Addressing Merit Criteria in an NSF Proposal

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Overview

• Responsive proposals to the NSF must address both the program criteria and the merit review criteria
  – Program criteria – the types of projects that the program is designed to fund
  – Merit Review Criteria – basis for the review of the proposal

• Section VI: NSF Proposal Processing and Review Procedures
  – Section A - Merit Review Criteria
    • Includes the standard Merit Review Criteria along with any solicitation specific review criteria.
  – Section B – Outlines the Review and Selection process
Merit Review

• When evaluating NSF proposals, reviewers will be asked to consider
  – what the proposers want to do,
  – why they want to do it,
  – how they plan to do it,
  – how they will know if they succeed, and
  – what benefits could accrue if the project is successful.

• These issues apply both to the technical aspects of the proposal and the way in which the project may make broader contributions.
Merit Review

• Reviewers will be asked to evaluate all proposals against two criteria:

• **Intellectual Merit:** The Intellectual Merit criterion encompasses the potential to advance knowledge; and

• **Broader Impacts:** The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.
Elements Considered for Both Criteria

• What is the potential for the proposed activity to
  – Advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
  – Benefit society or advance desired societal outcomes (Broader Impacts)?
Elements Considered for Both Criteria

• To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
  – Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale?
  – Does the plan incorporate a mechanism to assess success?
Elements Considered for Both Criteria

• How well qualified is the individual, team, or organization to conduct the proposed activities?

• Are there adequate resources available to the PI (either at the home organization or through collaborations) to carry out the proposed activities?
**Additional Review Criteria**

- Must be addressed in the proposal as well
- A solicitation specific list of review criteria apply to all CC*IIE proposals
  - Check the solicitation for the specific list
  - All require a campus cyberinfrastructure plan
- Pay careful attention to all the solicitation instructions
  - Page limits, required components, etc
  - All elements are taken into account when reviewed
Techniques for Addressing Merit Criteria

- Specifically mention the review criteria
  - Make sure you address all the merit review criteria directly and specifically
    - Including the solicitation specific review criteria
- Include sections in the proposal that highlight your responses to the review criteria
  - Should be consistent with the rest of the proposal text
  - Helps the draw attention to the review criteria
- Use sentences that directly tie elements of your proposal to the specific review criteria
  - The intellectual merit of the project is ...
  - The broader impact of the project is ..
- Refer to the merit criteria appropriately throughout the text of the proposal
Example: Intellectual Merit

From: Award Abstract #1340992

CC-NIE Network Infrastructure: Building a ScienceDMZ for Enhanced Engineering and Science Research (Bruce Taggart, Richard Sause, Peter Bryan, Michael Chupa; Leigh University)

The network enhancements provided by the project consist of upgrading the Imbt core network infrastructure with gigabit connectivity for improved bandwidth supporting large dataset transfers. This project also creates a campus ScienceDMZ, greatly enhancing long-haul transfer of large data sets with external research partners and collaborators working with ATLSS, NEES@Lehigh, and other campus research centers such as Lehigh's Center for Advanced Materials and Nanotechnology.
**Example: Broader Impact**

From Award Abstract #1341005  
Collaborative Research: CC-NIE Integration: Developing Applications with Networking Capabilities via End-to-End SDN (DANCES) (Kathy Benninger, Joseph Lappa, Gwendolyn L Huntoon; Carnegie Mellon University)

Knowledge gained through DANCES is being disseminated through educational programs offered by the participating institutions and at existing community workshops, meetings, and conferences. The insights and experience obtained through DANCES will promote a better understanding of the technical requirements for supporting end-to-end SDN across wide area and campus cyberinfrastructure. The resulting SDN-enabled applications will make the request and configuration of high bandwidth connections easily accessible to end users and improve network performance and predictability for supporting a wide range of applications.
Techniques for Addressing Merit Criteria

• Read through the previous award abstracts
  – Where the above examples were taken from
  – Provides insight into what got funded
    • Thus what the reviewers were looking for

• Use an unbiased editor towards the end of the writing process
  – Ask to review for merit criteria as well as overall content