



UNITED STATES DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration

OFFICE OF OCEANIC AND ATMOSPHERIC RESEARCH

National Severe Storms Laboratory  
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Norman, OK 73072

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## Hazardous Weather Testbed Activities

The NOAA Hazardous Weather Testbed (HWT) at the National Weather Center (NWC) in Norman, Oklahoma, is seeking participants for two virtual experiments in 2021/2022. The testbed 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 **21 weeks** in total.

There will be **six** primary projects in the HWT during 2022. This is the first of two calls for applications. The details of the Brief Vulnerability Overview Tool and Tiny Threats-in-Motion are listed in the attachment.

Brief Vulnerability Overview Tool	Dec 6-10, Jan 10-14, Feb 28-Mar 4, Mar 7-11 <b>Application Deadline: Nov 1</b>
Tiny Threats-in-Motion (TIM)	Jan 31-Feb 4, Feb 14-18 <b>Application Deadline: Dec 15</b>
Probabilistic Hazard Information (PHI) Prototype	Apr 18-22, Apr 25-29, May 2-6
Spring Forecasting Experiment	May 2-6, May 9-13, May 16-20, May 23-27, May 31-Jun 3
Satellite Convective Applications	May 16-20, May 23-27, Jun 6-10, Jun 13-17
Hazard Services - Threats-in-Motion (HS-TIM)	Summer 2022

\*Spring dates are subject to change.

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](mailto:kodi.berry@noaa.gov)).

**The deadlines for the first round of applications are November 1 and December 15, 2021.** 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](mailto: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

## **Brief Vulnerability Overview Tool Project Descriptions & Details**

[https://docs.google.com/forms/d/e/1FAIpQLSdlg-FNXTxu7acu6wcYoOuW5wYQldVPhrMsH24wBrV3vsixAQ/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSdlg-FNXTxu7acu6wcYoOuW5wYQldVPhrMsH24wBrV3vsixAQ/viewform?usp=sf_link)

The deadline for applications is 1 November 2021. Candidates will be selected shortly thereafter.

**WHEN** – December 6-10, January 10-14, February 28-March 4, March 7-11

**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.

## **Tiny Threats-in-Motion (Tiny TIM) Project Descriptions & Details**

[https://docs.google.com/forms/d/e/1FAIpQLSdiGjG2P24f3MjdMfgCRi3ZOgWY5O11-NRd6rhdOYVC5AZitA/viewform?usp=sf\\_link](https://docs.google.com/forms/d/e/1FAIpQLSdiGjG2P24f3MjdMfgCRi3ZOgWY5O11-NRd6rhdOYVC5AZitA/viewform?usp=sf_link)

The deadline for applications is December 15, 2021. Candidates will be selected shortly thereafter.

**WHEN** – January 31-February 4, February 14-18

**WHAT** - The Hazard Services (HS) software includes a convective severe weather warning perspective which is slated to replace the WarnGen capability in AWIPS. The National Severe Storms Laboratory (NSSL), Global Systems Laboratory, and NWS Meteorological Development Laboratory have been developing a new functionality within HS - Convective that will allow severe thunderstorm and tornado warnings to be extended in both area and time for long-tracked storm hazards expected to last beyond the length of the initial warning duration. Currently, when a warning is updated, the expiration time cannot be extended, and the warned area can only be reduced. If the storm is still severe at the end of the warning, a second warning must be issued. By contrast, the new functionality will allow a single warning, with subsequent updates, to be used to track an entire storm's lifecycle from beginning to end. This capability to extend warning time and area is the first step toward a Threats-In-Motion (TIM) concept, and is known as "Tiny TIM". We will be evaluating this new functionality within the HWT during the winter of 2022. We will evaluate the software design 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 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/>

[Tiny TIM blog on the FACETs VLab Page](#)