

**In preparing proposals, it may be helpful for you to know the process that proposal evaluation is generally performed at NSF:**

### **STEP 1**

Previous to panel meeting, panelists individually review and provide comments per a number of proposals that are in areas of interest/relevant to individual panelist.

NSF Criteria:

Criterion 1: What is the intellectual merit of the proposed activity?

- How important is the proposed activity to advancing knowledge and understanding within its own field or across fields?
- To what extent does the proposal suggest and explore creative original concepts?
- What will be the significant contribution of the project to the research and knowledge base of the field?
- How well conceived and organized is the proposed activity?
- Is there sufficient access to resources (equipment, facilities, etc.) to accomplish the task?
- How well qualified is the team (the Principal Investigator, co-PIs, sub-contracts, etc.) to conduct the proposed activity?

Criterion 2: What are the broader impacts of the proposed activity?

- How well does the activity advance discovery and understanding while promoting teaching, training, and learning?
- How well does the proposed activity broaden the participation of underrepresented groups (e.g. gender, ethnicity, disability, geographic, etc.)?
- To what extent will it enhance the Infrastructure for research and education, such as facilities, instrumentation, networks and partnerships?
- Will the results be disseminated broadly to enhance scientific and technological understanding?
- What may be the benefits of the proposed activity to society?

### **STEP 2 – Proposal Review Panel**

Phase I:

Panel discusses and arrives at a Panel Summary regarding proposal, considering individual reviews and the above criteria again. This involves individual panelists presenting their views and observations, group discussions, and a rough grouping as Highly Competitive, Competitive, Not Competitive but Resubmit, Not Competitive.

Phase II:

Panel then walks through each again, with a few sentences overview from each. At this step a proposal may be “championed” by a panelist, and similarly “rebutted” by panelist. The purpose at this stage is to arrive at a panel recommendation for each proposal, prioritized numerically in categories of Highly recommended for funding, Recommended for Funding, Not Recommended for Funding.

### Other suggestions:

- Have a clear understanding of the specific Program objectives for the Program you are applying.
- Get feedback from the Program Manager.
- Another thing I learned was that if you were not funded however in your summary, you receive suggestions to resubmit with changes – the panel really is sincere in that suggestion. If there is not a basis to refine and resubmit – they will not suggest such. It's not just a matter of trying to make the PI feel better about a loss. (That was my impression on such a response to a previous proposal).

### Other observations of qualities being considered:

What is the **advance for science**?

So what? So you have a good proposal, with good ideas, all laid out very concisely - What is the **contribution in a broader sense**? Benefits, impacts

Provide hypothesis, research questions to be addressed.

Provide **clear and concise, detailed** project task design.

This is a big one. It totally turns off the panelists, when they must attempt to read between the lines of **what, why and how** you are proposing to conduct the project.

Provide rationale, the “whys”

The **methodology** must be solid, a well defined project plan. Clean and tight.

Clearly define your design and implementation methods in detail.

**IMPORTANT!** Significant current **references** that relate to the work; demonstrating you are cognizant of other leading research in the area and are not trying to reinvent the wheel.

Do your homework on related work surveying – this must be current and from leading researchers. Support anything proposed in your description that may relate to other work or differ from other work.

**Evaluation** - Clear definition of how you will evaluate the results, testcases

Clearly **defined focus** within the realm of what can reasonably be accomplished. If the description is abstract or too broadly encompassing beyond what can possible be accomplished, it will die! And the tasks should tie in closely with a defined **scope**.

**Qualified PI(s)**. You must convince that you have assembled the team that can successfully achieve the goals and tasks. NSF does not want failures or trivial experiments.

You must establish credibility. Is the PI (and/or team) capable to perform?

PI qualifications and publications. Having a strong team to cover all elements.

Established track record in publishing and project management. If this is a new PI, they need to have demonstrated the ability to perform.

**Method of Dissemination** is important – expecting a record of publication and demonstration of project management as well as expecting discussion of how these results will be disseminated. Can be combination of publications (expecting respected publications among such), Web page, system made accessible to research community, incorporation into classrooms or student experiences, etc.

Clearly describe objectives to be built on previous successes. To have experience is a plus.

However, you must also clearly define between previous successes and where this proposal addresses new objectives. If that line is not clear, that will hamper your efforts.

Compelling evidence for your approaches, motivation explained

Innovative

An enthusiasm, excitement

Expected outcomes

Define the participation and roles of PI, co-PIs, consultants, student RAs, etc.

Clear articulation throughout your proposal.

### **Some further insights I drew.**

At the point of final rating, the following specific issues are again summarized but in only a few sentences, usually 1 sentence for each of the following:

goals, methods, scientific advance and broader implications.

Now, even if you've written a great proposal, well defined, clear and articulate, with definite intellectual merit and broader impacts, and you are a qualified PI – all can come to naught at the final rating point!

At this point, you really need to have a concept that invokes an excitement, which clearly addresses some of the important goals of the Program in a new, innovative way. Your proposal must be compelling! This is all needed in order to draw in one or more “champions” for the proposal among the panel.