10 Tips for Successful Grant Writing

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When professors advise early-career academics on grant writing, we often focus on the common mistakes and pitfalls. But up-and-coming researchers don't just need advice on what not to do.

They need to know what goes into a successful grant proposal, too. I have some suggestions on that front — that I have gleaned from teaching grant writing for 20 years, and being continually funded by the National Institutes of Health as a principal investigator. Here, then, are my top 10 tips on how to draft a grant proposal that has the best odds of getting funded.

Tip No. 1: Start small and early. As a postdoc or a new faculty member, you are often tempted to try to "land a big grant" quickly — even in the absence of a track record. You would be better served securing a series of small grants first. Given that grant funding today is more difficult to obtain than ever before, starting early in your career and capitalizing on the advantages of your "early-career" status is key.

Grant programs specifically aimed at new faculty members and postdocs provide the highest chances for success. Those grant programs typically do not require significant preliminary data. Instead, funding decisions rely most heavily on your promise and potential as a candidate — your training to date, your mentors, and your topic's importance.

Another key advantage of early-career grant programs: You are competing against a smaller pool of people — as opposed to regular grant programs where you are competing with a large pool of midcareer and senior investigators who already have established track records.

Keep in mind: Your eligibility for early-career grants will expire in a few years, so seize the opportunity while it lasts.

Tip No. 2: But dream big (with the help of a mentor). Early on in your career, it's critical to envision your ultimate large grant. Typically a major grant (for example, an NIH R01 grant) would include five aims. Once you've envisioned your big grant and its five aims, your next steps become clear: Bit-by-bit, bite off small chunks of that larger project by writing small grants designed to support one or more of your five specific aims.

An overly ambitious application is one of the most common fatal flaws of an early-career application.

A series of small awards will not definitively achieve your aims, as those grants will be limited by small sample sizes and budgets. But small grants will show that each of your aims is feasible — that you can "pull it off" (more about that in Tip No. 5). This approach is critical as grant-review panels often see a large grant as the culmination of a growing body of work progressing from modest seed grants to larger and larger awards, in a cumulative fashion.
A key factor in developing a vision of your ultimate large grant will be the advice of your mentor(s). If you do not have a mentor in your department ask the chair to assign you one. It is also usually considered acceptable to seek out your own mentor. Indeed, many early-career academics assemble a mentorship team, in which each member provides guidance on different career facets (i.e., a teaching mentor, a research mentor, a work-life mentor). Consider approaching people on other campuses as well as your own.

Tip No. 3: Look at who and what got funded before. Grant agencies typically list previous award recipients online. If not, your own institution's grants office can provide you with a list of professors on your campus who have obtained the same grants as the ones you're seeking. This list is critical as it shows the agency's interest (or lack thereof) in supporting your area of research.

With a few names in hand, your next step is to ask those recipients if they are willing to share their successful applications with you — to give you a sense of the appropriate scope and depth of a successful research plan. Frame your request in that manner and people are typically happy to share.

Funding agencies may also post a list of prior and current grant reviewers and their affiliations online. Review the list and ask yourself if their expertise overlaps with the aims and methodology of your study. It would be a high-risk proposition to write a grant for a foundation that has never funded an application in your area of expertise before.

Some agencies post full abstracts online of both active and prior awards. They can give you a critical sense of what has been successful. Looking at the number of specific aims and the range of acceptable sample sizes will provide you with key insights as to what has appealed to your target agency in the past.

Tip No. 4: Spend half of your time on the abstract and aims. Writers of successful grant applications typically report that they spent 50 percent of their time on writing and revising their abstract and aims. When you finally start drafting your proposal, the specific aims should be the first thing you write — well before the background or methods sections.

Send a one-page sketch of your project abstract and aims to your mentor and co-investigators early in the grant-writing process with the goal of kicking off an iterative process of review and revision.

Why is this page so critical? Because of the nature of the peer-review process. Typically, only three or four academics are assigned as primary and secondary reviewers of your grant. The majority of review-panel members will only have read your proposal's abstract. Therefore, it must not only provide a clear snapshot of the entire study, but also convey what is novel about your application.

Tip No. 5: Show that you can pull it off. This is a critical factor for reviewers. How do you demonstrate you can feasibly conduct the work?

- First, if possible, collaborate on the grant with senior investigators who have conducted similar projects. A senior scholar's involvement will be a key factor supporting your potential for success, particularly if you are early in your career.
- Don't let co-investigators appear in name only. Show established working relationships with them either via co-authored publications, co-presentations, and/or via an established mentoring relationship (e.g., as part of a training grant). Of course, much of this information will appear in the biosketches in your proposal, but you cannot rely upon reviewers to connect the dots. Make it easy for reviewers by clearly noting these prior collaborations in your "preliminary studies" section.
- Finally, present evidence that you have conducted smaller-scale feasibility studies. That reassures reviewers that you, as a principal investigator, will be able to conduct your proposed aims and, ideally, translate that work into publications.

Tip No. 6: Match your methods and aims. By that I mean, include methods in the proposal that relate directly to each of your study's aims and don't include additional methods that do not correspond to any aims.

It is a great temptation among early-career researchers — driven to impress grant-proposal reviewers — to inflate the number of questions and methods their research project will involve. In actuality, doing that will most often backfire. An overly ambitious application is one of the most common fatal flaws of an early-career application.

Instead, a focused methodological plan directly tied to your specific aims will be the most impressive to reviewers.

Tip No. 7: You can never have too many figures or tables. They make it easy for a reviewer to quickly grasp your proposal, as compared with dense text. In addition, the act of creating them will help you to crystallize your specific aims and study methods. Figures and tables can save space — reducing the amount of text necessary — which is critical to meeting the page limitations of most grant submissions.

This tip is relevant for every section of your grant application: Figures can be used to show how your specific aims interrelate, to depict study designs, and to demonstrate your anticipated results.

Tip No. 8: Seek external reviews prior to submission. The same person cannot write a grant and review it for clarity. You will miss errors, simply by virtue of your familiarity with the material. So ask colleagues to read the application. Even a generalist can read your grant proposal with the following questions in mind: Are the goals clearly stated? Does the grant extend prior work in the field? What is the impact of your potential findings?

In fact, it may be preferable for some of your proofreaders not to have expertise in your area at all — given that members of the grant-review panel will not have expertise in every aspect of your proposal.

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Putting your proposal through a mock review panel on your campus can vastly increase your chances of funding. For example, mock NIH panels simulate the agency's review process by relying upon professors who have NIH experience to play the role of reviewers. Similarly, "Chalk Talk" seminars are also highly effective — these are informal opportunities to discuss your ideas and/or specific aims with your departmental colleagues early in the process to get immediate feedback.
If your department does not currently provide such review panels or forums, see if you can start them.

Tip No. 9: Be kind to reviewers. Making them happy should be one of your top goals. Reviewers are typically burdened with an onerous number of applications to read — in addition to their own responsibilities as researchers. The most effective way to leave reviewers happy: Use the grant-review criteria as subheadings in your proposal, making it easier for the panelists to fill out their review forms.

For example, reviewers typically have to complete a section on "Innovation." Thinking that the innovative aspects of your application are obvious is risky. Reviewers not only may not find your application as clearly innovative as you do, but they may not deduce its innovation at all. A clearly labeled subsection on "Innovation" not only saves the reviewer time, but gives you the opportunity to "educate" the reviewer on innovative aspects they may not have recognized on their own.

Tip No. 10: Choose a topic that you find interesting. There is nothing less conducive to your future success and day-to-day productivity than pursuing a topic for the wrong reasons (i.e., you're not all that interested in the topic but you think it's fundable). Having several grants in the pipeline and under review at the same time can help stack the deck in your favor. If you aren't very interested in the project, that is likely to come through in your proposal.

Good Luck!

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