UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration

OFFICE OF OCEANIC AND ATMOSPHERIC RESEARCH

National Severe Storms Laboratory
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April 15, 2022

Hazardous Weather Testbed Activities

The NOAA Hazardous Weather Testbed (HWT) at the National Weather Center (NWC) in Norman, Oklahoma, is seeking participants for *four* virtual experiments in summer/fall 2022. The HWT is a joint project of the National Weather Service Storm Prediction Center and the National Severe Storms Laboratory that provides a conceptual framework and physical space to foster collaboration between research and operations to test and evaluate emerging technologies and science. This year, we will be conducting the 2022 HWT activities ***virtually*** for ***27 weeks*** in total.

There will be ***nine*** primary projects in the HWT during 2022. The details of the Hazard Services - Threats-in-Motion, Brief Vulnerability Overview Tool, and Convective Outlook Innovations experiments are listed in the attachment.

Brief Vulnerability Overview Tool	Dec 6-10, Jan 10-14, Feb 28-Mar 4, Mar 7-11
Tiny Threats-in-Motion (TIM)	Jan 31-Feb 4, Feb 14-18
Probabilistic Hazard Information (PHI) Prototype	Apr 25-29, May 2-6, May 9-13
Spring Forecasting Experiment	May 2-6, May 9-13, May 16-20, May 23-27, May 31-Jun 3
Satellite Convective Applications	May 23-27, May 31-Jun 3 Jun 6-10, Jun 13-17
Hazard Services - Threats-in-Motion (HS-TIM)	Jul 11-15, Jul 18-22, Aug 15-19 **Applications due May 31**
End-User Decisions Over Time (EMs & Broadcasters)	Aug 8-9, Aug 10-11, Aug 15-16, Aug 17-18 **Applications due June 30**
Brief Vulnerability Overview Tool (Forecasters & EMs)	Sep 19-23, Oct 3-7 **Applications due August 8**
Convective Outlook Innovations (Forecasters & EMs)	Oct 11-13, Oct 18-20 **Applications due September 2**

Due to the ongoing COVID-19 pandemic, all 2022 HWT activities will take place virtually using online resources such as Google Meet and AWIPS in the Cloud. Each project-specific application form (found in the project details selection below) will require from each candidate:

a. Name and organization (WFO, region HQ, etc.)
b. Forecaster position
c. Prior HWT experience
d. Interest statement (one paragraph, 200 words max)
e. Weeks available

The interest statements should include your motivation for evaluating future warning and/or forecast systems in the HWT and demonstrate why you would be a good fit for a particular experiment. Participants may include WFO or Region HQ staff, and participants are not required to have had prior HWT experience. We are seeking diversity among regions, warning and forecast experience, and HWT experience.

Any questions about these experiments should be directed to the EWP Coordinator, **Kodi Berry (kodi.berry@noaa.gov)**.

See the table above for application deadlines for each experiment. Candidates will be selected shortly thereafter. Any questions or concerns about the application process should be directed to **Alan Gerard (alan.e.gerard@noaa.gov)**.

We desire enthusiastic people who are interested in improving NWS warning and/or forecast decision-making technology, products, and services. We would be happy to provide more information about the HWT activities if requested.

Sincerely,

Alan Gerard
Hazardous Weather Testbed, National Severe Storms Laboratory

Hazard Services Threats-in-Motion (HS-TIM)
Project Descriptions & Details

Apply here!
The deadline for applications is May 31, 2022. Candidates will be selected shortly thereafter.

WHEN – July 11-15, July 18-22, August 15-19

WHAT - The National Severe Storms Laboratory (NSSL), Global Systems Laboratory (GSL), and NWS Meteorological Development Laboratory (MDL) have been developing a prototype severe convective weather warning-scale tool for testing the early concepts of the Forecasting A Continuum of Environmental Threats (FACETs) initiative. One important concept is Threats-In-Motion (TIM), a proposed warning decision and dissemination approach that would enable the NWS to upgrade severe thunderstorm and tornado warnings from the current static polygon system to continuously-updating warning polygons that move with the storm. TIM capabilities have been developed using an experimental version of AWIPS-2 Hazard Services (HS), first tested in the HWT in 2019, and to be tested again during the summer of 2022. We will evaluate the software and concepts using archive data cases, and virtually using AWIPS cloud instances, so there is no requirement to travel to Norman, OK.

WHY - We hope to extend the dialog on FACETs and TIM as the concepts become closer to possible operational reality. In addition, we hope to collect the data necessary to make improvements to the HS software prior to a decision for operational implementation.

WHO - We would like geographic, experiential, and gender diversity in our forecaster pool. An interest in the evolution of forecast and warnings services is a must. Three forecasters will be chosen for each of the two weeks of the experiment. Completion of the Warning Decision Training Division's Radar Applications Course and some operational severe weather warning experience is desired.

For more information:
https://inside.nssl.noaa.gov/facets/2021/03/threats-in-motion/

Brief Vulnerability Overview Tool
Project Descriptions & Details

Apply here!

The deadline for applications is 8 August 2022. Candidates will be selected shortly thereafter.

WHEN – Sep 19-23, Oct 3-7

WHAT – FACETs — Forecasting a Continuum of Environmental Threats — is a model for a next-generation approach to integrating the newest meteorological innovations with a deeper understanding of societal needs and vulnerabilities. Next-generation guidance is critical for improving forecasts and warnings; however, there are significant challenges in transitioning these physical science advancements into societal outcomes that are responsive to core partner needs. This project applies and integrates relevant social and behavioral science methodologies to assess WFO forecasters' and end-users' abilities to assess, understand, and respond effectively to forecasts for convective weather hazards and a tool that enhances their awareness of vulnerabilities within their County Warning Area (CWA). This project will simulate end-to-end severe weather communication — SPC to WFO to EMs — through realistic experimental scenarios involving SPC and WFO forecasters and EMs. Participants will work through three time periods in each case. In the first two periods they will prepare and deliver decision-support briefings (24-48 hours, and 4-12 hours in advance of severe weather). In the third period for each case they will issue warnings and provide warning-related decision support.

WHY – This HWT experiment provides a pre-operational evaluation of the Brief Vulnerability Overview Tool and experimental forecast guidance generated by the Storm Prediction Center. Feedback from this evaluation will be used to understand risks and opportunities before the BVOT and SPC experimental product concepts are further developed for NWS offices nationwide.

WHO – All forecasters are welcome to apply for this experiment. We would like geographic, experiential, and general diversity in our forecaster pool. Completion of the Warning Decision Training Division’s Radar Applications Course and some operational severe weather warning and decision support experience are desired.

Convective Outlook Innovations
Project Descriptions & Details

Apply here!

The deadline for applications is 2 September 2022. Candidates will be selected shortly thereafter.

WHEN – October 11-13, October 18-20

WHAT – This experiment will include 20 forecasters from diverse WFOs who will complete communication and decision support exercises using the prototype convective outlook innovations. Facilitators will walk participants through multiple severe weather scenarios from days before the event down to the warning scale. During these activities, forecasters will be asked to create communication and decision support materials and then present those materials to evaluators. These evaluators will be made up of three EMs and three members of the public who have little weather knowledge. We will ask the evaluators to provide feedback to the forecaster participants and the researchers about the ease of use and usefulness of the communication materials, particularly as it relates to the new information provided by the convective outlook innovations. Simultaneously, the forecasters will be asked to think critically about what the innovations added (if anything) to their ability to communicate the day's risk. Surveys and focus group interviews will be used to elicit information about the benefits and challenges of communicating this new information with non-experts.

WHY – This HWT experiment will provide evaluation of convective outlook innovations before they are put into operations. Feedback will be used to iterate on the type of information and the display of information in the SPC convective outlook

WHO – All forecasters and emergency managers are welcome to apply for this experiment. We would like geographic, experiential, and general diversity in our participant pool.