EarthCube: Advancing Partnerships, Collaborative Platforms and Knowledge Networks in the Ocean Sciences

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The National Science Foundation's EarthCube initiative aims to create a community-driven data and knowledge management system that will allow for unprecedented data sharing across the geosciences. More than 2,500 participants through forums, work groups, EarthCube events, and virtual and in-person meetings have participated. The individuals that have engaged represent the core earth-system sciences of solid Earth, Atmosphere, Oceans, and Polar Sciences. EarthCube is a cornerstone of NSF's Cyberinfrastructure for the 21st Century (CIF21) initiative, whose chief objective is to develop a U.S. nationwide, sustainable, and community-based cyberinfrastructure for researchers and educators.

Increasingly effective community-driven cyberinfrastructure allows global data discovery and knowledge management and achieves interoperability and data integration across scientific disciplines. There is growing convergence across scientific and technical communities on creating a networked, knowledge management system and scientific data cyberinfrastructure that integrates Earth system and human dimensions data in an open, transparent, and inclusive manner.

EarthCube does not intend to replicate these efforts, but build upon them. An agile development process is underway for the development and governance of EarthCube. The agile approach was deliberately selected due to its iterative and incremental nature while promoting adaptive planning and rapid and flexible response. Such iterative deployment across a variety of EarthCube stakeholders encourages transparency, consensus, accountability, and inclusiveness.