Proposal writing – Tips & Tricks

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General tips

* If it is a collaborative proposal, clearly outline the responsibilities of the different participants and set clear deadlines on when different components are to be done.
* Hire a proofreader if you can’t bear to read through it a few more times!
* Show your proposal to someone who has served on a proposal review panel before, or someone from your university Writing Center (but this will require that you finish it with extra time in advance)
* Write in such a way as to make it as easy as possible on the reviewer. Don’t make the reviewer work hard to read the paper
* Don’t assume they have read your previous papers or are experts in your field, but also don’t insult them by talking down to them.
* Imagine you are writing for a colleague in your department whom you respect but is not in your field, i.e. an educated professional.
* A great way to show competence is through pilot studies, demonstrations, test runs, etc. If you will be doing computer modeling of data, do a test run with synthetic data to see the kinds of results you might come up with. If you are doing lab work, do some test runs. If you are doing surveys, do a small sample.
* If you don’t have experience/expertise, be sure to explain how you will get it (perhaps through a collaboration with someone else who is an expert in that field).
* Use the space allotted in the proposal – use the minimum margins and the maximum number of pages, but don’t cram material in to make it look overstuffed, or, don’t use a large point size that makes is seem you don’t have much to say but are just filling out the pages.
* Making it work out just right will take editing. Leave time for it!
* “Eschew obfuscation!”
* Humor is delicate. A small amount, used judiciously, can work very well (it can help to make the reviewer take your side and see things from your perspective). However, it can also destroy a proposal.

Sections of the proposal – General tips

* The first sentence of your Abstract and Project Summary and Project Description should always begin with something like “We propose to….”
* In each section, have a clear statement, perhaps in bold, that summarizes the main point of that section.
	+ “The people involved in the project are…”
	+ “The PI has demonstrated the ability to carry out this experiment by…”
	+ “The hypotheses that we will be testing are…”
	+ “The mechanisms that we will use to assess the success of our experiments are…”
* Repeatedly go through the exercise of: Tell them what you are going to say, say it, and then tell them what you said. Do not make the reviewer work to get the main points.

Sections of the Proposal: Rationale/Motivation/ Introduction/Statement of Need

* Explain why this project is important
* Include a survey of relevant literature, both to set the stage, show that people are working on this project (i.e., it is important), and show that you are aware of the current literature
* Identify the gaps in the existing literature and show where your work will fit in, where you are going to make a contribution!
* Do not simply say that the previous work has been inadequate (those people might be reviewing your proposal!), but rather what the limitations have been and how your work will improve upon this

Sections of the Proposal: Specific Project / Statement of Objectives

* Explain how your proposal will fill in the gaps identified in the first part.
	+ What specific goals are you trying to achieve?
	+ Why is this the right time to be doing this project?
	+ Be specific in identifying the measurable criteria you will use to meet those goals
* Never just say that your "data will be analyzed" -- how will they be analyzed?
	+ What will you be looking for and in what ways?
	+ How will you know you are meeting your goals?
* Show you are aware of existing approaches, and that you have anticipated and given some thought to addressing at least the current standard problems associated with the methods you have chosen.
* You will still need to cite existing literature here, to show how your project specifically builds upon past research. It will not look good if you propose inventing the wheel. It has been done before.
* Explain how your resources/experience are adequate to do the work proposed
	+ If not, will you be partnering with someone else who does have the resources/experience? Will you be asking for equipment?
* Who will be doing what? Describe and define all participants and their roles.
	+ Provide a brief timeline of what will be happening over the duration of the grant.
	+ Be as detailed as you reasonably can (in no less than 6-month divisions).
	+ You are not obligated to stick to this, but it greatly helps to show that you have a sense of how to go about the details of the project.

Sections of the Proposal: Statement of Broader Impacts

* Broaden back out and describe how your results will fit in the big scheme of research.
* How will you disseminate the information from this grant?
* How will it inform future research?
* What future directions do you plan to follow to continue to push your field ahead?
* Where do you see the field needing to move in the future?
* Balance these 3 parts appropriately. Don’t spend 12 pages on the background and have 3 left over for your actual project!
* How will this influence scientists in *other* fields?
* Are there societal or public benefits to the research effort?
* Will any publicly-accessible products, data sets, codes, educational materials, museum displays, media products, (etc.) be produced?
* What educational opportunities are you providing?
* Are you allocating sufficient resources to the broader impacts?

Sections of the Proposal: Results from Prior Funding

* Give a brief description of the overall project.
* Give a brief description of the main scientific results.
* List the references that have been produced using at least some part of funding from this.
* If you don’t have prior support, put in one sentence to this effect.
* Include Broader Impacts
* Put this at the beginning, to set up your project
* A page or so is good for this (out of a 15-page NSF proposal)

Sections of the Proposal: References

* Make sure that any papers that you cite are in your reference section.
* Don’t pad the reference section with references that you don’t cite.
* Don’t overwhelm the reader with references – there is no need to justify obvious statements with citations.
* However, it is very important to demonstrate that you know the literature and cite important/relevant references.
* It is OK to acknowledge some old and foundational references, but most of your references should be recent.
* You need to demonstrate that you are aware of the research that is being done now and not 30 years ago.
* Be sure to include references to your own previous works
* It is especially useful to identify any debates that exist on your topic of research, citing the relevant papers that define the debate.
* Cite studies that are close to your study, that provide external benchmarks and related measures.
* Be sure to cite a reference of someone who you think could possibly be a reviewer.

Sections of the Proposal: Budget

* Be as accurate and detailed as possible
* Don’t hesitate to include line items for small things (they add up, and it looks like you have thought it through)
* It is OK to estimate a budget line item, but give a justification (or formula) for how you came up with that estimate
* For large material purchases, obtain bids (if appropriate)
* Build in inflation for multiyear grants
* Publications (assume 2+, in color; get quotes! They can be very costly)
* Ask for what you need – do not underestimate what it will cost.
* The more justification you give (including actual research amounts), the less a program officer is likely to reduce your budget.

Sections of the Proposal: Summary

* Often there is a 1-page “Summary” that is required. It is NOT an abstract, but rather a summary of the entire project: goals, expected outcomes, hypotheses to be tested, methodology, participants, duration, cost, etc. It is like a mini-proposal
* Write this LAST, after everything else
* There may be specific format requirements or items that must be included – be sure to check proposal guide!