NATIONAL SCIENCE FOUNDATION
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ALEXANDRIA, VIRGINIA 22314

NSF 20-062

Frequently Asked Questions (FAQs) for Signals in the Soil (SitS)

1. What is meant by interdisciplinary SitS research?

2. What is meant by "Convergent Research"?

3. I noticed that there is emphasis on "environmentally benign technology". Are there instances where I do not have to address the environmental impact of my proposed technology?

4. I would like to design a sensor system and/or model to monitor groundwater. Is this within the scope of this solicitation?

5. What is the preferred contribution level that should be provided by each project participant/discipline?

6. Is there a limit to how large my team can be?

7. How many proposal submissions can I be on? For example, is it feasible to serve as the PI on one proposal, a co-PI on a second proposal, and an unpaid consultant on a third proposal?

8. I would like to include undergraduate students in the U.S. portion of my project. How do I incorporate a Research Experiences for Undergraduates (REU) experience within my proposal?

9. My international collaborators applying for funding from her/his own country's research funding agency. How will this affect the success of my proposal?

10. This seems to be a very complicated solicitation with many required parts and pieces. Is there a checklist to ensure I have submitted all the necessary parts?

11. I see a deadline for submission is indicated in this solicitation. Does this deadline mean I can submit 2 proposals to this solicitation up until 5 p.m. (local time) on that date?

12. I am not an engineer and I see that I have to submit my project to the ENG Directorate. Is that correct?

13. Can I submit the same proposal to other programs or solicitations at NSF?

1. **What is meant by interdisciplinary SitS research?**

   Proposals are expected to document that the proposed research is truly interdisciplinary and that the respective components are fully integrated and of high relevance for the successful execution of the proposed project. Plans for integration of the respective research components must be clearly described in the proposal and reinforced within the project management plan.

2. **What is meant by "Convergent Research"?**

   Convergence research is a means of solving vexing research problems, in particular, complex problems focusing on societal needs. It entails integrating knowledge, methods, and expertise from different disciplines and forming novel frameworks to catalyze scientific discovery and innovation. Convergence research is related to other forms of research that span disciplines - transdisciplinarity, interdisciplinarity, and multidisciplinarity. It is the closest to transdisciplinary research which was historically viewed as the pinnacle of evolutionary integration across disciplines. For more information on Convergence Research at NSF, please see https://www.nsf.gov/od/oia/convergence/index.jsp and https://www.nsf.gov/publications/pub_summ.jsp?ods_key=nsf18058.

3. **I noticed that there is emphasis on "environmentally benign technology". Are there instances where I do not have to address the environmental impact of my proposed technology?**

   Yes, but you will have to explain why it is not necessary to consider the environmental impact in your project (such as technology not being deployed in a manner that could potentially cause harm, or environmental safety is already demonstrated). For all

sensors and sensing systems that will interact with the environment, the project team must take steps to make sure the sensors and sensing systems will not negatively impact the environment. This could include, but is not limited to, systematic removal of the sensors to avoid harm, biodegradable sensors, techniques that will keep environmentally-harmful substances from impacting the environment, or additional planned studies designed to determine the environmental impact of the sensors or sensing systems.

4. **I would like to design a sensor system and/or model to monitor groundwater. Is this within the scope of this solicitation?**

   No. The central intellectual merit of the solicitation and proposed research should focus on soils. Groundwater monitoring could also be included in addition to soil monitoring, but groundwater studies should not comprise the central intellectual merit of a proposal.

5. **What is the preferred contribution level that should be provided by each project participant/discipline?**

   There are no specific requirements for the relative distribution of disciplinary expertise, yet each component should be included at a level commensurate with the problem scope. The project team should be developed in accordance with the specific project objectives. Multidisciplinary integrative research requires multidisciplinary expertise. The appropriateness of the research team's disciplinary composition and expertise will be factors in the merit review of the proposals.

6. **Is there a limit to how large my team can be?**

   The team size depends on the overall scope of the project, but should reflect budgetary and practical constraints. There are no specific limits on the maximum number of participants.

7. **How many proposal submissions can I be on? For example, is it feasible to serve as the PI on one proposal, a co-PI on a second proposal, and an unpaid consultant on a third proposal?**

   For this solicitation, an individual may appear on no more than 2 proposals total in the following roles: PI, co-PI, or Senior Personnel. Please be advised that violations of these rules will result in "return without review" for ALL proposals submitted that include the individual in violation of these rules.

   For International Collaborators (international collaborators are NOT required, but may be included): There are no limits on the number of proposals involving an individual who is an international collaborator. International collaborators can only be listed as non-funded Senior Personnel.

8. **I would like to include undergraduate students in the U.S. portion of my project. How do I incorporate a Research Experiences for Undergraduates (REU) experience within my proposal?**
   Incorporation of an REU experience within a proposal is an effective mechanism to integrate undergraduate educational activities into a research project. The Research Experiences for Undergraduates (REU) solicitation (NSF 19-582) 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. Please consult the REU solicitation for further details.

9. **My international collaborators applying for funding from her/his own country's research funding agency. How will this affect the success of my proposal?**
   International collaborations, when appropriate, are encouraged. We appreciate that it is hard to synchronize funding with the limited opportunities for funding. You should describe the research that your international collaborator would do and how it improves the intellectual merit and broader impacts of your proposed efforts. However, since your collaborator's funding is not guaranteed, it would be best to ensure that their research effort is not essential for your project to be successful. For instance, it may be preferable to rely on existing data or analyses that your international collaborator can do without additional funding. You should explain that if your international collaborator does receive funding, your collaborative efforts would go forward, even though your efforts would not be fully integrated. If your international collaborator efforts are required for your research to be successful and they do not already have funding, your proposal is unlikely to review well.

10. **This seems to be a very complicated solicitation with many required parts and pieces. Is there a checklist to ensure I have submitted all the necessary parts?**
    Yes. We recommend starting the upload and submission process early and referring to the checklist provided below.
    SitS Proposal Checklist

    A. Cover Sheet.Title must include "SitS:". All proposals with an international dimension should be reported on the cover sheet. All international collaborators should be listed as "non-funded" Senior Personnel. Do NOT list international collaborators as PIs or co-PIs.
    B. Project Summary (See PAPPG)
    C. Project Description (See PAPPG - Note change: "Results from Prior NSF Support" is NOT included in the 15-page limit for this solicitation). Please refer to Section V.A. "Proposal Preparation Instructions" in this solicitation for further solicitation-

specific requirements of the project description.

    D. Biographical Sketch(es) (See PAPPG). Please note that international collaborators must be listed as non-funded Senior Personnel. This should allow the placement of their Biographical Sketches in the appropriate sections. No biographical sketches should appear in the Supplementary Documents.

    E. Proposal Budget (See PAPPG. Please note that all proposal budgets MUST comply with NSF policy at the due date). Please note that both the project budget should include a budget to send at least 1 project participants (PI, co-PI, or Senior Personnel) and at least one student to a program workshop in the U.K. once in the first year of the 3-5 year project span, and once to Washington D.C. in the second year of year of the project span.

    F. Current and Pending Support (See PAPPG).

    G. Facilities, Equipment, and Other Resources (See PAPPG)

    H. Supplementary Documents:
        1. Data Management Plan (See PAPPG)
        2. Postdoctoral Researcher Mentoring Plan for US postdocs (if applicable - see PAPPG)
        3. Other Supplementary Documents:
            ■ Results from Prior NSF Support (Previously this was in the Project Description - it has been moved to this section for this solicitation only -5 page limit).
            ■ Project Management Plan (3-page limit-addition for this solicitation).
            ■ Letters of Collaboration (if needed)

    I. Single Copy Documents (1 separate PDF file): Collaborators & Other Affiliations (COA) information specified in the PAPPG should be submitted using the instructions and spreadsheet template found on the Collaborators and Other Affiliations Information website. Please see the COA website for updated guidance at https://www.nsf.gov/bfa/dias/policy/coa.jsp.

11. **I see a deadline for submission is indicated in this solicitation. Does this deadline mean I can submit 2 proposals to this solicitation up until 5 p.m. (local time) on that date?**

Yes. You are only able to submit proposals up to the deadline, with the local time designation coinciding with the local time of the lead U.S. institution. Please note that proposals will not be accepted after the deadline. Starting the submission process early is strongly encouraged to ensure that you meet the deadline.

12. **I am not an engineer and I see that I have to submit my project to the ENG Directorate. Is that correct?**

Yes. For administrative purposes only, the proposals are being directed to ENG. ALL

proposals will be subject to review, evaluation, and assessment by ALL participating NSF Directorates/Divisions and USDA NIFA.

13. **Can I submit the same proposal to other programs or solicitations at NSF?**

No. NSF prohibits PIs from submitting the same or a substantially similar proposal to more than one program or solicitation at NSF. Please be aware that submission of duplicate or substantially similar proposals concurrently for review by more than one program at NSF without prior NSF approval will result in the return of the redundant proposals.

14. **Can I obtain a waiver of the page limitation for the project description if my project is large and complex, or if my project includes multiple organizations?**

No. All proposals must adhere to the page limit given in the solicitation. Note that "Results from Prior NSF Support" has been moved to "Supplementary Documents" for this solicitation.

15. **Do all proposals require a Data Management Plan?**

All proposals are required to have a Data Management Plan (Supplementary Document). The proposal must include a section that describes data and model sharing plans (in the Data Management Plan). Please note that the supplementary documents should not repeat the information in the body of the proposal, but provide concise information as defined in the NSF PAPPG and in the Proposal Preparation Instructions section of the SitS solicitation. Please note that Data Management Plan will be included in the merit review of the proposal.

16. **Do all proposals require a Project Management Plan?**

Yes. All proposals submitted are required to have a Project Management Plan. This plan (up to 3 pages long) should appear in the Supplementary Documents as described in the proposal preparation section of this solicitation.

17. **I submitted my proposal to NSF and my project was chosen for funding by USDA NIFA. What will I need to do to get my award?**

For proposals selected for funding by USDA NIFA, the US PIs will be asked to withdraw their proposal from NSF and resubmit it to USDA NIFA in accordance with instructions given by the cognizant NIFA Program Officer. You will be personally contacted by this program office and provided with detailed instructions on how to resubmit your proposal to USDA NIFA (such as changing the budgetary indirect costs). Your proposal will not need to compete again, as it has already been reviewed through the joint NSF/USDA NIFA SitS process detailed in this solicitation. Project funds will be dispersed to your

organization through the Automated Standard Applications for Payment Systems (ASAP), operated by the Department of Treasury's Financial Management Service. For more information see https://nifa.usda.gov/tool/asap.

18. **All or part of my proposal was selected for award by USDA NIFA. Are there any additional post-award management and post-award activities that will be required beyond the post-award reporting requirements of either NSF or USDA NIFA?**

Post award management will be done jointly with NSF. In addition, two PI meetings will be held jointly by NSF, USDA NIFA, and, UKRI (UKRI previously was a part of SitS and is involved in all SitS PI meetings). All projects funded by USDA NIFA will need to submit their project reports through the USDA NIFA reporting system. When projects are jointly funded through NSF and USDA NIFA, they should submit a unified annual report that is a summary of the outcomes, impacts, and progress of the entire project. Reports should be drafted by the team, but will need to be submitted to both NSF and USDA NIFA to meet the federal grant reporting standards of each agency. A similar report can be submitted to the reporting systems of both agencies to present a unified annual report.