Earth Prediction Innovation Center (EPIC) Program

EPIC is a virtual center that leverages resources to better coordinate the weather research and modeling community in an effort to continually inform and accelerate advances in our nation's operational weather forecast model systems. EPIC will advance weather modeling skill, reclaiming and maintaining international leadership in the area of Numerical Weather Prediction (NWP), and improving Research to Operations (R2O) by:

- Leveraging the Weather Enterprise to remove barriers to improving NWP;
- Enabling scientists and engineers to effectively collaborate in areas important for improving operational global NWP skills;
- Strengthening NOAA's ability to undertake research projects in pursuit of substantial advancements in weather forecast skill;
- Utilizing and leveraging existing resources across NOAA's enterprise; and
- Creating a community global weather research modeling system that is accessible by the public, meets end-user requirements, and utilizes innovative strategies and methods, including cloud-based computing, when appropriate and cost-effective.

EPIC supports the software infrastructure of the UFS, as well as community engagement, user support and scientific innovation. EPIC will establish and provide access to Continuous Integration/Continuous Delivery (CI/CD) pipelines that enable and accelerate the infusion and testing of innovations in the UFS and its applications. The EPIC team is in the process of making the UFS Weather Model cloud-ready, including providing necessary high-performance computing (HPC) configurations and relevant data needed for model execution, evaluation, and validation on cloud platforms. An EPIC service desk was established to provide user support and ensure access and usability by all community members, regardless of the level of expertise in forms of training, tutorials, hackathons, code sprints, and workshops.

Proposals relevant to the development of the UFS are strongly encouraged to collaborate with EPIC in the following areas:

- Utilizing code, requesting user support, and contributing to selected UFS applications and components listed on this page: https://epic.noaa.gov/get-support;
  - Similar user support for global-workflow, the infrastructure to support Global Forecast System and Global Ensemble Forecast System, is estimated to be live by summer 2025.
- Utilizing and providing UFS-associated datasets on NOAA Open Data Dissemination Program to support research and development of the UFS via NOAA (e.g., https://www.noaa.gov/nodd/datasets#UFS);

- Leveraging the UFS unified containers developed by EPIC (https://github.com/NOAA-EPIC/ufs-containers) to improve developer productivity, performance, efficiency, and application portability.

What can be included in the proposal?
The proposed projects can plan to collaborate with EPIC contractors without listing them as collaborators. In the proposal, a separate paragraph can be included to list proposed tasks, timeline, and proposed support from EPIC software engineers if the proposed tasks can benefit from EPIC collaboration. The EPIC team can work with the successful proposal to solidify the plan once the proposal is selected.

Further information about the EPIC Program may be found through the following links:
- EPIC Community Portal: https://epic.noaa.gov/
- EPIC Program page: https://wpo.noaa.gov/Programs/EPIC
- EPIC Tutorials: https://epic.noaa.gov/tutorials
- EPIC Training and Community Engagement Events: https://epic.noaa.gov/event
- Technical Frequently Asked Questions (FAQs): https://epic.noaa.gov/technical-faqs
- General program FAQs: https://wpo.noaa.gov/Programs/EPIC/FAQs

For further information about the EPIC Program, contact Dr. Maoyi Huang, Program Manager, using the email Maoyi.Huang@NOAA.gov.