NSF 21-628 Centers for Innovation and Community Engagement in Solid Earth Geohazards

Division of Earth Sciences

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Context for new program

- GEO/EAR has long supported geohazards research

- National Academies of Sciences, Engineering, and Medicine 2020: *'A Vision for NSF Earth Sciences 2020-2030: Earth in Time'*
  - *What is an earthquake?*
  - *What drives volcanism?*
  - *What are the causes and consequences of topographic change?*
  - *How can Earth science research reduce the risk and toll of geohazards?*

- New Centers Program will provide community-scale leadership in two areas:
  - convergence and innovation in systems-level science
  - community engagement

Timeline

- Letters of Intent due <u>November 30, 2021 – **needed for both tracks**</u>

- Full proposals target date March 15, 2022

- Review process will take 6 - 12 months

- Awards expected late 2022/early 2023

Letters of Intent (*LOI*)

- *LOI* due date is November 30th
- Each lead organization needs to submit through FastLane
  - One page
    - articulating high-level focus of the center
    - A list of all senior personnel
    - A list of collaborating and/or partnering organizations

- Authorized Organization Representative submission is not required

- A *LOI* **is required** for submission of *Track I* and *Track II* full proposals

Program Scope

- Supports university-based centers to advance research on the fundamental solid Earth processes that underpin natural hazards

- Centers catalyze, coordinate, and produce transformative research to address major science challenges in solid Earth geohazards related to earthquakes, volcanoes, mass movements, and other dynamic processes associated with tectonic and volcanic systems.

- Centers will also foster different dimensions of community engagement to meaningfully improve the national welfare

Solicitation

- ***Track I: Center Catalyst***

  Awards are intended to provide resources to catalyze initiatives to develop future centers.

- ***Track II: Center Operations***

  Awards are intended to support the operation of a fully developed center.

  - For FY22, consider only those proposals built around theme related to <u>fundamental earthquake processes</u>

Awards

- *Track I* – up to $500,000 for 2 years
  - 2-3 awards expected
  - Standard Grants

- *Track II* – up to $15 million for 5 years (up to $3 Million a year)
  - 2 awards expected
  - Cooperative Agreements

- Collaboratives – single institution submissions with subawards

Attributes of a Center

1) Centers must **have a vision for innovative and transformative research that is ambitious in scope.**

- Can be focused on single hazard or multiple hazards– scope should be tractable with the budget of the program   (in FY22: ***Track II proposals*** <u>must</u> focus on fundamental earthquake processes)

- Could not be feasible with standard investigator support mechanisms

- PIs considering potential projects that cross the shoreline should contact Program Officers in the Marine Geology and Geophysics program in the Division of Ocean Sciences.

Attributes of a Center

2) Centers must:

- place a ***major emphasis on supporting activities that educate the next generation of researchers***;

- ***prioritize broadening participation*** of underrepresented groups;

- take ***explicit steps to develop a culture of equity and inclusion*** at all levels of operation and in all research endeavors.

3) *Strategic planning* will be a key element of a Center, covering all aspects, including:

- research;

- workforce development and other broader impact activities;

- diversity, equity, and inclusion;

- management;

- and center-wide data approaches, including the development of explicit milestones.

Plans will be openly available.

Attributes of a Center

4) Centers will

- *have appropriately-scaled management plans* that address the leadership of the center, how decisions will be made, including the roles of any internal committees
- practice **strong project management**. Therefore, centers will align proposed scope with realistic budgets and timelines for achieving those goals.

5) Centers will be *responsible for sound development and management of any shared facilities, infrastructure or cyberinfrastructure* required to meet the scientific goals of the center.

Attributes of a Center

6) *Partnerships between the Center and Other Organizations* will be defined by strong collaborations that are led by the Center's Principal Investigators.

7) *Collaborations with partner organizations* will support the execution of the Principal Investigators' and Center's vision and strategic plan.

8) *Alignment of the partners' goals with overall goals of the center* need to be demonstrate the proposal. The role of the partners in center activities will be clearly articulated, and resources that partners bring to the Center will be explicitly stated.

Preparing your proposal – Fastlane or Grants.gov

- Read and follow **_all_** of the proposal preparation instructions
  - Cover Sheets
  - Project Summary and Description
  - Supplementary Documents
  - Single Copy Documents

- Proposals may be returned without review

Track I: Preparing your proposal – Fastlane or Grants.gov

Project Description 15-page in length

- Table of Investigators
- Proposed Center Overview
- Research Plan. Narrative, consisting of the following:
  - A description of the research and broader impact activities, including those related to creating a diverse and inclusive Center, proposed in sufficient detail for the reviewers to be able to evaluate the feasibility of the proposed work, potential for collaboration and synergy, and potential for transformative impact;
  - A brief description of the contribution to be made by each Investigator who is listed in the previous Table;
  - A justification for why a center mode is appropriate for both research and broader impact activities (compared with individual or collaborative awards); and
  - A discussion of how the Track I efforts can lead to a fully-fledged Center worthy of eventual support as a Track II – Center Operations award.
- Plan for Center development and management
- Budget: standard NSF 1030 budget breakdown

Track II: Preparing your proposal – Fastlane or Grants.gov

Project Description 50 pages in length

- **Executive Summary**

- **List of Participants**

- **Results from Prior NSF Support**

- **Research plan and Major Activities (MAs)**

- **Shared Facilities or Infrastructure to be established**

- **Partnerships**

- **Management Plan**

* References Cited is in addition to the 50-page Project Description

Track II: Major Activities (MA)

- *Major Activities (MA)* provide the framework for aligning the proposed scope with realistic budgets and timelines for achieving Center goals.

- *Each Research MA:* concise description of the long-term research goals and intellectual focus, and planned research activities in sufficient detail to enable assessment of their scientific merit and significance.

- *Each Community Engagement MA*: clearly establishes need for the activity, including justification for the approach, arguments for why the proposed Center is the appropriate vehicle for the activity, and the expected impacts on science and the community.

Track II: Budget preparation

- For *Track II* – in addition to the standard NSF 1030 budget breakdown, provide separate summary budget page for the Center

- This ensures alignment of center scope with budget

Summary Table of Requested NSF Support		
Activity	Year One	Five Year Total
Major Activity (MA) 1 (Title)		
MA 2 (title) (repeat for each MA)		
Shared Facilities or Infrastructure		
Management and Administration		
Total		

Proposal Review Criteria

NSF merit review criteria

- **Intellectual Merit**
- **Broader Impacts**

Additional solicitation review criteria (based on the Center Track)

Additional Review Criteria

- How well does the proposal articulate the vision of the Center

- How strong is the Center's vision for developing community engagement activities

- How well does the proposal articulate a management plan

- How well does the proposal align the proposed scope with realistic budgets and timelines for achieving Center goals

- How well does the Center infrastructure plan describe how shared facilities, infrastructure, and cyberinfrastructure will be developed and managed

FAQs

What do you mean by *community engagement?*

- Centers are a platform for community driven science and broad stakeholder participation

- Centers must have a vision and integrated set of activities for community engagement that places a major emphasis on supporting activities that educate the next generation of researchers

- Centers will also prioritize broadening participation of underrepresented groups in all facets of center activities, and proposals should demonstrate how this will be accomplished

- Centers will be expected to take explicit steps to develop a culture of equity and inclusion at all levels of operation and in all research endeavors

- Centers are a mechanism for partnership development – many stakeholders

- Centers provide shared facilities, infrastructure or cyberinfrastructure

How should I describe partnerships?

- Describe them in the Project Description under the *Partnerships* section

- Include information about them in the **Facilities, Equipment and Other Resources** portion of your proposal – refer to the PAPPG

- Include letters of collaboration with standard format as outlined in the PAPPG

How should I describe institutional support?

- Within the ***Facilities, Equipment and Other Resources*** section of your proposal – refer to the PAPPG
  - Narrative in nature and must not include any quantifiable financial information.

Can you explain seed funding?

- Centers may need flexibility to advance Major Activities or to respond quickly to emerging research and/or broader impact opportunities through subaward seed funding.

- Seed funding is not intended to provide a substitute for NSF individual investigator funding, nor should it be used to fund foundational operational support for the Center.

- Proposals should describe the criteria and mechanisms for selecting and evaluating projects that may require seed funding.

Can I submit more than one proposal?

- Limit on Number of Proposals per Organization: 2
  - No more than two proposals across both tracks may be submitted by any Lead institution.

- Limit on Number of Proposals per PI or co-PI: 1
  - Any one individual may be the Principal Investigator (PI) or co-PI for only one *Track II :* Center Operation proposal. Individuals may be listed as participating Senior Investigators on more than one proposal

Future questions:

Please use the program email:

EARgeohazards@nsf.gov