



National Science Foundation
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NSF 12-029

Frequently Asked Questions: **Decadal and Regional Climate Prediction Using Earth System Models**
(**NSF 12-522**)

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1. **What is an Earth System Model?**

Earth System Models are a class of models that integrate components and processes beyond the physical, dynamical systems present in climate models, with the intention of accurately representing the complex human, natural, chemical, and physical interactions that contribute and respond to climate.

2. **How are predictability and prediction defined within the context of this solicitation?**

Predictability- The extent to which future states of a system may be predicted based on knowledge of current and past states of the system. Because knowledge of the system's past and current states is generally imperfect, as are the models that utilize this knowledge to produce a prediction, predictability is inherently limited. Even with arbitrarily accurate models and observations, there may still be limits to the predictability of a physical system, e.g., chaotic systems. Climate prediction- The prediction of various aspects of the climate of the globe and/or a region during some future period of time. Climate predictions are generally in the form of probabilities of anomalies of climate variables (e.g., temperature, precipitation). (The term "climate projection" rather than "climate prediction" is now commonly used for longer- range predictions that have a higher degree of uncertainty and a lesser degree of specificity. For example, this term is often used for "predictions" of climate change that depend on uncertain consequences of anthropogenic influences such as land use and the burning of fossil fuels.) (Adapted from : AMS Glossary of Meteorology, 2nd Ed, June 2000
<http://amsglossary.allenpress.com/glossary/browse?s=c&p=1>)

3. What is meant by 'cyberinfrastructure'?

Cyberinfrastructure tools may include shared hardware, software, observational archives and data networks, visual organizations, model/data visualization, provenance tracking, communications and conferencing capabilities. For more information please refer to NSF's Office of Cyberinfrastructure website: <http://www.nsf.gov/oci>

4. Does this solicitation apply to investigators who are not Earth Scientists?

Yes. Advancements in Earth System Modeling will require the parallel, collaborative efforts of diverse teams from many disciplines. These interdisciplinary teams of experimental, theoretical, modeling and computational researchers could include, but are not limited to, agricultural/biological scientists, chemists, geoscientists, mathematicians/statisticians, physicists, and social scientists. Since this is such an interdisciplinary effort, single PI proposals are strongly discouraged.

5. How does this solicitation differ from Coupled Natural and Human Systems (CNH) or other NSF climate-related solicitations?

This solicitation is complementary to CNH, but it places the focus on an integrated system modeling approach at regional scales for enhanced decadal predictions. Please refer to the NSF website for more details on these other programs.

6. Can investigators from national laboratories other than those associated with USDA and DOE submit proposals?

No. See eligibility rules in the solicitation.

7. Will proposals for field programs or large, observational campaigns be supported by this solicitation?

It is not the intention to support field programs or large observational campaigns involving long lead time, high cost facilities, e.g., aircraft and ships. Some fundamental, innovative laboratory and field experiments may be considered, as long as the outcome can be shown to directly improve model representation of a process that is important to integrated Earth System Modeling. To determine the appropriateness of the proposed research activity, contact a program director prior to submission.

8. Is there an upper limit on the cost of a project submitted to this competition?

Yes, \$3M, \$4M and \$5M, for 3-year, 4-year, and 5-year projects, respectively. The budget should accurately reflect the effort of all parties, as detailed in the budget justification. Please also refer to the Proposal Preparation and Submission Instructions Section, Part B, of the EaSM solicitation.

9. My project is large and complex; can I request additional space in the Project Description?

No. All proposals must adhere to the 15-page limit.

10. Do all proposals require a data and project management plan?

Yes, all proposals require a Data Management and a Program Management plan. If you do not expect your project to produce any data, please state so in your data management plan. Please refer to Section V. of the solicitation, entitled Proposal Preparation and Submission Instructions.

11. What is the purpose of the required annual meetings? Should I include travel monies for these meetings in the proposal budget?

The annual meetings are venues for project scientists to share progress and results while interacting with fellow EaSM awardees. It is also encouraged for students, postdocs, and early career scientists working on EaSM projects to attend to foster exchanges that will build and enhance longevity of the EaSM community.

Yes. Travel monies for these meetings should be included in the proposal budget. For this purpose, the venue will be in Washington D.C.

12. Can I volunteer to be on one of the review panels?

Yes, unless you are a PI, co-PI or otherwise involved on a proposal submitted to this competition. Please contact one of the cognizant program officers for further details.

13. What should I do if I still have questions?

If you are uncertain if your proposal is appropriate for this program, please send your questions to eam2@nsf.gov.