



NATIONAL SCIENCE FOUNDATION
2415 EISENHOWER AVENUE
ALEXANDRIA, VIRGINIA 22314

NSF 23-095

Dear Colleague Letter: Physical and Dynamic Meteorology Update on Modeling Tools and Support

April 27, 2023

Dear Colleague:

The purpose of this Dear Colleague Letter (DCL) is to convey to the scientific community that, for numerical modeling-based activities, NSF's [Physical and Dynamic Meteorology](#) (PDM) program welcomes proposals that make use of any modeling system that will advance the relevant science.

The dominant model in the mesoscale meteorology community has been the Weather Research and Forecasting (WRF) model, which remains a viable and valuable tool. As a signal of the ongoing commitment to WRF, NSF has recently funded an [effort](#) to develop a new containerized version of WRF that will further lower the barrier of entry for the use of the model and evaluation tools. However, newer modeling systems such as the Model for Prediction Across Scales (MPAS) and the Unified Forecast System (UFS) with the FV3 dynamical core are being developed that may significantly expand future capabilities. Thus, NSF encourages PIs to explore these new systems while also introducing them to and training students.

With this DCL, PDM is extending an invitation for supplemental support ideas *to active PDM awards* that will introduce MPAS and/or UFS into the project. The purpose of these supplements should be to: 1) increase the robustness of research findings by demonstrating them on a different modeling system, 2) provide opportunities for training on new modeling tools, and 3) provide assessment and feedback of the capabilities of the new systems. Supplemental funding requests will only be allowed with approval from PDM following the concept paper path described in the next paragraph. PDM also encourages Research Opportunity Award (ROA) supplemental support ideas for faculty from Primarily Undergraduate Institutions to work as visiting scientists with current PDM awardees. See Section II.B.ii.a of the [Facilitating Research at Primarily Undergraduate Institutions](#) program solicitation for additional information about ROA supplements.

To ensure consideration for support in FY23, a one-page concept paper should be emailed to

AGS-PDM@nsf.gov before May 26th, 2023. PDM program directors will select the projects that will move forward based on the relevance to this DCL. Supplements can be funded up to \$50k or 20% of the original award amount, whichever amount is lower.

The one-page Concept Paper should contain descriptions of:

- The additional research activity that would be supported by the supplemental funding, including an explanation of how the current research project would be enhanced by the introduction of a new modeling system.
- The involvement of individuals in the hands-on use of the new modeling system, including interactions with developers of the new modeling system to provide feedback and/or assessment.

Sincerely,

Alexandra R. Isern
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