Postdoc Academic Chat #7

MANAGING YOUR RESEARCH BUDGET –
WHAT YOU DON'T KNOW COULD COST YOU
Friday, April 22, 2011

Location TBD

#1 Preparing and Managing Your First Lab Budget: Finance 101 for New Investigators

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#1 Preparing and Managing Your First Lab Budget: Finance 101 for New Investigators

The Scientist
By Megan T Brown
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When it comes to practical matters such as managing money, scientific training seems woefully inadequate. Although you may be an ace at balancing your personal checkbook each month, this doesn't mean that you are automatically qualified to prepare a scientific budget. If your budget is not realistic or in line with other current grants, you could run into serious stumbling blocks during the grant review process.

The need for financial savvy doesn't stop once you get a grant. You must be able to manage your money by neither overspending nor underspending your allocation. We've all heard budget horror stories, such as the one about the assistant professor who spent 2 years' worth of supply money in his first 9 months and had to resort to reusing pipette tips. And then there's the tale of the new investigator who underspent her supply money and lost surplus funds because she didn't realize her funding agency wouldn't allow her to carry them over to the next year.

Fortunately, these situations seldom occur. With common sense, a bit of research, and the tips listed below, a new investigator can prepare a realistic budget and manage it successfully.

Preparing the Budget for Your First Big Grant

1. Tackle the Science or the Budget First?
Because science is the most important part of your grant proposal and will largely determine whether it is funded, many investigators write the scientific sections first. But writing the budget first can have advantages. Edward Giniger, an associate member of basic sciences at the Fred Hutchinson Cancer Research Center (FHCRC) in Seattle, prefers to put together a rough budget before he writes the proposal: "I determine my budget first. Then I propose a coherent set of experiments that fit the budget." The budget-first approach helps keep the proposed work in line with the available money.

2. Learn the All-Important Magic Numbers
Some granting agencies provide no guidelines for the amount of money you can request in your budget. But there *are* unofficial figures for key parts of the budget that are generally followed by grant reviewers. These unacknowledged figures are the "magic numbers" that will make your budget acceptable to the study section. Two especially important numbers are:
* the total amount per year that a first-time investigator can request, and
* the allowable supply budget per person per year.

It may be most practical to get these numbers from your colleagues instead of the actual granting agency, which may deny that such "magic numbers" even exist. If you get these figures, your budget will have a better chance of getting approved. Numbers significantly above or below the accepted ones will raise a red flag for the entire application. "Staying within these figures, my budgets were never questioned," says Giniger.

Overall, your budget must match your proposed work. If your budget is too low, the study section reviewing your grant proposal will penalize you for being unrealistic or overly ambitious. Proposing to do far more work than your requested funds can support is a frequent criticism of inexperienced investigators' grant applications. On the other hand, if your budget is too high, your proposal will not be competitive with other grants that propose similar types of experiments for less money. "The grant situation today is so competitive," says Jonathan Graves, a new assistant professor of immunology at the University of Washington in Seattle, who recently received funding for his first National Institutes of Health (NIH) R01 Individual Research Project Grant. "There is an element of feeling like you're bidding for a construction project with the lowest bid getting awarded the grant. You must strike a difficult balance between what is appropriate and what is competitive."

The magic numbers will be lower for first-time applications than for grant renewals. In addition, the numbers will vary according to the field of research. Some specialties require higher supply funds because they rely on more expensive research technologies. For example, the annual "magic numbers" for a mouse geneticist who works with knockout lines will be substantially higher than for a yeast geneticist.

3. You Can't Do It Without Help

"The first thing I did was ask people if I could look at their budget pages," says Graves. Be sure to request pages from colleagues in your field. Their budgets can serve as templates and be adapted to your particular needs. "Do not ask other beginning investigators for their budgets--they may be as clueless as you. Talk to intermediate-level investigators who have already obtained several grants and are actively participating in study sections," advises Giniger.

Also, do not overlook the seminars and workshops for new faculty members offered by your institution's grants office. At the very least, you'll meet administrators in the grants office and other new faculty members with similar concerns. These people may be good sources of information and advice in the future.

4. How to Calculate Salaries, Supplies, and Equipment

How many people does your budget need to support? Knowing the answer to this question will go a long way toward setting your budget, because salaries usually account for about 80% of requested funds. One difficulty new investigators have is that they usually haven't hired the personnel they need by the time they write their first couple of grant proposals. Nonetheless, they must calculate the amount of funds for the staff they intend to hire. To do this:
* Assign an actual dollar amount for each position (e.g., you, a technician, a postdoc).
* Calculate the percentage of salary support for each anticipated individual (e.g., 50% salary for you, 100% for the technician, and 100% for the postdoc).
* Add the numbers up. Then, multiply this sum by your institution's standard amount for fringe benefits (usually between 17% and 30%). The final total for salary (including fringes) should not exceed 80% of the annual magic number.
* Add the "supplies per bench scientist per year" amount to calculate the total supply budget. It is standard in most grants to also add a 4% annual inflationary increase in expenses for supplies and salaries.

Get quotes from vendors on any laboratory equipment that is not covered by your start-up package. Some agencies are more willing to fund equipment purchases in the first grant than in renewals, but this is not universally true. In the proposal's budget justification section, you must explain why you need each piece of equipment and must justify the overall supply budget. The NIH's new modular research grant system requires only a streamlined justification in the grant application, but most other agencies still require the full details.

Managing Your Budget

Once your proposal is funded, you may think your money concerns are over. Not true! Now, you need to control your actual spending rate so that it matches available funds. The fact that your estimated cost of laboratory supplies matched one of the magic numbers you learned from colleagues doesn't mean that it truly reflects the day-to-day costs of operating your lab.

1. Monitor Spending on a Monthly Basis

You will probably receive a monthly report from your grants office or department. This report may or may not be interpretable. Some institutions do offer classes in how to read these reports and may also provide training in using in-house grant-tracking software. But many investigators prefer to keep their own books, using simple spreadsheets in Excel or Quicken to track their expenditures. (Not only is Excel easier to use, but you'll have the advantage of having CURRENT information, not just a summary of LAST month's expenses.) There are also commercially available software programs designed for monitoring grant budgets, such as [Grant Manager](#) and [Grant Tracker](#).

Many organizations use a budgeting trick called "calendarizations," which is very easy to adapt to a scientific budget. This allows you to budget basic necessities, such as reagents and salaries, on a regular monthly basis. (Annual supplies in all categories divided by 12 = monthly spending.) It also allows you to plan and budget, for example, an extra $10K for the month of September to buy a reconditioned microscope. Calendarizations can be a very effective way to track how much you are overspending or underspending during any given month and for the year to date.

2. Overspending? Look for a Second, Smaller Grant
If you are consistently overspending your monthly supply budget and cannot seem to reduce costs, then you may need a second grant. Smaller grants that cover supplies are available from a number of agencies, and some are specifically targeted at new investigators. A small grant can also be a springboard to a second larger grant in the future.

"Try to get at least one small grant," advises Nancy Hollingsworth, an assistant professor of biochemistry and cell biology at the State University of New York, Stony Brook. Hollingsworth's lab receives support from both an NIH R01 and a Basil O'Connor Starter Award from the March of Dimes. "It's very hard to grow on a single R01," she says. "Your second, smaller grant can include specific aims not addressed in your main grant. Later, you can try for a second R01 or large research grant from another agency that is based on these independent aims."

Another approach is being taken by Maureen Ryan, an FHCRC staff scientist and an acting assistant professor of dermatology at the University of Washington. Ryan received of a Career Development Award from the Dermatology Foundation and will apply for her first NIH R01 later this year. She advises learning "to make use of limited resources by establishing collaborations and planning carefully--figure out how to kill two birds with one stone whenever you do an experiment."

3. Know Your Grant
If you are underspending your budget each month, then you will have a pile of money left at the end of the year. Assuming that you can carry this money over to next year's budget can be a costly mistake. Some granting agencies allow carryover, but some do not; so check at least 4 or 5 months before your granting cycle is scheduled to end.
Another way to avoid underspending is to switch some of your supply money to equipment or travel. Whether this is permitted is, again, grant-dependent. Some grants,

such as R01s, have so-called "undistributed budgets" that allow relatively free exchange between budget categories. However, grants of the "distributed" budget type are not as flexible.

Advice to Postdocs and Graduate Students

1. Learn Now, Not Later
Researchers who are planning to follow the academic research track should start thinking about grants and budgets before they secure faculty positions. "If you are already a new faculty member, it is too late to be learning these things," says Giniger. By helping write grant proposals for their labs and participating in budget discussions as students and postdocs, both Giniger and Graves gained valuable experience before becoming faculty members. "I would not have been able to get my R01 on the first attempt without this experience," says Graves.

Even if you are not invited to help write your lab's grant proposals, you can still pick up valuable information in other ways. "As a postdoc, you should listen and learn," advises Giniger. "Make a point of talking to people a few years ahead of you. Learn how much it costs to run a lab, how much to buy supplies."

2. Ask Your Mentor
Take advantage of your mentor's experience by initiating discussions about grants and budgets even if he or she doesn't. Most advisers are happy when their trainees follow in their footsteps by choosing a traditional academic career path, so they will probably be pleased to impart their wisdom.

Megan T. Brown has a Ph.D. in genetics and works as a science writer in Seattle, Washington. She can be reached at megantbrown@hotmail.com.

#2. Guidance for Managing a Research Grant

Maija L. Selby-Harrington | Patricia L. Donat | Heddy D. Hubbard

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Overview

While many resources are available to assist researchers in obtaining funding (e.g., Bauer, 1984; Tornquist & Funk, 1990), little information is available to help them manage a grant after it is awarded. This article provides practical guidance to help newly funded principal investigators (PIs) manage Federal research grants. Although the focus is on Federal grants, the administrative issues considered are pertinent to privately funded research as well.

Before writing a proposal, contact a program official (PO) at the potential funding agency to ascertain that the research is of interest to the agency. Then, a month before submission, alert the PO to your upcoming grant application and provide your institutional affiliation and the title of the proposal. When you send the application, include a cover letter clearly indicating the funding agency to which the proposal should be directed and call the PO again to confirm this information. The PO can help ensure that the proposal is routed correctly. Without presubmission contact, an application may be assigned inadvertently to an agency other than the one for which it was intended. The groundwork for implementing a grant must be laid before applying for funding to ensure that the organizations, agencies, and individuals affected by the grant will support its implementation. Commitments must be obtained from your own institution and from collaborating agencies so that resources needed to carry out the grant will be available when the grant is funded. Letters of commitment must be included in the grant application to assure the funding agency that the necessary resources will be provided. These resources include personnel, office space, furniture, telephones, and other items that the funding agency may not provide, as well as access to research subjects and data sources. Suggestions for gaining commitments for such resources are provided by Selby, Riportella-Muller, and Farel (1992).

The Waiting Period

Many months may elapse from the time that commitments are made until a grant is funded. Keep the involved individuals apprised of progress during the waiting period. After submitting the grant application, send a letter of appreciation and a copy of the grant abstract to each person who facilitated grant submission by making a commitment to the project. In the letter, reconfirm the earliest possible start-up date and include a reminder that many first-time grant applications require revision and resubmission, which postpones the start-up time.

Let the involved individuals know when they can expect to hear from you again and encourage them to contact you if they have questions. Remember, they, not just the PI, are affected by the funding agency's decision. Check in periodically with them to see if any adjustments will be needed because of changes in personnel or policies at their institutions. For example, you may need to gain the support of a new official who replaced one who made a commitment to your research. Adjustments can be made more easily during the waiting period than in the rush to initiate a funded project.

If you have questions about your application before the scientific review is completed, contact the funding agency's scientific review administrator rather than the PO. This arrangement is based on the need to separate the PO from the scientific review process. After the review, you may again contact the PO directly.'

Responding to the Scientific Review

When you receive the summary statements from the scientific review, hold a debriefing session with your investigative team and discuss the chances for funding with the PO, as well as with seasoned PIs. If the priority score is poor or borderline, it may be advisable to submit a releases application immediately to avoid missing an entire review cycle. If you decide to resubmit your application, let the PO know.

Use feedback from the scientific review to improve the application. Be sure to address each criticism even if you believe it is unwarranted. If there was a misunderstanding about what you meant in the original proposal, it is your responsibility to provide clarification.

You will also need to enlist the support of all your collaborators in the resubmission process, as you will need updated letters of agreement. You may need to work out logistical details associated with scientific revisions, such as an increase in sample size. that may require the recruitment of additional research sites.

Planning for Implementation

If the priority score indicates that funding is likely, plan for implementation. The official notice of funding may arrive only weeks or days before the scheduled start-up date. To avoid problems, take time before start-up to work out logistical issues with each individual or agency involved, such as mechanisms to conduct interventions or collect data.

Reaffirm institutional review board approvals for all performance sites. Meet with your co-investigators to update them, review the grant timeline, and reconfirm and document roles and expectations. Discuss difficulties anticipated in meeting grant responsibilities and establish open communication to handle problems that may arise. With your own administration, make plans to prepare the designated office space for occupancy. You

may need to attend to details such as obtaining furniture and deciding on the placement of telephone outlets.

You will need to recruit, interview, and select key staff (at a minimum, the project director) in accordance with institutional and equal employment opportunity regulations and with the understanding that hiring is contingent on receipt of the grant award. If you laid the groundwork with the personnel office prior to grant submission, you will be prepared for these tasks. If not, you may experience frustration and delays, since the institutional processes for creating positions may be lengthy and cumbersome.

You also may need to make specific arrangements to ensure that project activities scheduled early in the grant period can be carried out. For example, if Month 2's tasks require printed materials, reconfirm the printer's cost estimate obtained for the proposal (or, if required by your institution, obtain current competitive bids) and tentatively schedule printing for Month 1.

The grant may require budget adjustments. Officially, the budget is negotiated between the grant management office of the Federal agency and the business office of the PI's institution. In practice, the PI usually develops the budget adjustments and provides input to he institutional business office; representatives of the business office cannot evaluate the impact of budget revisions on the scientific outcome of the project. The PI is responsible for ensuring that the research aims of the grant can be accomplished within the negotiated budget.

Upon notification of funding, your institution may want to publicize the award. Work within institutional guidelines to do so and help ensure that the information presented is accurate. Though you may have minimal control over what others choose to highlight, do your part to acknowledge your collaborators and others who are making the research possible. Do not be surprised if you are asked to comment on projected results before you even have begun the research. Be careful not to be overtly optimistic, lest you be asked to explain your "failure" several years later.

Your institution may provide an orientation session or a manual for new PIs. If so, take advantage of such resources early, before they make mistakes. Throughout the life of the grant, don't guess what to do; seek advice. Institutional officials, your investigative team, other seasoned researchers, and your PO can help you avoid mistakes.

When preparing for start-up of the funded grant, it is appropriate to call the funding agency to update the PO on your readiness for grant activities and to work out a plan for communicating with the PO over the course of the grant. Some agencies or POs require formal periodic reports; others prefer phone calls or informal conversations at regular intervals; some want to be contacted only for significant issues. While individual styles vary, every PO wants a successful project, and no one likes to be taken by surprise by problems first reported in an end-of-year continuation application. By showing a willingness to communicate openly from the very start, a PI can help lay the foundation

for a positive relationship in which the PO can become an advocate for the grant at the funding agency.

Financial Management

For the grant to function, you must learn how to spend money in accordance with the rules of your agency. Your institutional budget office will create an account from which grant funds can be expended. Study the budget justification, and budgetary revisions, and the funding agency's guidelines. If your institution does not schedule routine orientation sessions, set up meetings with budget officials to learn the rules of the institution. If you obtained the support of these officials during the grant application process, they will be expecting you. If not, describe the grant and indicate a desire to operate within institutional rules so that the grant will not cause accounting problems. The first meeting with the budget office can focus on policies and should include the PI and key staff who will deal with budget issues. The second meeting, for staff only, can focus on rules for completing and processing accounting forms.

After the meetings, it is helpful to design a chart to organize the newly learned information about accounting forms, unless one is already available. The chart should list each form, its purpose, instructions for completion, signatures required, and directions for routing through the system. It will be a handy reference at the beginning of the project, as well as an orientation tool for new personnel throughout the grant period.

The chart should be reviewed for accuracy by the budget officials with whom you met; enclose it with a letter of appreciation. The meeting, your expressed desire to complete the paperwork correctly, the thank-you letter, and the chart (which the budget office can use to orient other PIs) can foster supportive working relationships with these key officials. Because problems can occur over the course of a grant, good working relationships are needed to help everyone focus on solving the problems rather than assigning blame to them.

To manage grant finances properly, a PI need up-to-date accounting information. If institutional offices cannot provide timely reports or budget forecasting services, the grant should maintain an internal accounting system. Pre-grant discussions with your administrators will have revealed whether this is necessary and if so, will have enabled you to plan the personnel and resources as needed to handle such a system. In any case, as PI, you will need to ensure that expenditures are within the allotted budget. Compare expenditures with projected expenses at fixed times during the budget year (e.g., quarterly). Use analyses of past expenses to forecast recurring needs, judge whether unforeseen needs can be met, and plan future budgets.

Personnel Management

The PI, as well as any supervisory staff hired, may need to meet with the personnel office to learn institutional rules for managing personnel. There are rules (and forms) for hiring,

paying, evaluating, and promoting employees, upgrading positions and increasing salaries, and terminating employees. As with accounting, a chart or outline of these processes will be helpful. Follow up the personnel meetings in the same manner as the budget meetings. The need for support and advice from the personnel office will continue for the duration of the grant.

Personnel management in a research project carries special responsibilities not found in nonresearch settings. The PI of a research project is responsible for quality control in data collection, analysis, and interpretation. A small error at any stage of the project can have major repercussions. Newly hired staff may not understand the need for accuracy and attention to detail involved in research, especially in relation to data verification and quality control procedures. Without appropriate direction, any staff member could compromise the validity of the research. Therefore, staff should be hired with the understanding that they must learn and abide by the special rules of research. As PI, you must ensure that all staff are oriented and trained to adhere to these rules, keeping in mind that such rules may seem mysterious or even frightening to new employees. A nonthreatening environment in which mistakes are allowed, but are expected to be corrected, can foster learning and minimize negative consequences.

Providing staff members with an overview of the design of the project can help them see how their work contributes to the achievement of the research goals. Although not everyone needs to know the scientific intricacies of the research plan, explaining the "big picture" to staff members underscores the importance of their work and helps them feel valued.

An ongoing staff development program can help meet the challenging needs of the grant and of grant members whose professional needs may change. Staff members who acquire additional skills will become more valuable to the project. For example, a clerk hired only for typing may learn to oversee the data entry system. The staff—and the grant—may also benefit from opportunities for authorship of peer-reviewed publications arising from the grant. Participation in authorship is useful for developing skills in reviewing literature, analyzing and interpreting findings, reporting results in tables, and writing for scientific audiences. In addition, such involvement increases staff members' sense of partnership in the grant—a form of "profit sharing."

While an atmosphere of respect for staff development helps to lessen employees turnover, disruptions caused by illness, maternity or military leave, the graduation of student employees, or other circumstances will occur. To the extent that disruptions can be anticipated, plan for training replacements and retraining affected employees upon their return. The videotaping of training sessions may be a useful timesaver.

Additional Measures for Quality Control

Developing a policy manual to guide the scientific investigation is helpful. The manual should document methodological issues not outlined in the original research plan, as well as scientific decisions made in the course of implementing the grant. As a general rule, as

long as the overall scope of the project is not altered, the funding agency allows the PI to make needed methodological or procedural changes. Significant changes should be discussed with the PO.

To ensure the quality of data, conduct interim analyses. Although preliminary data may be insufficient for testing hypotheses or drawing conclusions, interim analyses enable you to determine whether data are entered properly, whether computer programs are written correctly, and whether data are logical and valid. They also help verify whether data are logical and valid. In addition, periodic analyses are useful for monitoring process indicators (e.g., interviews completed for each study group by each interviewer) and for assessing trends. If problems are uncovered, solutions can be developed more easily during the course of the grant than at the end.

Adhering to a Timeline

The effectiveness of grant management is judged partly by the ability to accomplish activities in accordance with the timeline specified by the grant. A proactive management style, with a view toward planning for unexpected events and verifying that tasks are completed correctly, helps to ensure adherence to the timeline.

Share the timeline with project staff so that they can see how their work leads to the achievement of grant milestones. Divide each milestone into the steps required to reach it and gauge the time needed to complete each step. Assign responsibility, set a deadline for completing each step, and follow up to see that the steps are completed.

An enlarged timeline of the current time period, with check marks for completed milestones, can be a visible source of satisfaction for staff. Use the timeline to plan ahead. During slower periods, or when staff members have extra time available—such as when student assistants do not have classes—accomplish tasks in advance. Doing so will help get jobs done more easily and may provide time to handle the unexpected events that inevitably occur.

Complex tasks can be managed more easily if they are broken into smaller tasks. For recurring complex tasks, develop detailed, sequential checklists. A checklist guides staff members to complete the components of a task, ensures continuity when an unfinished task must be completed by another worker, and verifies that a task was done properly. It also serves as a training tool for new employees.

Anticipate potential problems in meeting deadlines. Such problems most often occur when a grant relies on an outside agency for a product or service. For example, if a collaborating agency is consistently late in supplying data for subjects, discussions with agency personnel may reveal that data could be supplied more quickly if requests from the grant were organized with subjects listed according to agency identification numbers instead of alphabetically.

If you anticipate serious problems in accomplishing grant activities, discuss the problems and their most viable solutions with your PO. Most POs will be encouraged if you prospectively try to avoid problems and the complications that result from them—rather than retrospectively ask for funds to solve them. Also, POs often have considerable experience in overseeing a variety of grants and may be able to recommend simple solutions to the problems.

Regardless of how well you plan, problems occur. Handled positively, they can become valuable learning experiences for researchers. Documenting the problems encountered and their solutions is helpful for solving problems in the future and ensures an accurate record for reports and publications.

Authorship

To avoid misunderstandings about authorship of publications and presentations arising from the grant, develop and document policies. It may not be necessary or even appropriate for the PI to participate in authorship of all reports generated by the grant. However, the PI is accountable to the funding agency for appropriate dissemination of grant-related information. Conflicting, incorrect, or inappropriately timed reports must be avoided.

Early in the grant period, plan a timeline for disseminating information through manuscripts and presentations. It is not necessary to wait for results before planning the types of reports needed. A proactive policy with mechanisms for discussing proposed reports with team members, inviting authorship from members who can best contribute, and coordinating reports through the PI will help achieve the goals of the grant and of individual investigators and staff members.

Communication

To carry out grant activities on schedule and in accordance with the scientific research plan, you will need the continued cooperation, collaboration, and goodwill of many individuals from various agencies. You and your staff must interact effectively and communicate grant needs appropriately to investigators, institutional officials, the PO, and representatives of outside agencies.

You are responsible for keeping the PO appraised of progress in the manner agreed upon. If the PO makes a site visit, bear in mind that this should not be a harrowing event, but an opportunity to communicate information about your project. Openness about problems and concerns is crucial. In an atmosphere of trust, a PO can help identify ways to overcome obstacles and can open doors to expand your research agenda.

The success of a research project relies on the cooperation and goodwill of service agencies for access to data and subjects. Therefore, cordial and effective communication is essential. Schedule regular meetings to update agency personnel on your progress and to allow them to provide feedback on how grant activities affect them. These meetings

help agency personnel develop a sense of partnership in the grant. Follow up each meeting with a thank-you letter that confirms the major decisions made at the meeting. The letter will help clarify misunderstandings, prevent future problems, and provide documentation of the issues discussed.

While such follow-up letters are appropriate for all important meetings, not just those with outside agencies, much communication will be conducted by phone. Staff members may need guidance so that they represent the grant well to outside callers. Important phone calls should also be followed up in writing, and the receipt of critical written correspondence should he acknowledged by phone.

Requests for information can be designed to facilitate a timely and correct response. For example, a request for a letter of agreement might include a sample letter. A request to a data analysis subcontractor might include dummy tables and templates specifying the exact information needed.

Other aids to communication are electronic mail, facsimile (fax) transmission, and project newsletters. Electronic mail facilitates rapid communication and is useful for sending multiple copies of short messages. Fax transmission offers the opportunity for quick feedback on longer or formatted documents, such as research instruments. A regular newsletter keeps the investigators and PO appraised of progress and informed about the project as a whole. This is especially helpful for those team members, such as consultants or specialists, whose level of involvement fluctuates during the life of a grant. Newsletters also provide information needed for future reports, manuscripts, and continuation applications.

The Continuation Application

In the middle of a grant year, begin planning for the continuation application, which usually must be submitted about 3 months before the end of a grant budget year. Although the format may vary across funding agencies, the application usually requires information on progress made in meeting grant objectives, managing activities, and allocating resources. It must include the next year's work plan, staff responsibilities, and a budget (within the previously approved amount) that is clearly justified by the work plan (Weston, 1985). To ensure timely submission of the application, prepare a schedule with interim deadlines for assembling the various components, such as face pages and biosketches for new key personnel. For the progress report, develop an outline of key points to be addressed. You will need to describe clearly how the grant accomplished the prescribed activities and intended aims. Explain and justify any changes in the original plan or budget. Significant changes should have been communicated to the PO previously and should not come as a surprise in the application.

Depending on the funding agency, some applications are reviewed by agency staff, some by outside reviewers, and some by both. In any case, the PO is expected to be available if questions are raised in the review process. A well-informed PO will be able to provide further background and justification for your decisions and proposed plans.

Preparing for Future Grants

When a grant is completed, you must submit all required reports and arrange for the disposition or final allocation of property, equipment, and supplies, usually 90 days after the end of grant support. Be sure to abide by regulations regarding accountability for equipment, retention of records, or a future audit (U.S. Department of Health and Human Services, 1990). The PO can advise you about the structure of the final report.

However, do not wait until the grant terminates to prepare for future grants. Prepare your next competitive proposal early in the last year of the grant, when you will be in a favorable position to conduct further research. Your experiences in carrying out the current grant will enhance your chances of future funding. When the grant ends, you will have a seasoned investigative team that is even more knowledgeable about the research area, and, if you have attended to staff development, you will have excellent personnel resources. A student assistant who has completed a graduate degree may be ready to become a project director, for example, or a secretary may be ready to become an administrative assistant. You also may have usable equipment.

Successful experiences in managing funded research will lead to a smooth transition from the end of one grant to the beginning of another. The PO, your ally as a result of positive experiences with the grant, can help determine the most appropriate source of funding for research efforts that expand on the existing grant. One successful experience will lead to another as you work toward your goal of increasing knowledge about health and helping to improve the health of the population studied.

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Maija L. Selby-Harrington, Dr.P.H., R.N., is associate professor and director of research, School of Nursing, University of North Carolina at Greensboro Greensboro, NC.

Patricia L. Donat, M.A., is social research associate, School of Nursing, University of North Carolina at Greensboro Greensboro, NC.

Heddy D. Hubbard, M.P.H., R.N., is a health science administrator, Center for Medical Effectiveness Research, Agency for Health Care Policy and Research, U.S. Public Health Service, Rockville, MD.
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#3. Sample Research Budgets and Justifications

TWO SAMPLE RESEARCH BUDGETS

Example 1

 non-medical research project to be conducted on-campus

100% sponsor agency funding.

Project period 10/01/2007 to 9/30/2009

Budget period 10/01/2007 to 9/30/2008 (Year 1 budget)

UNIVERSITY	AGENCY
Senior Personnel	Request
PI Dr. B. Smith @ 2 SM months	14,000
Co-PI Dr. L. Jones @ 1.25 SM months	10,000
Co-PI Dr. C. Thomas @ 2 CY months	12,000
Other Personnel	
Analysis Technician@ 6 CY months	16,000
2 Graduate Students @ 12 CY months	12,000

Total Personnel:	64,000
Fringe Benefits (PI, Co-PIs & Technician)	13,000
Equipment	15,000
Travel	4,500
Materials and Supplies	9,500
Consultant	2,500
Subcontract (Azalea University)	5,000
Subcontract (Dogwood College)	35,000
Printing	1,500
Total Direct Costs	150,000
F&A Costs @ 38% MTDC (125,000)	47,500
Total Direct and F&A Costs	197,500
Total Project Cost	$ 197,500

Example 2

A non-medical research project to be conducted on-campus with the sponsor agency requiring <u>cost sharing</u> of no less than 20% of the agency request.

UNIVERSITY	AGENCY	
Senior Personnel	<u>Request</u>	<u>Cost Sharing</u>
PI Dr. B. Smith @ 2.00 SM months	14,000	
@ 1.80 AY months		12,686
Co-PI Dr. L. Jones @ 1.25 SM months	10,000	
@ 1.06 AY months		<u>8,457</u>
Co-PI Dr. C. Thomas @ 2.00 CY months	12,000	
Other Personnel		
Analysis Technician@ 6 CY months	16,000	
2 Graduate Students @ 12 CY months	<u>12,000</u>	
Total Personnel:	64,000	21,143
Fringe Benefits (PI, Co-PI & Technician)	13,000	5,286
Equipment	15,000	
Travel	4,500	
Materials and Supplies	9,500	
Consultants	2,500	
Subcontract (Azalea University)	5,000	
Subcontract (Dogwood College)	35,000	

Printing	1,500	
Tuition Remission	_____	3,100
Total Direct Costs	150,000	29,529
F&A Costs @ 38% MTDC (125,000)	47,500	
@ 38% MTDC (26,429)		10,043
Total Direct and F&A Costs	197,500	39,572
Total Program Cost	$ 237,072	

SAMPLE BUDGET JUSTIFICATION

Senior Personnel

There is one primary investigator and two co-investigators:

Dr. Barbara Jones, Assistant Professor, will be the principle investigator leading the research. The PI is on a 9-month academic year appointment at $ 63,000 and requests two months of summer salary ($ 14,000).

Dr. Larry Smith, Associate Professor, is a Co-PI and will assist in the project. He is also on a 9-month academic year appointment at $ 72,000 and requests 1.25 months of summer salary ($ 10,000).

Dr. Carol Thomas, Associate Professor, is the second Co-PI. She is on a 12-month calendar year appointment at $ 72,000 and requests 2 months salary ($ 12,000).

Other Personnel

Ms. Julie Chen, a full-time technician currently on staff, will devote 50% of her time to this project ($ 16,000) to prepare samples for analysis and record results.

Support is requested for two graduate students at $ 6,000 each. These students will collect samples under supervision of the PI and Co-PI's.

Fringe Benefits

Fringe benefits are calculated at 25% of salary for the PI, Co-PI's and Technician.

Graduate Students do not receive benefits in accord with standing University policy.

Equipment

Support is requested to purchase an Analysis Machine to be used exclusively on this project. The catalog price quoted by the manufacturer for this item is $ 15,000.

Travel

The PI and Co-PI will travel to two technical conferences at an estimated cost of

$ 1,000 per conference. The project will need $ 2,000 for local travel by graduate students and faculty for sample collection (auto mileage and meal allowances).

$ 1,500 is budgeted for the PI to travel to an international conference to present research results.

Materials and Supplies

Total request of $ 9,500 is based on estimates of $ 4,500 for consumable lab supplies,

$ 3,500 for chemicals for sample analysis and $ 1,500 for specialized sample containers.

Consultant Services

Dr. Howard Phillips, chief scientist for LMC Systems Inc. will act as a consultant in the interpretation of certain sample analysis results.

His rate is $ 300 per day for 5 days plus an estimated $ 1,000 in travel costs.

Subcontracts

Dr. Marilyn Johnson of Azalea University will provide specialized statistical analysis work in connection with final compilation of project data ($ 5,000).

Sample collection and analysis for the control group will be performed at Dogwood College under the supervision of Dr. Albert Hunter ($ 32,000).

Printing

Estimated at $ 800 for journal page charges and $ 700 for the production of 30 copies of a final report as required by the sponsor.

Facilities and Administrative Costs

F&A costs of $ 47,500 are based upon the University's approved F&A rate of 38% of the MTDC base of $ 125,000 (total direct cost less $ 15,000 for equipment and $ 10,000 for Dogwood College subcontract costs over $ 25,000).

Cost Sharing (added section for sample budget II)

Cost sharing of $ 39,572 (20% of $ 197,500 agency request) will be provided as follows:

The PI and Co-PI Dr. Larry Jones will devote time to the project during the academic year. PI at 1.8 AY months ($ 12,686) plus Co-PI at 1.06 AY months ($ 8,457) plus fringes benefits ($ 5,286) at 25% of salary.

The University will provide tuition remission to the two graduate students.

($ 155 per semester hour for 10 hours for two students= $ 3,100).

Applicable F&A costs ($10,043) at 38% of salary/fringe (tuition remission excluded).

$ 26,429 salary/fringe + $ 3,100 tuition remission + 10,043 F&A = $ 39,572 cost share

Taking the time to manage your money better can really pay off. It can help you stay on top of your bills and save £1,000s each year. You can use these extra savings to pay off any debts you might have, put them towards your pension, or spend them on your next car or holiday. Read on for money management tips, including how to set up a budget, sticking to it and how to save. How to set up a budget. Work out how much spending money is available and agree between you what you'll each have. More on Should you manage money jointly or separately? Cutting your household bills and your mortgage. For many of us, household bills make up a large chunk of our spending. These budget management strategies will keep your project budget under control and your stakeholders happy â€" even during uncertain times. What stakeholders say they need or want in a project often isn't as simple as it may seem upfront. This can lead to unidentified goals and expectations on both sides of the table. If maintaining the current project budget is not possible, stakeholders should know the root cause of any potential overruns to make informed decisions about proceeding. Scope changes are likely necessary. A 10% budget overrun is far easier to correct than a 50% overrun, and if you don't keep an eye on your budget and reforecast, that 10% overrun can turn into a 50% overrun before you know it. Don't know where to start? Answer a few questions, so we can find the best way to help. Get help now. Most budgets use monthly figures. If you've got weekly costs you'll need to work out what this is monthly. To do this you need to multiply the cost by 52 and then divide it by 12. How do I include costs that only happen occasionally on my budget? These could be things like car servicing or birthdays. The Money Advice ServiceThis website is full of budgeting and money management advice. It includes what you should do with your money if you've got a bit left over each month. Money Saving ExpertFounded by Martin Lewis, MoneySavingExpert.com is home to a host of budgeting information and money saving ideas.