Fundamentals of grantsmanship

The Basic Principles of Grantsmanship

- A good idea is necessary but not sufficient.
- A successful grant application is an exercise in communication.
- The System helps those who know The System.
- Don't quit; revise and re-submit.

Before You Write: Doing Your Homework

Know the Grantmaker

Grantmakers, whether government or non-governmental, don't fund what you want to do; they fund work that furthers their mission, which is evidenced in what work they funded recently and in program announcements, requests for grant applications, requests for contract proposals or tenders, and annual reports.

A successful grant proposal submitted by someone else to a specific funding agency is a good example - analyze what made it successful. Know the funding limits, stated or implied, of the grantor when designing your budget request. Use the telephone to get to know granting officers and solicit their expert advice. Poll your colleagues; consult your institution's Research Office and Research Accounts Office; use any legal means you can think of to learn the grant maker's priorities.

Know your colleagues, and ask them for help.

Research is highly interdisciplinary and no one person can do it all. Colleagues are essential for ideas, critical review, teaching you techniques you don't know, and suggesting funding sources. Colleagues often have experience reviewing grants and may know the work of people who will review your grant. As you mature in your discipline, cultivate relationships with younger scientists with fresh ideas and new techniques.

Know yourself: time, capabilities, limitations.

Know what you do well and have examples of data and publications to prove it. Know what you cannot do and seek collaboration. Give yourself far more time to write a proposal that you think you need; six months is a nominal time. If you get your thrills from pushing deadlines, save them for some project other than your grant.

NO substitute for a good idea: know your subject.

Know your subject and the pertinent literature, so that you can propose something new, important, or needed that fills a gap in our knowledge or solves a problem. Then communicate with potential grant makers to query their interest. Find a good idea that turns you on - your enthusiasm for the work must show through. Be sure you are up-to-date on techniques, literature, and interpretations of ideas or theories. Specialize enough to develop and maintain your expertise and reputation - don't "subject hop" continuously, but don't get mired in yesterday's research either.

Writing the Grant

It takes times, and more time...

Writing the text of the research plan is only half of the work. The rest is assembling budgets and boilerplate, getting the proposal through internal reviews, etc. Consult someone who has been through it so that you know the drill.

It takes about 120 hours, broken into many segments, to write a typical grant. A primary reviewer, assigned to read the proposal and write a critique, spends an average of 7-8 hours reviewing the grant. A reader, who does not have to prepare a written evaluation, averages less than 1 hour reading the proposal. In the Review Panel meeting, the members spend slightly more than 20 minutes discussing the critiques and voting a priority score on the grant. This time compression points out the importance of clear communication of your goals, methods, and the significance of your work.

Revise, revise again, and give yourself plenty of time to do it (about two weeks for each draft).

There is no substitute for a good idea, but a successful grant application is an exercise in communication.

A good idea is **necessary but not sufficient**. You must develop your idea in a clear, attractive, persuasive, convincing way. Match the idea with a workable plan of action.

Get three kinds of reviewers for your proposal drafts: someone very knowledgeable in your field, an intelligent non-expert, and a good scientific editor. Don't ever assume your reader knows what you mean; explain it but do so without insulting his/her intelligence. Keep abbreviations, acronyms, and discipline-specific jargon to an absolute minimum.

Answer the questions: Who, What, How, How much, Why are you doing the work, Why is it worth doing, Where is the work going?

Different parts of a grant application allow you to answer these questions:
    Who-biographical sketch, preliminary data;
    What-specific aims, methods of procedure;
    How-methods of procedure, experimental design;
    How much-budget;
    Why are you doing it-significance or rationale, preliminary data, biographical sketch;
    Why is it worth doing-significance;
    Where is it going-significance, experimental design, particularly the sequence of studies.

When all else fails, read the instructions

Follow the rules on format, length of various sections, and elements to be included. You can fail to be funded for what you leave out as well as what you put in. Don't get creative here - give the reviewers all the information they need in the format they expect to see.
Try to get a copy of a successful grant as a model.

Tell them what you are going to tell them, tell them, and then tell them what you told them.

Repeat the same information, ideas or themes in a consistent way throughout the proposal. For example, have a section in the methods for each specific aim, and repeat the aim verbatim at the beginning of that section.

Write the abstract last, so that it will be an accurate summary as well as a preview of the grant.

Think like a scientist.

Define problems, ask questions, formulate hypotheses, and design experiments that test the hypotheses. Keep asking yourself, "What is the simplest experiment I can do that answers my question (i.e., tests my hypothesis)?" Avoid experiments that only collect data. If a reviewer

sees a fishing expedition, your proposal is sunk. (There may be an exception to this when investigating a new subject; some baseline data gathering may be needed.)

Focus your thinking and writing.

KISS (Keep it simple [and short, and succinct], sweetheart.)

The Review Process: Knowing What Happens After You Write Helps You Write

Get inside the reviewer's head. What do reviewers *really* look for?

Reviewers look for evidence of scientific reasoning (formulating hypotheses and designing experiments to test them), good ideas, focused writing, and evidence of productivity and knowledge of proposed techniques. Make sure your writing reflects this. *Some* reviewers may not be experts in your area of research, and you are just as obligated to communicate with them as with the leading researchers in your field who know all the techniques and jargon.

Little things mean a lot.

Reviewers like attention to details - good grammar, correct spelling, no typos, following the instructions, an easy-to-read format and neatness. If you can't write the grant carefully, how carefully will you do the research? Reviewers don't like surprises - altered format, instructions ignored, information missing or abandoned to the appendix rather than placed in the body of the proposal.

A Word About Revising & Resubmitting

The only people who don't make mistakes are the ones who don't do anything; so spend no more than one day wallowing in discouragement if your first proposal is rejected.

The very best scientists fail. Very good, fundamentally new ideas may have a harder time cracking the funding barrier than "pretty good" ideas. If the reviewers "just didn't understand you", YOU are responsible for that.

Try, try again, but remember that there is a point of diminishing returns.

Always be prepared to revise. Take reviewers' criticisms seriously but not slavishly - your ideas and your enthusiasm for them must come through in a revision. Sometimes a second or third revision is as good as it is going to get but fails to be funded because the ideas aren't getting any better. This is difficult to recognize by one's self; ask a colleague to help determine if you have reached this point.

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