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OBTAINING A RESEARCH GRANT: THE APPLICANT'S VIEW

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When I started my career—26 years ago—I had $5,000 in seed money from my university to get my research started, and no extramural (outside) funding. Today, my group (which calls itself the Center for the Psychology of Abilities, Competencies, and Expertise at Yale University) has more than $6 million in funding. Next year, who knows? My group may have a bit more, it may have a bit less, or it may have nothing. And that is the first lesson about obtaining research grants. It is an uncertain process: One never knows which grant proposals will get funded or how long one's funding will last. Even multiyear projects can disappear with the drop of a hat if Congress decides, for one reason or another, not to budget certain funds or if a foundation decides that its interests have changed.

Although funding is uncertain, there are things you can do to maximize your chances of getting and keeping your funding. This chapter discusses

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the most important of these things. My comments are based on my own experiences in trying to get funded, experiences I have heard about from colleagues, and my experience working on a panel that funded research (sponsored by the Air Force Office of Scientific Research). But do not limit your learning to my experience! Talk to others in your department or unit who are experienced in getting grants, and ask them for tips. You might even ask to see their old grant proposals, just to get a concrete sense of what successful proposals look like. You might also want to consult some other sources on getting grants, such as Browning and Browning (2001) and Orlich (1996).

In this chapter I first explain why you should consider applying for a grant. Then I briefly describe the kinds of organizations that fund research. Then I describe the process of getting funded. Next I provide some techniques to maximize the chances of your getting funded. Finally, I discuss how proposals are evaluated. In the granting business, to some extent, you "make your own luck," and I should note that there are many kinds of grants. Some grants fund research, but others fund exclusively travel, teaching, or development of particular commercial products. My comments in this chapter focus on research grants.

WHY SHOULD YOU APPLY FOR A RESEARCH GRANT?

There are several reasons why you should consider applying for a research grant. First and most important, it will provide you with funds to do your research. Even relatively inexpensive research costs *something*, and having a research grant helps ensure that you can get done the research you would like to do. Second, research grants help support students. Many graduate students are supported partly or exclusively off research grants, and without such grants, some members of the next generation of researchers might never have the opportunity to be trained. Third, a research grant can free you from responsibilities you may wish to delegate to others. For example, you may use the research grant to pay someone other than yourself to test participants or to prepare stimulus materials under your direction. Fourth, research grants can provide you with summer salary if your institution pays you for less than 12 months. Many universities do, in fact, pay salaries for less than 12 months. For example, my own university pays nine-month salaries. A research grant can provide one, two, or sometimes even three months of summer support, thus supplementing the researcher's income. Of course, when you take summer salary, you are expected to work on the research during the time you are drawing the salary. Finally, obtaining a research grant marks you as a serious scholar and can help you when it comes time for promotion and tenure decisions. At a major research institu-

tion, getting a grant may be a sine qua non for promotion or tenure. Thus, it makes sense to apply for a research grant.

WHO FUNDS RESEARCH AND HOW DO THEY FUND IT?

There are many different kinds of funding organizations. Some of these organizations are very specific in the kinds of research they fund, whereas others are more general. The main types of organizations that fund university research are universities, governmental organizations, nongovernmental organizations, foundations, and corporations.

Universities often have limited funds to support the research of their own students and faculty members. These funds may be available to anyone who applies, or may only be available to certain individuals, such as new faculty members, junior faculty members, or faculty members who have not succeeded in gaining external support. The funds are typically awarded on a competitive basis. Universities are often willing and eager to provide first small seed grants to new faculty, so be sure to check on the availability of funding from your own institution.

Governmental organizations are sponsored by the United States, Canadian, or other national, state, and local governments. Examples of governmental organizations in the United States are the National Science Foundation (NSF), the National Institutes of Health (NIH), the U.S. Military (e.g., Army Research Institute [ARI], Office of Naval Research [ONR], and Air Force Office of Scientific Research [AFOSR]), and the U.S. Department of Education (e.g., the Office of Educational Research and Improvement [OERI]). National organizations such as these have regular grant competitions, and you can find out about these competitions either through your grants and contracts office or through the agencies' websites. State and local governmental organizations may have research funds but not have regular competitions for them.

Government grants are typically for three years, although they may be for less time (such as a year) or for more time (typically up to five years). It is important to realize that a commitment by the government to fund your research for a specified period of years does not guarantee you will actually get the funding you were promised. Many variables can intervene. The agency's budget may be cut by the government, resulting in your budget being reduced or sometimes even eliminated. The agency may be dissatisfied with your progress and terminate your funding (which is relatively rare but does happen). Or the agency may change its priorities and decide your project no longer fits its goals. You should thus be optimistic that commitments to you will be met, but you should by no means feel certain of it. Most grants require progress reports at least once a year, and it behooves you to do such

reports with the utmost of care and to put your research in the most positive light possible. Some agencies also conduct site visits: Members of a team come to the site of the research to evaluate the quality of the work. These visits also should be taken very seriously.

Nongovernmental organizations are entities that are not tied to any one government or that are tied to multiple governments but that are run somewhat independently of these governments. Examples of nongovernmental organizations are the World Bank, North Atlantic Treaty Alliance (NATO), and World Health Organization (WHO). These organizations are less likely to have regular funding competitions, and you need to consult their websites or, if you have contacts, individuals within the organizations to find out about funding opportunities.

Foundations are privately owned and operated and typically are more targeted and mission-oriented than government in the particular kinds of research they will fund. Examples of foundations are the Spencer Foundation, the W. T. Grant Foundation, the John Templeton Foundation, the James McDonnell Foundation, and the MacArthur Foundation. There are hundreds of foundations that fund research, but the chances are that only a small number, if any, will fund the particular kind of research you want to do.

Corporations are private entities. They may be for-profit or nonprofit. Corporations tend to be the most selective in the kinds of research they fund. Typically they are interested in research that will improve sales of their products or services. You need to be especially careful in selecting corporations to which to apply for funding. Sometimes corporations have rules regarding publication of data that render problematical the receipt of funding from them. For example, they may insist on reviewing potential publications before they are submitted or they may have a nondisclosure policy that forbids publication at all. If the research does not go the way they hoped, they may lose interest in continuing funding of the research and may even hamper the research enterprise. It is therefore important to check carefully the terms to which you agree to make sure that the terms suit you as well as the corporation.

When we apply for research funding, we often investigate funding organizations that we think other researchers are *less* likely to apply to. Organizations such as the NSF and NIH receive huge numbers of proposals, because their funding priorities meet the needs of so many researchers and because these organizations are so visible. Ask yourself whether there might be organizations interested in your research that are not as widely sought after.

Also find out whether an organization requires a preproposal. A preproposal is a brief document, often of as little as three to five pages, that describes the concept of the proposed research, how the research would be executed, and the rough budget for the research. Preproposals are commonly

required by foundations and corporations and by some governmental organizations as well (such as the military ones). Preproposals require a little extra work initially, but often can end up saving you a lot of time later on. If the organization does not accept your preproposal, at least you have saved yourself the bother of having to write a full proposal, a process that typically is quite time-consuming.

Even if an organization does not request a preproposal, often a program officer will be willing to chat with you or communicate by snail mail or e-mail regarding ideas you have. The program officer often can give you an idea of whether your idea sounds appropriate for the program he or she administers. Thus, it often makes sense to talk to the program officer, to make sure you are targeting your proposal to the right agency or group within that agency.

Most funding takes the form of either a grant or a contract, although there are hybrids as well. A grant is basically a sum of money that you are given with minimal restrictions to accomplish the research you have proposed. Although major changes in what you plan to do may require approval, generally granting agencies are somewhat flexible, realizing that plans change as time goes on. Contracts are agreements for prespecified and generally fixed deliverables—in other words, products that you agreed in advance to provide. You are expected to do pretty much what you said you would do and then turn over the products to the contracting agency. There is typically less flexibility in contracts than in grants. Nevertheless, there often can be some flexibility if you negotiate with whoever awarded the contract. Should you wish to change the terms of the contract, however, it is important that you get permission rather than doing so unilaterally without such permission from the funder.

THE PROCESS OF GETTING FUNDED IN A NUTSHELL

1. Think up an idea. The first step to getting funded is having an idea. The idea does not have to be the greatest one since sliced bread, and as I will say later, it is often better if it is not the "greatest" idea. You just need a good idea, or, at least one you can sell to a granting agency. People come up with ideas in different ways. Some do it on the basis of reading articles and deciding what needs to be done next; others do it by observing problems in the world around them; still others combine these and perhaps other techniques. Everyone has to find his or her own preferred ways of generating ideas. It usually helps you to get funded if the idea is theory-based—that is, it derives from some kind of existing theory or theory you are newly proposing. Innovative methodologies can also be of interest to many funding agencies.

In thinking about what to propose, keep in mind that many grant proposals represent collaborations. You might want to collaborate either with people in your own institution or in other institutions. Within your institution, you may choose to work with people in your own department or in another. Some of the best proposals are collaborate. And some programs even *require* that proposals be collaborative.

2. *Operationalize the idea.* Next you need to put the idea into terms that represent a program of research or development. In other words, you need to do something with the idea.

3. *Find out who might be interested in your idea.* There are thousands of sources of funding, although most psychologists stick to a much smaller number of sources. Find out what funding organizations might be interested in what you have to offer. You can get tips from colleagues, your department chair, the grants and contracts office of your college or university, or from books and the Internet. Electronic bulletin boards also can be helpful. You can list relevant keywords, and then when calls for proposals come out that use the keywords you provided, you will be notified of the funding opportunities.

4. *Write your proposal.* Next you write the proposal that presents your idea. Different organizations have different specific requirements about the format and content of a proposal. Typically you will need to state (a) what your "big" idea is, (b) why the idea is important, (c) what the theory is behind the idea, (d) what research previously has been done on the idea, (e) what research you propose to do, (f) how you plan to analyze the data from the research, (g) how much money you will need to do the research and how you will allocate the funds, (h) how you will handle human participant issues (such as informed consent and debriefing), (i) why you are the person (or team) to do the research (i.e., your qualifications), and (j) what resources are available that will enable you to get the research done (such as space, available equipment, the time you have available to do the research, and so on).

Be sure to proofread and check over your proposal. Reviewers typically donate their time to evaluating proposals. They do not want to see and may have little patience with typographical or word-processing errors in what they read.

5. *Solicit feedback on your proposal.* You may find, as I often have, that others readily can see flaws in your proposal that just are invisible to you. Therefore, ask colleagues for feedback before you finalize your proposal. Also read over your proposal from the standpoint of a reviewer. After I write a proposal, I always read it over as though I were a reviewer, and try to ask myself the questions I would ask were I reading the proposal for the purpose of reviewing it. Reading over your proposal with a critical eye can often resolve problems in advance so that reviewers do not have to bring them up.

6. *Get the proposal approved by your institution*. Almost all institutions have a formal approval process that a grant proposal needs to go through before the proposal can be submitted. This is so because the grant actually goes to the institution rather than to you. You may be the principal investigator (PI) or a co-investigator, but the actual allocation of funds goes to the institution, not to you.

Part of the approval process may be human participants approval, if, in fact, you are using human participants. Such approval can take time and so you should be sure to submit your human participant forms to your institutional review committee well in advance. Monitoring of rights of human participants has been tightening up over the years, and you may find that getting approval is nontrivial, even if the research seems to be benign. The NIH has started requiring potential PIs to get training in human participants protection, and at the time this chapter is being written, other governmental organizations are expected to follow suit.

7. *Send out the proposal on time*. Most funding agencies have deadlines. You therefore need to pay attention to the time frame in which you are allowed to send out your proposal. Deadlines tend to be strict. If you miss a deadline, you probably will have to wait until the next round of funding takes place.

It is usually a good idea to send the proposal to multiple sources of funding, but keep in mind that you typically will have to follow different formats for different agencies and you may need to "fine-tune" the proposal to make it match the requirements of each agency. Submissions to multiple funding sources are routine. By multiple submissions, you increase the chances of getting funding. Often, when you submit to multiple agencies, you will be required to declare on the proposal the full listing of agencies to which you sent the proposal. Also, if you are funded by more than one agency, you will, of course, be able to accept funding from only one of those agencies. Sometimes, when one is lucky enough to be multiply funded for the same proposal, the choice is easy, because not all of the agencies offer the same amounts of money or other resources. Thus, you may choose simply on the basis of which agency gives the better deal.

8. *Revise the proposal, if necessary; otherwise, abandon it for now*. Relatively few proposals are funded the first time around. Typically, they need to be revised. Therefore, expect to have to do a revision if your proposal is turned down. If you receive really awful reviews or simply cannot see how to revise the proposal into an acceptable form, stuff the proposal into a file drawer and wait. You may never see how to revise the proposal, but more likely, incubation will enable you to see things in a more positive light.

9. *Resubmit and explain what you have changed*. If you do resubmit, you typically will be expected to indicate how you have responded to the earlier reviews. You should follow all or most of the suggestions of the reviewers.

If you have chosen not to follow a suggestion of a reviewer or a panel of reviewers, explain why you have decided not to.

10. Get funded, or if not, start over. You may get funded, in which case, congratulations. Enjoy your funding. But whether or not you get funded, you soon will be back to writing proposals. For most of us, writing proposals is not a one-time thing. It is a regular part of a research career. Sometimes you will succeed, other times not. But whatever happens, soon you will be back to proposal writing again.

Those are the bare bones of the proposal-writing process. But of course, some proposals get funded, and others do not. What can you do to maximize the chances of your proposal's getting funded? One thing is to have the right frame of mind.

YOUR FRAME OF MIND

1. Believe in yourself. Proposal-writing is a time-consuming process. At times, you may draw a blank. Or you may become dissatisfied or even disgusted with what you have written. Moreover, when you get reviews back, you may feel even worse about yourself. It is easy to give up. Do not give up! Believe in your ability to get funded. Reverses are the rule, not the exception. The people who succeed in getting funded and staying funded are those who believe in themselves. They do not believe that every idea they ever have is a good idea. No one has only good ideas. Rather, they believe that, over the course of time, they will be able to produce research ideas that are worthy of funding, and that, ultimately, will get funded.

2. Go for it. For several years I thought that it was not worth applying for a grant to pursue my interests in the psychology of wisdom because granting agencies would find the topic just too flaky. In fact, my first proposal was rejected. We then wrote a different proposal, sent it to three foundations, and one foundation funded it for three years. I was shocked! Shocked! But the lesson is one I should have learned earlier. If you tell yourself you cannot get funded, you will not get funded, because you will never try. You have to *go for it*. You may or may not succeed, but the only way to know is to try.

3. Don't worry about having the greatest idea. What is the correlation between the quality of ideas in a proposal and its getting funded? If I had to venture a guess for my own career, it is probably about 0. Really bad ideas generally do not get funded. But sometimes, really good ideas do not get funded either. There are a number of reasons for this. Sometimes, really creative ideas do not fit into existing *Zeitgeists*, and reviewers may not understand them, know what to make of them, or see the value of them (Sternberg, 1999). Other times, really creative ideas threaten those who read about them. Reviewers may have a vested interest in another point of

view, and may not be thrilled to read that what they have been thinking all along has been wrong. Still other times, really creative ideas just seem crazy. So if you have an idea that you think is pretty good but not world-shattering, do not worry about it. And if you think you have an idea that is world-shattering, be sure to express it in a way that makes as much contact as possible with the frames of mind of the reviewers. I have sometimes soft-pedaled ideas that I thought might antagonize reviewers in the hope that they then would react more positively. I do not "sell out" on the ideas, but I do soften the way I present them. Often, this technique has worked.

Sometimes ideas can be ahead of their time. Many of us have had the experience of applying for a grant, being turned down because the reviewers do not see the relevance of the problem or the research on the problem, and then reading some years later about funded research that does essentially what we proposed. If your ideas are particularly novel, then you have to go to special efforts to convince potential reviewers of the importance of the work.

4. *Persist!* Because my group has been fairly successful in obtaining grant funding, some colleagues assume we must have a wonderful track record in getting grants. False! I can honestly say to colleagues that we have probably had more grant proposals turned down than any other individual or group of which I know. We just write more grant proposals. I have found that the rate at which my proposals have gotten funded has held more or less steady during my career, with minor fluctuations from time to time. The principal key to getting funded, therefore, is to write a lot of proposals and to send each proposal to several different funding sources.

Many people give up after being turned down once or twice. They conclude that their research—or they—are just never going to be funded. They are right. Their lack of persistence has guaranteed that they will not get funded because they have stopped writing proposals. When we get turned down, a frequent event, we just keep trying, and eventually something works out.

Some organizations may have a maximum number of resubmissions that they will allow. For example, the NIH currently allow up to two resubmissions of a rejected grant proposal. It is therefore important, when you revise, that you give the revision great attention and scrupulously take into account the comments of the reviewers.

5. *Thicken your skin*. One reason many grant-writers do not persist is that they are dismayed by the negativity and often even what seem like the personal insults contained in reviews. No one enjoys being flayed alive—metaphorically speaking—so it is easy to give up. A key lesson is never to take reviews personally and to ignore the tone if it is sarcastic or insulting. Simply concentrate on what is constructive in the reviews, and if you think you can respond to the reviews, do so without responding to their tone. Just take the substance of what is said and respond to that.

6. *Focus—do not be distracted.* There are almost always many things you would rather do than write a grant proposal. Few people delight in writing proposals; most proposal writers would rather be doing something else. Moreover, there are always many other things to do. Your course preparations need to get done. You may have scholarly articles begging you to write them up. Your committee work may be falling behind. Personal commitments may be on hold and need to be given more attention. Truly, anyone can find excuses not to write a proposal. But if you wish to do research, chances are good you will need at least some funding. So you need to focus on proposal-writing and find a way to make sure that your proposals get done, regardless of all the other things that genuinely need attention as well. You have to *make the time*.

7. *Find your right audience.* You can end up wasting a lot of time by submitting a proposal to a funding organization that simply does not fund the kind of work you are proposing. Before you write your proposal, make sure that the agency or agencies to which you are applying actually fund the kind of work you are proposing. Some funding agencies release the names of the individuals who serve on and head various grant panels, so that you can know in advance who is likely to evaluate your proposal. Even if you obtain such a list, though, you still will not know to what external referees the proposal will be sent for outside evaluation.

Now that you have gotten started, here are some things to attend to in writing the proposal itself.

YOUR PROPOSAL

1. *Tell a story.* You may think science is somehow the opposite of storytelling, but this is not the case. Good science tells a story. The story begins with a problem. It typically continues with people who, in the past, have tried to solve the problem (or who may not have correctly identified just what the problem is). And it continues with how you plan to solve the problem or at least contribute to its solution. So a good grant proposal has a narrative quality to it that holds the whole thing together. It has a big idea, like the plot of a story, and it develops the idea in a way that gives the whole proposal coherence, just like a story. If you cannot figure out the story behind your grant proposal, do not expect your reviewers to do so.

2. *Justify the scientific importance and interest of the research.* Because you have probably thought a lot about the research you are proposing, it may be totally obvious to you why the research is important. But do not expect it to be obvious to the reviewers of your proposal. You have to justify to them the importance of the research. Do not assume that others will see

this importance without your stating it. If you really do not know why the research is important, do not expect the reviewers to.

An ineffective argument for the importance of research is to point out that X, Y, and Z have been done, but A, B, and C have not yet been done, and your goal is to do A, B, and C. The fact that something has not been done does not, in itself, make that thing important. There are an infinite number of studies that could be done that have not been done and never will be done because no one will care about the results. You need to show why your particular set of studies is worth doing.

3. *Be clear, and then try to be clearer.* If you are writing a proposal about a specific area, chances are you have at least some expertise in that area. You therefore may assume that reviewers have the same kind and level of background you have. They may not. You must therefore be extremely clear in your presentation of ideas. Moreover, because you have thought about your ideas many times, it is easy, in writing, to leave gaps. After all, it should be obvious what you meant. But it rarely is obvious to anyone but yourself. Be as clear as you possibly can be, and after you have done that, try to be clearer yet. When you write, write for someone who is generally knowledgeable in your broad area of research (such as cognitive psychology, social psychology, developmental psychology, or whatever) but who is not necessarily specialized in the particular problem within the area or areas you are studying. (For tips on how to write clearly, you may wish to consult Sternberg [1993].)

4. *Organize your proposal carefully.* Actually, I think this is a statement made to me years ago by my graduate advisor, Gordon Bower. Proposals tend to be technical. They also tend to be complex. It is easy for a reviewer to get lost in the thicket. You therefore want to make sure your writing is as organized as possible.

Organize your proposal in a hierarchical way. Make sure the major points stand out, and that the minor points are properly subordinated. No reviewer possibly can remember everything you have written. By writing hierarchically, you ensure that the reviewer will remember the most important things—the things you really want him or her to remember.

5. *Sell your ideas.* After you have paid attention to how you present your ideas, you need to think about how you are going to sell your ideas. Good ideas typically do not sell themselves (Sternberg & Lubart, 1995). You have to sell them. No matter how good you may think your ideas are, do not expect it to be obvious to reviewers why your ideas are so great. You have to convince them. It therefore is important to write the proposal in a way that is not only descriptive but persuasive as well. You are not just saying what you want to do. You are telling the reader why anyone in his or her right mind will want to fund you to do it.

6. *Be comprehensive but selective in your literature review.* Usually, you are writing under the constraint of only being allowed a certain number of pages in your proposal. Thus, although it might be possible to devote the whole proposal to literature review, you need to be selective. Cite as much as possible of the research that is *directly* relevant to your proposal, but skip the stuff that, although peripherally relevant, does not bear directly on what you propose.

When people in my group write proposals, we try to keep in mind likely reviewers of these proposals. Most reviewers consider their work in the area to be important. After all, they may feel that they would not have been asked to review the proposal if their work were not important. So they will not be thrilled to see their classic book or article roundly ignored. The lesson is to try to cite likely reviewers, whenever possible.

Although you cannot be certain of who will review your proposal, you can make reasonable guesses. People who are central to the field, people who have reviewed your articles (should you know who any of them are), people you run into in professional meetings and symposia on topics of interest to you—these are among the likely reviewers. Write with them in mind, as you would wish they would do for you.

7. *Be respectful in your literature review.* Sometimes, the research one proposes is designed to set the record straight—perhaps to correct the errors the researcher sees in past work. But even if you believe past work has led to wrong conclusions, which you are going to correct, it is important to be respectful of this work. First, disagree though you may with those who came before you, these very scientists are the ones who created the methods or results that are serving as the basis for your work. Hence you owe them a debt, because you are building or rebuilding on their work. Second, it is unprofessional and, arguably, immature, to be disrespectful. Third, and pragmatically, the people who did this past work are those most likely to review your proposal, and if you are disrespectful toward them, you endanger the viability of your own proposal.

8. *Have a strong theoretical basis for your proposal.* One of the main reasons I have seen for rejections of proposals is that there is no theory, or the theory is only sketchily portrayed, or the theory is only marginally relevant to the research that is proposed. It is therefore important for you to pay close attention to the theory section of your proposal. Explain the theory clearly, and also the hypotheses that derive from it that are relevant to your research. Be sure you show how the hypotheses derive from the theory. Do not expect reviewers to see the derivation on their own. Then, when you are describing the research, make sure it is clear how the research tests the hypotheses that you generated from the underlying theory.

9. *Follow directions.* Funding agencies, especially governmental ones, have many rules to follow in the preparation of a proposal. Just following

all these rules and doing all of the required paperwork can become enormously time-consuming and, at times, can be frustrating. Yet it is imperative that you follow all of these nitty-gritty rules lest your proposal be returned or even rejected because you disobeyed the rules. I once had a proposal sent back and then had to wait for the next granting deadline because a few questions on a form inadvertently had not been answered. A colleague had a grant proposal sent back because he did not follow the requirements of the agency regarding margins.

Today, college and university grant and contract offices generally check for these mechanical kinds of errors, but ultimately it is your responsibility, not theirs, to make sure that the guidelines are followed. You do not want your proposal to be rejected because it did not follow the guidelines. If it must be rejected, it should be because of the science. Therefore, do not make yourself vulnerable by ignoring or flouting the rules. Be creative in your science, not in the mechanics of writing the proposal.

10. Make sure your budget is reasonable and matches the proposed research. Reviewers of grants are typically experienced and can recognize rather quickly when a project is underbudgeted or overbudgeted. If you underbudget, you are showing that you do not understand the full cost of the research, and your underbudgeting calls into question whether you really understand the resources your research requires. If you overbudget, you may give the impression of being more concerned about the money than about the research or even of being greedy. It therefore is important that your budget be reasonable. Some organizations state the evaluation of budgets is separate from evaluation of the merits of the work. My own experience, though, is that unrealistic budgeting can sour the way reviewers perceive the work you propose. You typically will be asked to provide a justification for your budget, and this justification should make totally explicit why you are requesting the level of funding and allocation of funds you have requested. Unfortunately, budgets are often cut before funding is awarded.

In budgeting, keep in mind that most institutions charge "overhead." Overhead is a portion of the grant or contract that the university takes out for its own use. In theory, overhead pays for things such as space, library usage, heating, electricity, costs to the university of administering the grant, and so forth. Rates of overhead vary widely among universities, and can reach 65% or more. The overhead may be computed on the whole grant or only on salaries and wages. For example, if the overhead rate is 50%, then the university will take 50 cents out of your grant for every dollar you spend. Rates of overhead are negotiated between the university and the funding organization.

Universities differ in their flexibility regarding overhead. Generally, though, they are willing to do some negotiation. For example, my own institution typically charges a fairly high rate of overhead but is willing to

take less if the funding institution writes a letter saying it is their policy to pay less. You thus may have some leverage in negotiating rates, although probably not much.

Universities also may charge benefits on salaries and wages. This is money taken out of the grant to pay for employee benefits such as health care, retirement plans, life insurance, disability insurance, and so forth. Benefit rates vary widely across universities. From the researcher's standpoint, the important thing to realize is that you do not get to spend the entire amount of money that a funding agency allocates to you.

It is important also to realize that universities have policies regarding grant spending, and it is wise to check these policies. For example, when a grant is used to pay for a professional trip, the university may have a maximum daily amount that it will reimburse lodging or food expenses.

EVALUATION OF PROPOSALS

Each funding organization has its own criteria for evaluating proposals and its own timeline for doing evaluations. Evaluations may take just a few weeks, but typically require four to six months or even more.

Evaluations may be internal, external, or both. Internal evaluation means that employees of the funding organization evaluate the proposal. Such evaluations are common with foundations and corporations. External evaluation means that reviewers outside the funding organization—often people like you—evaluate the proposal and provide their evaluations to the funding organization. In writing your proposal, you need to keep in mind the reviewers who are likely to evaluate your proposal, and write with these potential evaluators in mind.

When proposals are sent out for review, they are sent out with the explicit understanding that the proposal is a privileged document. This means that a reviewer is not permitted to show or even discuss the proposal with others, and certainly is not permitted to use any of the ideas in the proposal for his or her own research. Usually, reviewers are asked to destroy the proposals after they are done reviewing them. In my experience, reviewers are basically honest in adhering to these guidelines. After all, they do not want people stealing their ideas! Of course, there can be a bad apple in any basket and there is no guarantee that things will go as they should. But in my experience, reviewers generally take their ethical responsibilities seriously.

Different organizations use different criteria in evaluating proposals, but certain criteria tend to be common across many different funding organizations. A first criterion most organizations use for evaluating a proposal is that of whether the proposal even fits the kinds of research the organization sees itself as funding. A second criterion is likely to be the scientific (or

educational or commercial) value of the research. Organizations typically look for some degree of originality in a proposal, as well as quality of the way in which the research is designed and is to be executed. A third criterion is whether the data analysis is appropriate for the research that has been proposed. A fourth criterion often is the appropriateness of the budget. And a fifth criterion is the level of qualifications of the proposer and the facilities available to the proposer. This last criterion is important because it helps ensure that the research will get done—and get done well.

Now you are almost ready to write your grant proposal. All you need are some ideas and to set aside the time to put these ideas into the form of a proposal. Perhaps you would rather watch a football game, go for a picnic, or check out a new movie. But when these things are over, they are over. When you do a piece of research, it can have a lifelong impact on your career, and if it is really important, it can impact the field forever.

CONCLUSION

Would you like to get a grant? Chances are, you can and even will. Of course you need an idea, but chances are, you have that idea, or even more than one. So the main thing you need to do is organize yourself and your time to write a grant. You want to give it your best shot, but do not wait until you get every thought and every sentence perfect. Wait too long, and the time for doing the research may well be past! Find out the organizations that fund the kind of research you would like to do, and go for it. Most of all, remember the importance of persistence. Some lucky people are funded the first time around. Probably, many more are not. You may have to revise the proposal once or even twice. Or you may have to submit the proposal elsewhere. Or you may have to write a new proposal. But if there is one key to getting funded, it is persistence. Keep trying, and sooner or later, you will be funded. That is what we do. We know that not every grant we write will be funded. But we do not give up, and eventually, one proposal or another, some time or another, gets funded. And then, we are off and running.

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