National Science Foundation
4201 Wilson Boulevard
Arlington, Virginia 22230

NSF 13-028

Frequently Asked Questions for NSF 12-610: Hazard SEES

1. What is meant by interdisciplinary Hazards SEES research?

Proposals are expected to document that the proposed research is truly interdisciplinary and that the respective components are fully integrated and necessary for the successful execution of the proposed project. Plans for integration of the respective research components must be clearly outlined in the proposal. In order to ensure an interdisciplinary approach to solving sustainability problems Hazards SEES principal investigators should represent *three or more* distinct disciplinary areas as described in this solicitation (1: atmospheric and geospace, earth, and ocean sciences; 2: engineering; 3: social, economic, and behavioral sciences; 4: mathematics and statistics; 5: computer and information science and engineering; and 6: cyberinfrastructure). You are welcome to include team members from other areas, too. The appropriateness of the research team's disciplinary composition and expertise will be factors in the merit review of the proposal as described in the NSF Merit Review Criteria section in the Hazards SEES solicitation.

2. Can Type 2 projects request support for new equipment, instrumentation, or observing systems?

Hazard SEES is intended to be a research program, rather than an instrumentation program. Minor requests for instrumentation or equipment are appropriate if they are essential to supporting the proposed research. However, substantial investments in instrumentation or equipment are not appropriate for this program. NSF has other programs to support major instrumentation needs that you may wish to consider.

3. My project involves biological research. Would this project be appropriate for the Hazards SEES solicitation?

It depends. Biological sciences are not one of distinct disciplinary areas described in this solicitation except for marine systems that are included in ocean sciences. However, a biological or ecological component may fit into the research if appropriate to answer the overarching research questions. The key is to craft a compelling argument that is in the full spirit of the solicitation that integrates investigators from three or more distinct disciplinary areas as described in this solicitation (1: atmospheric and geospace, earth, and ocean sciences; 2: engineering; 3: social, economic, and behavioral sciences; 4: mathematics and statistics; 5: computer and information science and engineering; and 6: cyberinfrastructure).

4. My project is large and complex or my project is a large collaboration among multiple institutions. Can I request additional space in the Project description?

No. All proposals must adhere to the page limit given in the solicitation.

5. Do all proposals require a Data Management Plan? And do all proposals require a Management and Integration Plan as well?

Yes. All Hazards SEES proposals require both. The proposal must include a section that describes data and model sharing plans (Data Management Plan) in the Supplementary Documents section of the proposal as described in the NSF Grant Proposal Guide and in the Proposal Preparation Instructions section of the Hazard SEES solicitation. If you do not expect your proposal to generate data, please state this in your Data management plan. The proposal must also include a Management and Integration Plan, which is also described in the Proposal Preparation Instructions section of the Hazard SEES solicitation. The Management and Integration Plan differs significantly from the Data Management Plan as discussed in the solicitation. The quality and appropriateness of the Management and Integration Plan is an important review criterion for Hazards SEES proposals as outlined in the NSF Merit Review Criteria section of the Hazards SEES solicitation.

6. Can a researcher be involved in more than one Hazards SEES proposal?

Yes. Although an individual can appear in the budget (including subaward budgets) for only one proposal, an individual can be involved in multiple proposals as an unfunded collaborator.

7. Who can attend the grantees meeting? Can my students or post-doc attend the PI meeting?

If your project receives an award, up to four members of the research team, including the PI and a least one other senior investigator, should plan to participate in the grantee meeting. Students and post-doctoral fellows can attend, but costs for up to a maximum of four participants can be in the budget.

8. The solicitation uses a lot of terms such as vulnerability, resilience, hazards, and disasters. Would you please define these?

Definitions of these terms can be found in *2009 UNISDR Terminology on Disaster Risk Reduction* published by the United Nations International Strategy for Disaster Reduction (UNISDR), Geneva, Switzerland (http://www.preventionweb.net/files/7817_UNISDRTerminologyEnglish.pdf)

> Disaster: A serious disruption of the functioning of a community or a society involving widespread human, material, economic or environmental losses and impacts, which exceeds the ability of the affected community or society to cope using its own resources.
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> Hazard: A dangerous phenomenon, substance, human activity or condition that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
>
> Natural hazard: Natural process or phenomenon that may cause loss of life, injury or other health impacts, property damage, loss of livelihoods and services, social and economic disruption, or environmental damage.
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> Resilience: The ability of a system, community or society exposed to

hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions.

Vulnerability: The characteristics and circumstances of a community, system or asset that make it susceptible to the damaging effects of a hazard.

9. What is the difference between natural hazards, technological hazards, and technological hazards linked to natural phenomena?

The link between technological hazards and natural phenomena is reciprocal. First, technological hazards originating in human activity may significantly impact natural systems. The Deepwater Horizon Oil Spill in 2010 is an example of technological hazard linked to natural phenomena. Human error led to the release of oil into the Gulf of Mexico, which damaged the oceanic and coastal ecosystems upon which many coastal towns and industries depend. Second, natural hazards, such as earthquakes and hurricanes, may precipitate technological disasters. The earthquake and tsunami that impacted the nuclear plant in Fukishima, Japan in 2011 is an example. Many technological hazards are entirely contained within the social and technological realm (e.g., financial system meltdowns). Without some significant impact on natural phenomena, such hazards are beyond the purview of Hazard SEES. Hazards originating from war, acts of terrorism, and other malicious human activity (e.g., criminal acts, sabotage) are also beyond the scope of Hazard SEES. Studies of these types of hazards should not be proposed.

10. Which natural hazards are of interest to the Hazards SEES program?

The U.S. National Science and Technology Council Subcommittee on Disaster Reduction (SDR) publication *Grand Challenges for Disaster Reduction* includes a set of Implementation Plans for various natural hazards, which provide further definitions and descriptions of these hazards. Research projects related to these hazards are among, but not limited to, those that would fit in the scope of Hazards SEES:

Coastal Inundation (http://www.sdr.gov/docs/185820_Coastal_FINAL.pdf)

Drought (http://www.sdr.gov/docs/185820_Drought_FINAL.pdf)

Earthquake (http://www.sdr.gov/docs/185820_Earthquake_FINAL.pdf)

Flood (http://www.sdr.gov/docs/185820_Flood_FINAL.pdf)

Heat Wave (http://www.sdr.gov/docs/185820_Heatwave_FINAL.pdf)

Hurricane (http://www.sdr.gov/docs/185820_Hurricane_FINAL.pdf)

Landslide and Debris Flow (http://www.sdr.gov/docs/185820_Landslide_FINAL.pdf)

Space Weather (http://www.sdr.gov/docs/185820_Space_FINAL.pdf)

Tornado (http://www.sdr.gov/docs/185820_Tornado_FINAL.pdf)

Tsunami (http://www.sdr.gov/docs/185820_Tsunami_FINAL.pdf)

Volcano (http://www.sdr.gov/docs/185820_Volcano_FINAL.pdf)

Wildland Fire (http://www.sdr.gov/docs/185820_Wildfire_FINAL.pdf)

Winter Storm (http://www.sdr.gov/docs/185820_Winter_FINAL.pdf)

11. The Implementation Plans (see previous question) for natural hazards also include Human and Ecosystem Health. Could research in this area be considered for the Hazards SEES solicitation?

Human and Ecosystem Health may be part of a larger research schema, but may not be complete enough to satisfy the requirements in the solicitation that projects include investigators from three or more distinct disciplinary areas as described in this solicitation (1: atmospheric and geospace, earth, and ocean sciences; 2: engineering; 3: social, economic, and behavioral sciences; 4: mathematics and statistics; 5: computer and information science and engineering; and 6: cyberinfrastructure). Investigators from other disciplinary areas are welcome to join a team consisting of three of more of the disciplines listed.

12. Can a Hazards SEES project involve international research? And can a project have international collaborators?

Hazards SEES projects can involve international research. Hazards and disasters research has natural linkages with international partners thus international collaborations are encouraged where appropriate. International collaborators, however, are encouraged to seek support from their respective funding organizations. Funding guidelines for involving international collaborators (see Budgetary Information section of the Hazards SEES solicitation) allow the following expenses to be included in the NSF budget: 1) Travel expenses for U.S. scientists and students participating in exchange visits integral to the project; 2) Limited project-related expenses for international partners to engage in research activities while in the United States as project participants; 3) Project-related expenses for U.S. participants to engage in research activities while abroad

13. How do I decide if my proposal should be submitted to Hazards SEES or another SEES (or SEES-like) program, such as Coastal SEES, CNH (Dynamics of Coupled Natural and Human Systems), ArcSEES (Arctic SEES), or RCN (Research Coordination Networks) SEES or another program?

The overarching goal of Hazards SEES is to catalyze well-integrated interdisciplinary research efforts in hazards-related science and engineering in order to improve the understanding of natural hazards and technological hazards linked to natural phenomena, mitigate their effects, and to better prepare for, respond to, and recover from disasters. It is up to the PI to make a compelling case

for their project and how well it fits the particular goals of any NSF solicitation. Please read the solicitation carefully and submit to the most appropriate program.

14. How I should handle NSF facility costs in the proposal?

NSF facilities are often in high demand and allocation decisions are made well in advance of facility usage. Proposers should consult facility managers and relevant NSF program officers to discuss options for requesting the use of a facility as far in advance of the proposal submission date as possible. In general, proposers will have to adhere to the established scheduling guidelines of the individual NSF facility.

As stated in the main text of the solicitation, projects that are requesting NSF computational facilities and/or observational platforms and facilities must include a copy of their Request for Facility Support in the supplementary documents. The document must include a cost estimate for the use of the facility, which should be derived upon consultation with the facility manager. When preparing your proposal, do not include these costs in the standard NSF budget form. Costs for NSF facilities would be allocated separately if your proposal is supported. Please remember that the facility costs will count against the $300k cap for Type 1 proposals and $3M cap for Type 2 proposals. For example, if you are planning on submitting a Type 2 proposal that includes a facility cost of $500k, your proposal budget should be no larger than $2.5M.

15. Are PIs from NCAR permitted to submit proposals to Hazards SEES?

PIs from the National Center for Atmospheric Research (NCAR), an NSF-sponsored FFRDC, are permitted to submit proposals to Hazards SEES subject to certain conditions: (1) NCAR's participation must be consistent with the NCAR mission of enabling or fostering focused new community research; (2) NCAR's participation is expected to be in partnership with non-FFRDC organizations; and (3) funding requested by NCAR must be consistent with the Atmospheric and Geospace Sciences (AGS) division's guidelines to NCAR for proposal submissions (for guidelines consult the AGS website http://www.nsf.gov/div/index.jsp?org=AGS).

16. Can PIs from a federal lab (FFRDC) submit a proposal to Hazards SEES?

Non-NSF-sponsored FFRDC's are not permitted to submit proposals to Hazards SEES. However, unfunded collaborations could include participation of individuals from any FFRDC, regardless of NSF sponsorship.

17. The Hazards SEES solicitation mentions that components of education and workforce development might include involvement of undergraduate students in hazards and disaster research through the inclusion of an REU supplement to the Hazards SEES proposal. How do I incorporate an REU supplement request within my proposal?

Incorporation of a REU supplement request within a proposal is an effective mechanism to integrate undergraduate educational activities into a research project. The Research Experiences for Undergraduates (REU) solicitation (NSF 12-

569) describes this mechanism in detail. That solicitation notes that support for undergraduate students involved in carrying out research under NSF awards should be included as part of the research proposal itself instead of as a post-award supplement to the research proposal. The solicitation states: "A request for an REU Supplement as part of a proposal for a new or renewal grant or cooperative agreement should be embedded in the proposal as follows. Enter the description of the REU activity (namely, the information described above in the fourth paragraph under the subheading "REQUEST FOR REU SUPPLEMENT") in the section for Supplementary Documentation. Limit this description to three pages. Include the budget for the REU activity in the yearly project budget. Enter all student costs under Participant Support Costs (Line F on the FastLane budget form and Field E on the Grants.gov budget form). As part of the Budget Justification, provide a separate explanation of the REU Supplement request, with the proposed student costs itemized and justified and a total given for the items plus associated indirect costs. If the intent is to engage students as technicians, then an REU Supplement is not the appropriate support mechanism; instead, support should be entered on the Undergraduate Students line of the proposal budget." (By way of explanation, the phrase “fourth paragraph” comes from a direct quote in the REU solicitation. The interested reader should read that solicitation for further details.)

18. NSF recently published a new Grant Proposal Guide that contains significant changes, including significant revisions to the merit review criteria. Does this new Grant Proposal Guide apply to Hazards SEES proposals?

Yes. The new Grant Proposal Guide (NSF 13-1) is effective January 14, 2013. Proposals submitted to a solicitation deadline that occurs on or after January 14, 2013 must follow the new Grant Proposal Guide even if the proposals are submitted before the January 14 effective date.