

Tips for Preparing Convincing Research Proposals

1. Include a brief but convincing review of the state-of-the-art in the proposed topic. Point out how the proposed work would fit into the collective research activities in this topic, discussing any advances in the state-of-the-art that you foresee coming from this research. Doing this establishes that you are aware of the current research in the broader technical community and that you have reasonable expectations of the eventual significance of your research. Do this up front and with considerable care. It has considerable impact.
2. Carefully study the published evaluation criteria for the solicitation targeted by the proposal. Explicitly address all criteria. To neglect some evaluation criteria is to jeopardize the evaluation of the proposal, whatever the technical quality. The receiving agency is obliged by federal procurement law to consider all publically stated evaluation criteria.
3. If the agency to which you are applying is a mission agency, inform yourself about the agency priorities. Their public web site and an internet search will assist in this. This will prepare you to address all evaluation criteria that deal with agency relevance.
4. Be specific on cited agency collaborations and other relevant interactions: For such activities to be convincing, sufficient details must be given - including names, affiliations, dates, statements of who did what and why it matters. Particularly valuable is a letter of support from key contacts of relevance to the agency and to your proposal. Little value will be attached to vague claims that "relevant interactions will be sought."
5. Do not assume that the evaluating project manager will be aware of your past research contributions relevant to the proposal. This is especially important if you are a junior researcher or if this is a new research topic for you. In all cases, pay particular attention to listing your relevant, recent publications bearing on the proposal topic. This shows that you are a 'player' and have the proper and current background.
6. Be as specific as possible in directing your proposal to a potentially receptive program manager at the receiving agency. At the very least, consult the public web site for the agency which usually describes the research interests of the various project managers. If possible, list the project manager and the appropriate office designation on the proposal cover page.
7. Make a conscious effort to establish prior contact with the target project manager. Project managers vary in their preferred communication modes. Some prefer telephone calls. Others ignore the phone and rely on email. Some respond most favorably to a visit to their office; others do not. A good practice is to try approaches in the order listed above. Have patience. Project

managers, like researchers such as yourself, are busy people and may take a bit of encouragement to respond.

8. Before making contacts as just described, read the available information on the research responsibilities and interests of the project manager as recommended in item 6. In your initial contact, state up front how your proposed research would fit into his/her priorities and interests. Yes, they should be aware of how your work might be of value to their program – but it is important that you, too, are aware of this and let the project manager know it. This can go a long way to opening a fruitful technical exchange.
9. The distribution of proposals within the agencies is typically done by clerical, not technical personnel. Hundreds of proposals typically arrive at once in response to programs with stated deadlines. Mistakes are made in these distributions with likely major impact on the evaluation of your proposal - particularly in the absence of a designated office and project manager stated on the cover page. If your proposal is assigned to a project manager not interested in the research topic, the proposal is likely to be dealt with quickly and negatively. In addition to listing the carefully selected project manager on the cover page, send an informal, information copy of the proposal directly to this project manager. Mark the proposal clearly as “Information Copy.” This usually serves at least three purposes: it shows initiative and interest in the program on your part; it will give the project manager an opportunity to pre-read the proposal; it will alert the project manager to the eventual arrival of this proposal on his/her desk when the program proposals are distributed. If, in the latter case, no such proposal appears, then a query can be instituted within the agency to locate the proposal.

Comments on Interactions with Mission Agencies

All government agencies have specific and distinct missions, or reasons for being: transportation, health, labor, etc. The issues to be addressed here focus on those agencies sponsoring university research. The customary agency classification describes the NSF as a non-mission agency. This means that the majority of the NSF programs are designed to increase the knowledge base without regard to specific potential applications. Consequently, the NSF evaluation criteria reflect this broad motivation. Unless called for in the solicitation, it is best to not emphasize the scientific application of your research to the NSF.

By contrast, the mission agencies – all other federal research funding agencies – seek to increase the knowledge base for those research topics relevant to their agency missions. That does not mean that the expected direct result of their sponsored research is an application. That is beyond the scope of basic research. It does mean that sponsored research by mission agencies should have a perceived path to such applications.

Different mission agencies have distinct missions. Pay particular heed to this deceptively simple statement. It behooves you to ascertain the *current* mission priorities and goals (things change with time) of any mission agency to which you apply. You will usually be rewarded for time spent

determining such interests and priorities. Of course, your written proposal must evidence this awareness by describing the relevance of your research to stated mission priorities. It is important to bear in mind that statements you make of mission relevance must refer to the sponsoring agency addressed and not to another federal mission agency. That is, you will reap little or no benefit by pointing out to the Department of Energy that you have been working on projects relevant to the Department of Defense. Similarly, you want to point out to the Air Force what you would do for them and not what you have done for the Navy. Different agencies, different missions – even within the DoD. Still, it would pay to mention the Navy-related efforts, then go on to describe what you plan to do for the Air Force.

One consequence of this division of labor between agencies is that rarely will a proposal crafted for one mission agency be effective without suitable modifications for another mission agency. Failing to heed this will produce ‘red flags’ popping up when the second agency reviews your proposal. Make every proposal read as though the sponsoring agency is the center of your interests. The reviewing project manager will quickly detect any such omissions on your part.

Not surprisingly, the evaluation criteria for mission agency solicitations reflect, in addition to research excellence, the key concept of “relevance.” These criteria generally have roughly equal weight.