PROPOSAL WRITING: SOME PRACTICAL ADVICE

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STRATEGIES FOR SUCCESS

"*The ill and unfit choice of words wonderfully obstructs the understanding*" (Francis Bacon)

1. **Start early.** (But, don't assume that if you will not be able to meet a submission deadline or target date that you must miss a review cycle. Call the agency before the due date, explain your problem, and ask if there is a procedure for submitting late.)
2. **Read the instructions carefully** (before you write, while you are writing, and when you have finished writing). Check with your program officer to make sure your work would fit the stated guidelines. Not including all required information or not following the designated format will be noted by reviewers and program officers. Use the agency's maximum page limits as an indication of the detail expected in a proposal. Don't exceed it or try to fit the limit by squeezing too many words onto a page or eliminating spacing. At the other extreme, a proposal that is substantially shorter than the limit is probably lacking in necessary details. Avoid jargon and unnecessary abbreviations. Be liberal with headings to break up the text. (If you use number or letter designations be sure that they match in each section.)
3. **Use the same care** in preparing your proposal as you would for a manuscript being submitted to a journal. (Reviewers may comment on overall carefulness (e.g., typos), not using standard formats, missing references, etc.) Agencies generally supply only electronic copies of proposals to reviewers. If you use color, remember that reviewers may print and read the electronic copies in black and white.
4. **Make your goals specific and clear**: What questions are you asking? Constantly keep your goals in focus. Devote at least a paragraph to placing your proposed work in a long-term context. Distinguish between your overall interests and objectives and those you wish to achieve during the tenure of the proposed grant. Ensure that you have an appropriate rationale for each study and that they fit together in a coherent way. Proposing much more work than can possibly be achieved during the requested grant period is one of the most common mistakes made by first-time applicants.
5. **Explain the significance of your work.** Why is it important, to your specific area of study, and to the broader field. Link your work to the agency's, program's, or call's mission and goals. If you are requesting tax-payer money, explain the significance of your work to the general public.
6. **Describe previous work carefully and clearly**: Demonstrate you are a careful and critical scientist.
7. **Design your proposed experiments with exquisite care.** Discuss pitfalls, interpretations and strategies. How are you going to do the work? Do you have enough experience with the techniques proposed? If not, describe how you will attain it. Have you suggested appropriate methods, not ones that you think are in fashion? Make very clear which experiments you consider to be the most important and which you will drop if they appear unproductive.
8. **Get as much help as possible** from colleagues, peers and mentors from your laboratory or campus, agency publications (Program Announcements, Grant Proposal Guides, Web Pages, Funded Project Abstracts, Reports, Special Publications), program officers (incumbent and former "rotators"), previous panelists. Offer to serve as a reviewer. Ask colleagues for copies of successful proposals. Talk to your institution's grants officer.
9. **If you are continuing work initiated as a graduate student or postdoctoral fellow**, make it clear that your work will not be competing with a former laboratory. If possible, include a letter from your mentor stating that the project is now yours to pursue or that you will work in cooperation, not in competition. (Collaborators from other departments, industry cooperation, letters of support and matching funds are not requirements; however, they can help you make your case.)
10. **Revise relentlessly**, remove verbiage and unnecessary detail - be simple and concise. At the same time give enough information in each section to ensure that your reader does not have to refer constantly to other sections.

WHY PROPOSALS FAIL

"If at first you don't succeed, Try, try, try again." William E. Hickson

1. **Absence of innovative ideas and/or hypotheses**. Surveys, former studies applied in a new regions, monitoring, preparation of standards, screening of cDNA libraries, isolation and maintenance of cell lines do not in themselves constitute novel ideas, even if the work has not been done before. Funds may be requested for these activities, but usually only as part of an interesting and/ relevant research project.
2. **Errors in logic and experimental design.** Experiments will not provide results to support stated hypotheses. Methods are not described properly. Adequate controls are not included. The methods may be "fashionable" but are inappropriate for the proposed studies - simpler standard methods may give better results more quickly and cheaply. Too few samples are planned for statistical analysis.
3. **Errors in presentation and expression**. Poorly written so that the reviewers miss the point, cannot tell what questions are being addressed, or find statements ambiguous. Overcrowded writing that obscures your message. Insufficient background to support a solid rationale for undertaking studies. Sloppily written text with errors in experimental detail so that reviewers have little faith in the author's abilities.
4. **Not exciting.** For example, NSF is looking specifically for "transformative" research.
5. **PI not sufficiently experienced.** The author is attempting to enter a new area without the background and/or expertise to make the project feasible and/or has not described how s/he might gain the necessary experience. If author depends on help of another person for training or running samples, get it in writing and include it with the proposal, or have a co-PI who will complement your expertise.
6. **Unrealistically ambitious** (even after taking into account the inexperience of a new investigator).
7. **Major portions of budget are unjustified or inflated.**
8. **Proposal incomplete or incorrect** (e.g., lack of information on current and pending support, no letters of support from named collaborators, other people's work poorly referenced, etc.).
9. **Not directed toward the overall mission** of the granting agency, program or call for proposals.

REVISING A PROPOSAL

1. **Keep calm!** Consider any review as an attempt, however misguided, at constructive criticism.
2. **Read the reviews very carefully.** If your project was described poorly, your reviewers may have misunderstood your intent.
3. **E-mail your program officer** after you have read reviews, and before you begin revisions, to request advice on possible next steps.
4. **Answer** all pertinent questions or criticisms and correct errors and omissions.
5. **Add any new preliminary studies.**
6. **If one component of your proposal is clearly undesirable**, remove it and improve on other aspects or add a new one (but only if it is excellent).
7. **If you add new components based on the reviews**, do not write a new proposal. If it goes to the same reviewers, as it probably will, they will find it more difficult to review a proposal that is rewritten entirely, than one that is revised appropriately.
8. **If reviewers have mistaken your intent** (see 2), revise the writing.
9. **If reviewers question your expertise**, emphasize where you will obtain training and/or help and collaboration from your colleagues in order to successfully complete the work proposed.
10. **If reviewers criticize your budget**, your resources or your commitment, revise them (but only if the criticisms make sense). If you disagree with the reviewers, discuss it with your program officer before resubmission.
11. **For all of the above**, get advice from colleagues and mentors in your own field, in related and unrelated fields, from administrators at your own institution, and the program officer handling your proposal.