



National Science Foundation
4201 Wilson Boulevard
Arlington, Virginia 22230

NSF 14-106

Dear Colleague Letter: Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE)

BACKGROUND

The Integrated NSF Support Promoting Interdisciplinary Research and Education (INSPIRE) pilot seeks to support bold interdisciplinary projects in all NSF-supported areas of science, engineering, and education research. INSPIRE has no targeted themes and serves as a funding mechanism for proposals that are required both to be interdisciplinary and to exhibit potentially transformative research (IDR and PTR, respectively). Complementing existing NSF efforts, INSPIRE was created to handle proposals whose:

- Scientific advances lie outside the scope of a single program or discipline, such that substantial funding support from more than one program or discipline is necessary.
- Lines of research promise transformational advances.
- Prospective discoveries reside at the interfaces of disciplinary boundaries that may not be recognized through traditional review or co-review.

To receive funding as an INSPIRE-appropriate project, all three criteria must be met. INSPIRE is not intended to be used for interdisciplinary projects that can be accommodated within other NSF funding mechanisms or that continue well-established practices.

The implementation of the INSPIRE pilot is based on two overarching goals:

Goal 1: To emphasize to the science, mathematics, engineering and education research community that NSF is welcoming to bold, unconventional ideas incorporating creative interdisciplinary approaches. INSPIRE seeks to attract unusually creative high-risk/high-reward "out of the box" interdisciplinary proposals.

Goal 2: To provide NSF Program Officers (POs) with additional tools and support to engage in cross-cutting collaboration and risk-taking in managing their awards portfolios.

INSPIRE supports projects that lie at the intersection of traditional disciplines, and is intended to 1) attract unusually creative high-risk / high-reward interdisciplinary proposals; 2) provide substantial funding, not limited to the exploratory stage of the pursuit of novel ideas (unlike NSF's EARly-concept Grants for Exploratory Research, or EAGER); and 3) be open to all NSF-supported areas of science, mathematics, engineering, and education research. NSF will initiate an external formative assessment to test whether the INSPIRE pilot is achieving program and portfolio-level goals.

NSF support for INSPIRE projects is subject to the availability of funds.

SCOPE OF THE INSPIRE PILOT

- Proposals meeting INSPIRE criteria will be considered for funding on any NSF-supported topic.
- Proposals in response to this Dear Colleague Letter (DCL) may be submitted after August 01,

2014.

- Awards will generally support an individual PI or a small team.
- An INSPIRE award must be substantively co-funded by at least two intellectually distinct NSF divisions or disciplinary programs.
- A maximum budget of \$1 million applies for INSPIRE proposals/awards regardless of the number of sponsoring programs beyond the minimum of two.
- Duration may be up to 5 years.

ELIGIBILITY FOR FUNDING UNDER THE INSPIRE PILOT

Proposals may be submitted by:

- Universities and Colleges - Universities and two- and four-year colleges (including community colleges) accredited in, and having a campus located in the US, acting on behalf of their faculty members. Such organizations also are referred to as academic institutions.
- Non-profit, non-academic organizations: Independent museums, observatories, research labs, professional societies and similar organizations in the U.S. associated with educational or research activities.
- NSF-sponsored Federally Funded Research and Development Centers (FFRDCs). Non-NSF-sponsored FFRDCs are not permitted to submit proposals under this INSPIRE DCL.

APPROPRIATENESS OF PROPOSALS FOR THE INSPIRE PILOT

INSPIRE is not intended to be used for interdisciplinary proposals that are appropriate for existing funding mechanisms or that continue well-established practices.

Prospective PIs must receive approval to submit a proposal from at least two NSF Program Officers, in intellectually distinct programs, whose expertise is most germane to the proposal topics. Consultations with POs prior to submission are required in order to aid in determining the appropriateness of the work for consideration under the INSPIRE mechanism. Only after approval is provided by at least two NSF POs in distinctly different research areas may a proposal be submitted.

INSPIRE PROPOSAL SUBMISSION

- INSPIRE proposals must be compliant with the NSF Grant Proposal Guide (GPG), found at http://www.nsf.gov/publications/pub_summ.jsp?ods_key=gpg, unless a deviation from the standard proposal preparation instructions is indicated below.
- NSF will not accept collaborative INSPIRE proposals for a single project submitted separately from multiple organizations. A multi-organization INSPIRE project must be submitted as a single proposal requesting a single award with subawards administered by the lead organization.
- The project title on the proposal Cover Sheet will be preceded by the prefix "INSPIRE:" to distinguish the submission from a regular proposal that would go through a regular review process.
- Documentation from at least two NSF program officers confirming approval to submit a proposal must be provided in the Special Information and Supplementary Documentation section of proposal. ***An INSPIRE proposal submitted without the required program officer authorizations will be returned without review.*** This documentation represents the program officer's preliminary judgment that the project *might* be appropriate for consideration under the INSPIRE grant mechanism; it is *not* a commitment to recommend support of a proposal with program funds. If the program officers find that the proposal idea is more appropriate for a regular review process than for INSPIRE, or that the idea does not appear to be promising as an INSPIRE project, they will so inform the principal investigator(s).
- Requests may be for up to \$1,000,000 and up to five years in duration. The award size and duration will be consistent with the project scope.

- The proposal must explicitly address how the project is better suited for INSPIRE than for a regular NSF review process.
- The proposal will be submitted electronically via FastLane or Grants.gov to one of the prospective co-funding programs, with the other program(s) identified on the proposal Cover Sheet.

INSPIRE PROPOSAL REVIEW CRITERIA

The standard NSB-approved merit review principles and criteria of intellectual merit and broader impacts apply, as augmented by:

Intellectual merit (interdisciplinarity): An INSPIRE proposal must address questions at the interfaces of more than one discipline, as opposed to incorporating disciplinary contributions additively. The proposal must identify and justify how the project is interdisciplinary, for example by:

- Combining concepts/methods from multiple fields in new, surprising ways;
- Proposing problem-driven research that requires a comprehensive and integrative approach to a grand challenge issue;
- Raising new fundamental questions or interesting new directions for research at the interface of disciplines; or
- Making major changes in understanding by integrating existing concepts or methods in new ways to address complex phenomena.

Intellectual merit (transformative potential): An INSPIRE proposal must be potentially transformative. The proposal must identify and justify what is potentially transformative in the project, by showing specifically how at least one of the following characteristics is fulfilled:

- Challenges conventional wisdom;
- Leads to insights that enable new techniques or methodologies; or
- Redefines the boundaries among disciplines of science, mathematics, engineering, or education.

The justification must be specific, e.g., what form of conventional wisdom is being challenged and what is the pathway and potential for overturning it.

Broader impacts: Unusual promise for societal benefit is highly valued in a proposal, in the spirit of the NSF strategic plan goal to innovate for society.

The proposal must address explicitly how the project is better suited for INSPIRE than for a regular NSF review process. For example, if the project is of such a high-risk nature that it could meet resistance from conventional reviewers, this could be explained and justified.

INSPIRE REVIEW PROCEDURE

- Only internal merit review is required for INSPIRE proposals. Under rare circumstances, Program Officers may elect to obtain external reviews to inform their decision. If external review is to be obtained, then the PI will be so informed in the interest of maintaining the transparency of the review and recommendation process. The two standard NSB-approved merit review criteria will apply. Additionally, the interdisciplinarity and transformative potential of the project will be evaluated within the intellectual merit of the proposal.
- On the basis of the review criteria, the cognizant program officers will decide whether to recommend an INSPIRE proposal for co-funding from their programs. An NSF working group, made up of representatives from all NSF directorates and the Office of Integrative Activities (OIA), will be asked to validate each award recommendation regarding its

appropriateness for the Foundation-wide interdisciplinary INSPIRE award portfolio.

- Renewed funding of INSPIRE awards may be requested only through submission of a proposal that will be subjected to full external merit review. Such proposals may be designated as "INSPIRE renewals".
- A decision and feedback will be sent to the principal investigator(s) explaining the rationale for the decision. No reconsideration of declined INSPIRE proposals is allowed. By selecting the INSPIRE pilot, the principal investigator and submitting organization choose an alternative review process and waive the option of reconsideration. This is analogous to the Proposal and Award Policies and Procedures Guide (PAPPG) provision for the existing Grants for Rapid Response Research (RAPID) and EAGER mechanisms.

Your questions, feedback, and most of all, your exceptionally creative proposals are welcome as we continue to move forward.

In order to begin the inquiry process, prospective INSPIRE PIs should contact directly only those NSF Program Officers whose expertise is most germane to the proposal topics. The signatories to this DCL are NOT points of contact for such inquiries. Additional questions can be directed to inspire@nsf.gov.

Sincerely,

Wanda E. Ward, Office of Integrative Activities

John C. Wingfield, Directorate for Biological Sciences

Farnam Jahanian, Directorate for Computer and Information Science and Engineering

Joan Ferrini-Mundy, Directorate for Education and Human Resources

Pramod P. Khargonekar, Directorate for Engineering

Roger Wakimoto, Directorate for Geosciences

F. Fleming Crim, Directorate for Mathematical and Physical Sciences

Joanne Tornow, Directorate for Social, Behavioral and Economic Sciences