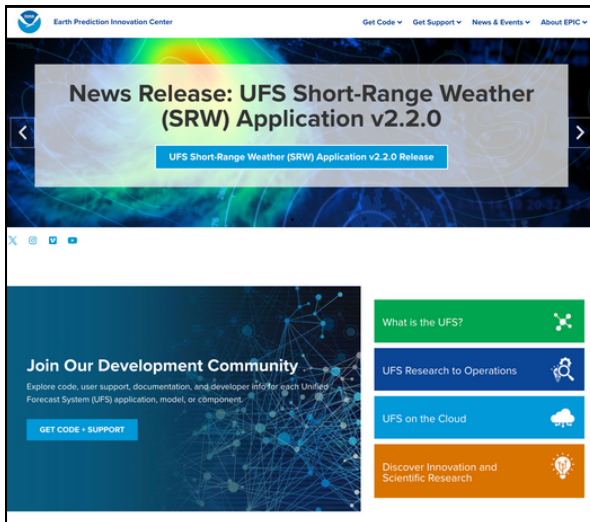# UFS Insights

A UFS Collaboration
Powered by EPIC

New Joint EPIC-UFS Website Launched

We heard your feedback! The EPIC and UFS teams are proud to present the launch of a redesigned landing page that combines our communities' web presence. The site is a step towards consolidating EPIC and UFS content in one place to better serve the weather modeling community, reflect our collaborative spirit, and improve user journeys. Stakeholders and community members can access a wealth of content that exemplifies "UFS collaboration powered by EPIC," our guiding slogan that reflects how EPIC and UFS work together to advance Earth system science.

Explore the new site

AGU Fall Meeting – Wide. Open. Science.

EPIC and the UFS took part in the American Geophysical Union Fall Meeting in December in San Francisco, CA and online. Team members made presentations at the NOAA booth and in community modeling sessions. Discussions focused on engaging with people from across the community and brainstorming how EPIC and the UFS can enhance the source system for numerical weather prediction.


Read more

Updated Short-Range Weather Application Released

EPIC and the UFS released the latest version of the Short-Range Weather (SRW) Application (version 2.2.0). This application is designed to improve short-range weather forecasts at regional scales anywhere on the globe and on timescales up to two days. It enables users to run an end-to-end forecast, from defining a model grid to generating graphical plots of the model forecast field output.

UFS Short-Range Weather Application code repository

NEWS AND INSIGHTS
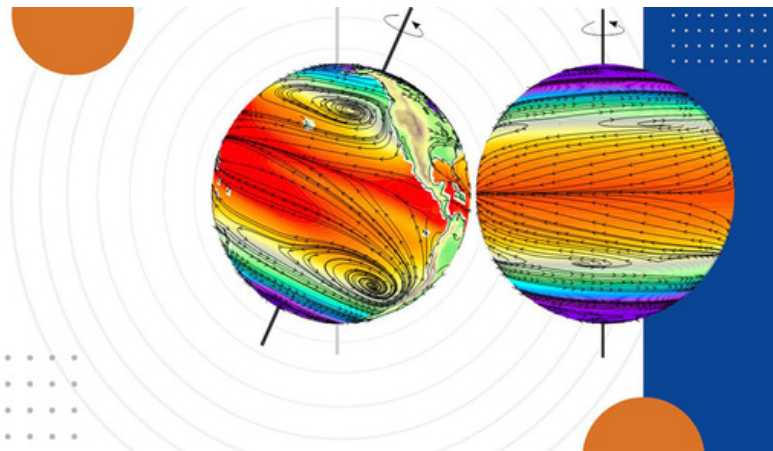
Fast-Tracking Research and Operational Improvements of the UFS

The Developmental Testbed Center has published a white paper outlining a long-term vision for hierarchical system development of the UFS. Supported by insights and collaboration from EPIC, the paper explores strategies to fast-track research and operational improvements.

Read more

UFS Webinar Series

UFS hosts a webinar series in collaboration with the National Weather Service Science and Technology Integration-Modeling Program Office. Talks share advances in science and technology in all aspects of the UFS, in both research and operational settings. We welcome speakers from the modeling community.
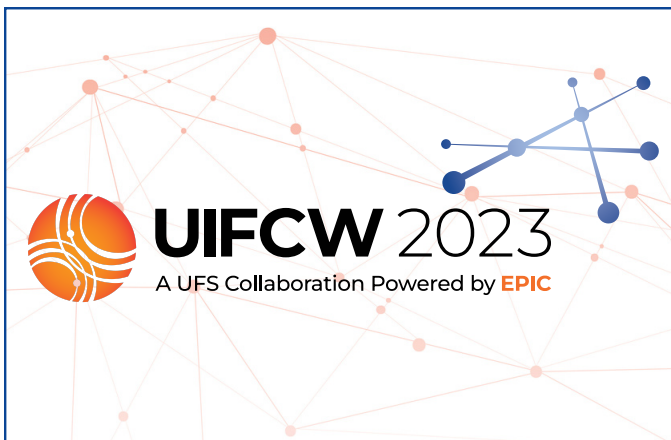
Past webinars
Subscribe to webinar announcements
Recommend a speaker or topic

IN THE SPOTLIGHT

A Path for Engaging Students

Last summer, Alekya Srinivasan, a senior at Penn State University, worked with the EPIC team as an intern to develop a UFS Student Engagement Plan. She helped evaluate tutorials on UFS applications and conducted outreach to gauge interest in the UFS from various atmospheric science and computer science academic programs. The plan highlights ways for the UFS to extend its work with students.

UFS Student Engagement Plan

2023 Forecasting Capabilities Workshop Report Out Now

The second annual Unifying Innovations in Forecasting Capabilities Workshop (UIFCW), hosted by EPIC and the UFS community in July 2023, brought together the weather community in an effort to accelerate contributions to the UFS. The report has now been released through NOAA.

Workshop report

AMS Annual Meeting – Living in a Changing Environment

EPIC hosted a hands-on short course on course this January 27, 2024 at the 104th American Meteorological Society Annual Meeting. The training was focused on how to run the UFS Short-Range Weather Application in the cloud.

Learn more

IN THE SPOTLIGHT

Congratulations to Ligia Bernardet

Ligia Bernardet, Chief of the Earth Prediction Advancement Division, has been awarded the Order of Sherman's Lagoon for her outstanding leadership and support for community modeling at NOAA. Ligia has been an enthusiastic advocate for EPIC and the UFS. She chairs the UFS Release Coordination and System Infrastructure Teams, advocates for best practices in community modeling infrastructure for the UFS, and leads the Common Community Physics Package, a model for community partnership. Join us in congratulating Ligia.

UPCOMING EVENTS
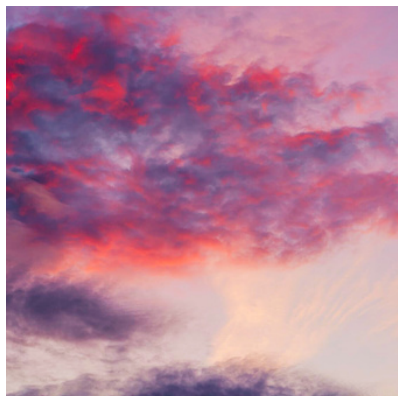
Seasonal to Subseasonal (S2S) Community Workshop
June 5-7, 2024, Boulder, CO

This community S2S workshop aims to increase collaboration across NOAA, other agencies, and the community to improve S2S prediction capabilities, with particular focus on the longstanding problem of early errors and biases. Topics will include tools for diagnosing errors such as artificial intelligence and machine learning, observations that can improve process understanding, model validation or initialization, the impact and limitations of model resolution, metrics that can address modeling and stakeholder needs, and Research-to-Operations/ Operations-to-Research infrastructure for NOAA-external collaborations. More details to come.
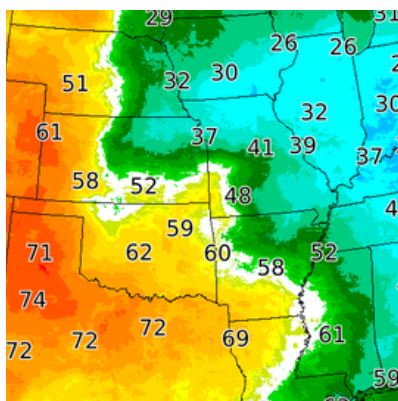

Annual UFS Physics Workshop
July 9-12, 2024, Norman, OK/online

This event will address the ongoing need to improve how convection is represented in the UFS. Discussions will cover the latest scientific advances from the convection parameterization research community and operational numerical prediction centers.

Event information

Unifying Innovations in Forecasting Capabilities Workshop
Summer 2024, Jackson, MS

The EPIC team is looking forward to hosting the third annual Unifying Innovations in Forecasting Capabilities Workshop (UIFCW) at Jackson State University from July 22 to 26, 2024. Submit suggestions for sessions or join our planning committee via the links below.

Submit a session idea
**Join the UIFCW planning committee**
Event information

GET CODE

UFS Land Data Assimilation System

EPIC and the UFS recently released the UFS Land Data Assimilation (DA) System v1.2.0. This release provides an update to the v1.1.0 release of May 2023, setting the stage for significant new capabilities in the Land DA System. The new release charts a path to unifying the Noah-MP land surface model code with the UFS Weather Model under a continuous-release paradigm, where updates are added at consistent intervals to improve the code and add capabilities.

UFS Land Data Assimilation System code repository
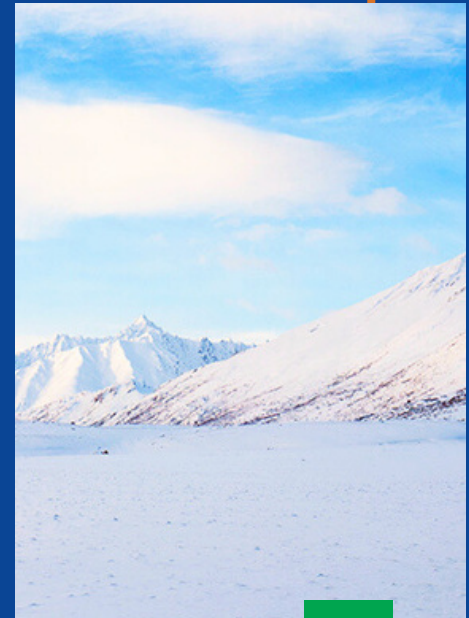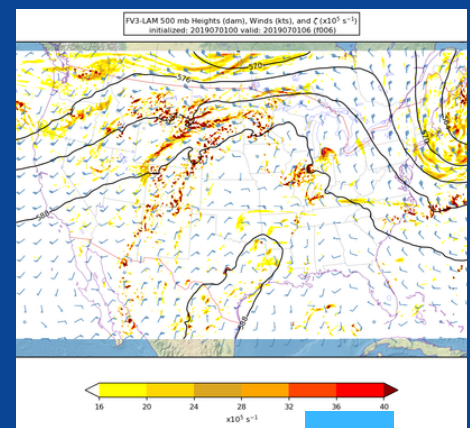

UFS Weather Model

The UFS Weather Model (WM) can be used for short- and medium-range research and operational forecasts. It can be run as an atmosphere-only model or as an atmospheric model coupled to components such as a wave or ocean model. Recently, the UFS WM has transitioned to use of spack-stack 1.5.1 modules and added platform support for Hercules, Gaea-C5, and Derecho machines.

UFS Weather Model code repository

Unified Post Processor

The Unified Post Processor (UPP) generates useful products from raw model output. Developed at the National Centers for Environmental Prediction, it is used operationally for several models and forms a key component of many UFS applications. Recent improvements to the UPP include the addition of continuous integration/continuous deployment (CI/CD) testing and the addition of Hercules as a supported platform.

UPP code repository

FV3-LAM 500 mb Heights (dam), Winds (kts), and ζ ($\times 10^5$ s^{-1})
initialized: 2019070100 valid: 2019070106 (f006)

UFS
UNIFIED FORECAST SYSTEM

The Unified Forecast System

While we cannot control the weather, we can understand how to better predict it. That's where the Unified Forecast System (UFS) comes in. The UFS is a weather forecast system developed by a community of scientists and engineers who come together to produce cutting-edge Earth system models and to enhance the weather forecast guidance used by the Weather Enterprise. The UFS also includes multiple applications that span local to global scales and offer sub-hourly to seasonal predictions. These applications package together components such as numerical models, data assimilation, and other elements.

Earth Prediction Innovation Center

NOAA's EPIC Program fosters the work being done by the UFS by nurturing a collaborative weather community. EPIC offers an environment for the growth of next-generation models, management of cloud-ready code, community engagement and user support, a clear pipeline for research and model transition to operations, end-to-end testing for UFS applications, and expanded support for NOAA's Earth system models.

EPIC's work

Suggest a Newsletter Topic

Make your voice heard by contributing to our next newsletter. We welcome ideas for future topics.

Submit your newsletter topic

Get Involved

Join our community! Whether you're a seasoned academic, interested student, or complete newbie, EPIC has something for you.

Sign up for the UFS mailing list

UFS
UNIFIED FORECAST SYSTEM

Stay Connected

We'd love to connect — it's at the heart of what we do. Send us questions at support.epic@noaa.gov or stay in touch via our feedback page.

09/09