mehra)**  
*(13 mins Talk + 7 mins Q&A)*

2:30 pm HAFS configurations strategies and IOC (Zhan Zhang)

2:50 pm Grid and Nesting Developments (Xuejin Zhang)

3:10 pm Physics Development (Andy Hazelton/Chunxi Zhang)

3:30 pm DA Advancements and Use of observations (Jason Sippel/Zhan Zhang)

3:50 pm Coupling Strategies for HAFS (Avichal Mehra/Dan Rosen)

4:10 pm CAM FV3 testing (Curtis Alexander)



- 4:30 pm HAFS Code Management and Community Engagement (Evan Kalina/ Bin Liu)
- 4:50 pm Meeting Summary, Next Steps and Concluding Remarks (Frank Marks)**
- 5:00 pm Adjourn