

*The National Academies of*  
**SCIENCES • ENGINEERING • MEDICINE**

**Catalyzing Opportunities for Research in the Earth Sciences (CORES):  
A Decadal Survey for NSF's Division of Earth Sciences**

Revised November 15, 2018

**Statement of Task:**

This National Academies of Sciences, Engineering, and Medicine study will help provide advice that the National Science Foundation's Division of Earth Sciences can use to set priorities and strategies for its investments in research, infrastructure, and training in the coming decade. An ad hoc committee will prepare a report that includes the following elements:

1. A concise set of high-priority scientific questions that will be central to the advancement of Earth sciences over the coming decade and could help to transform our scientific understanding of the Earth. Identification of these questions may derive from consideration of relevance to societal benefits, new technological breakthroughs, potential for fruitful interaction and collaboration with other disciplines, emerging subjects poised for rapid development, or other drivers.
2. A) Identification of the infrastructure (e.g., physical infrastructure, cyberinfrastructure, and data management systems) needed to advance the high-priority Earth science research questions from task #1, B) discussion of the current inventory of research infrastructure supported by EAR and other relevant areas of NSF, and C) analysis of capability gaps that would need to be addressed in order to align B with A.
3. A discussion of how EAR can leverage and complement the capabilities, expertise, and strategic plans of its partners (including other NSF units, federal agencies, domestic and international partners), encourage greater collaboration, and maximize shared use of research assets and data.

The ad hoc committee will consider these tasks within the context of the present EAR budget. It also will consider potential adjustments in priorities identified in task #1 or approaches to implementing those priorities that could be applied if future budgets were to increase or decrease.

In addition, the National Academies will convene a workshop (as an additional, integrated part of the CORES study) to address different management models for future seismological and geodetic facility capabilities such as instrumentation, user support services, data management, education/outreach, and workforce development for the Division of Earth Sciences. This workshop will provide additional information for Task 2 of the CORES study.