Research Funding Opportunities

Organization: NSF Solicitation Name: EarthCube: Developing a Community-Driven Data and Knowledge Environment for the Geosciences 20-520 Proposal
Deadline: March 12, 2020
Summary: EarthCube aims to create a well-connected and facile environment to share data and knowledge in an open, transparent, and inclusive manner, thus accelerating our ability to understand and predict the Earth system. Achieving EarthCube will require a long-term dialog between NSF and the interested scientific communities to develop cyberinfrastructure that is thoughtfully and systematically built to meet the current and future requirements of geoscientists. New avenues will be supported to gather community requirements and priorities for the elements of EarthCube, and to capture the best technologies to meet these current and future needs. The EarthCube portfolio will consist of interconnected projects and activities that engage the geosciences, cyberinfrastructure, computer science, and associated communities. This Solicitation supports two funding opportunities:

1. **Science-Enabling Capabilities and Pilots:** This opportunity builds capabilities to improve geosciences data use and reuse for observational, experimental, and computational research that is interoperable with emerging standards and resources.

2. **EarthCube Research Coordination Networks (RCNs):** This opportunity supports the formation of RCNs closely tied to the science and data needs of core geosciences programs and domains supported by GEO.


Organization: NSF Solicitation Name: National Robotics Initiative 2.0: Ubiquitous Collaborative Robots 20-522 Whitepaper
Deadline: May 13, 2020
Summary: The NRI-2.0 program builds upon the original National Robotics Initiative (NRI) program to support fundamental research in the United States that will accelerate the development and use of collaborative robots (co-robots). A co-robot is a robot whose main purpose is to work with people or other robots to accomplish a goal. An ideal co-robot is an adaptable partner, not limited to a narrow set of specified interactions or functions, but able to significantly enhance team performance despite changes in its role, its teammates, or the team’s collective goals. The program supports four main research themes:

1. **Scalability:** how robots can collaborate effectively with orders of magnitude more humans or other robots than is handled by the current state of the art; how robots...
can perceive, plan, act, and learn in uncertain, real-world environments, especially in a distributed fashion; and how to facilitate large-scale, safe, robust and reliable operation of robots in complex environments.

2. Customizability: how to enable co-robots to adapt to specific different tasks, environments, or people, with minimal modification to hardware and software; how robots can personalize their interactions with people; and how robots can communicate naturally with humans

3. Lower Barriers to Entry: should focus on lowering the barriers for conducting fundamental robotics research and research on integrated robotics application. This may include development of open-source co-robot hardware and software, as well as widely accessible testbeds.

4. Societal Impact: include fundamental research to establish and infuse robotics into educational curricula, advance the robotics workforce through education pathways, and explore the social, economic, ethical, security, and legal implications of our future with ubiquitous collaborative robots.


Summary: ECR’s Building Capacity for STEM Education Research (ECR: BCSER) solicitation supports projects that build individuals’ capacity to carry out high quality STEM education research that will enhance the nation’s STEM education enterprise and broaden the pool of researchers that can conduct fundamental research in STEM learning and learning environments, broadening participation in STEM fields, and STEM workforce development. Insights from fundamental STEM education research inform the development of theories that explain phenomena of importance to the mission of NSF’s Directorate for Education and Human Resources (EHR). Advances in fundamental STEM education research also are essential to foster new and/or more effective interventions and innovations in STEM education, broadening participation, and workforce development.

Two genres of research in particular contribute to this fundamental, core knowledge in education:

- Foundational research, which typically “seek[s] to test, develop, or refine theories…and may develop innovations in methodologies and/or technologies that will influence and inform research and development in different contexts”, and
- Early-stage or exploratory research, which “examines relationships among important constructs…to establish logical connections that may form the basis for future interventions or strategies to improve education outcomes.”