Proposal and Grant Writing Guides in all Disciplines and Research Categories Eligible for funding at BU

Many online websites and sources from webinars to complete courses provide general advice about proposal development and about writing winning proposals. I have compiled here various useful introductory and general guides as well as specific guides that address specific categories of research mentioned in IRG, including research in the disciplines (humanities, social sciences and the sciences), the scholarship of teaching, and university-related research (internal reports).

I) General Sources:

1. Proposal Writing Basics Webinar:

https://foundationcenter.adobeconnect.com/_a1014556160/p2gnry1f1q0/?launcher=false&fsContent=true&pbMode=normal (Part 2 Minute 7:00)

2. Foolproof Research Proposal Template:

http://theprofessorisin.com/2011/07/05/dr-karens-foolproof-grant-template/

3. How to Write a Research Proposal:


4. General Tips for Writing Research proposals:

http://arts.brighton.ac.uk/research/doctoral-centre-arts/advice-on-writing-a-research-study-proposal

5. Proposal Writing Short Course:

http://foundationcenter.org/getstarted/tutorials/shortcourse/prop1_print

II) Writing Effective Grant Proposals for Individual Fellowships in the Humanities and Social Sciences:

http://apps.carleton.edu/campus/doc/faculty-resources/research_and_grants/external_grants/writing_effective_proposals/

Writing Arts and Humanities Proposals:
http://grants.cla.umn.edu/services/arthumprop.html

Research in Education:
http://www.edu.plymouth.ac.uk/resined/beginning/begresed.htm


IV) Grant Proposal Writing in Nursing:

[http://journals.lww.com/nursingmanagement/Fulltext/2010/09000/How_to_prepare_a_successful_grant_proposal.10.aspx](http://journals.lww.com/nursingmanagement/Fulltext/2010/09000/How_to_prepare_a_successful_grant_proposal.10.aspx)

V) Proposal Writing in Scholarship of Teaching:

[http://teaching.uncc.edu/learning-resources/sotl/grants](http://teaching.uncc.edu/learning-resources/sotl/grants)

VI) Proposal Writing in Internal Reports:

[http://www.add.devry.edu/PDFs/Proposal_Guide.pdf](http://www.add.devry.edu/PDFs/Proposal_Guide.pdf)

VII) Grant Proposals: Assessment Criteria


VIII) Other Guides:

1. The art of Grantsmanship:

[http://www.hfsp.org/funding/art-grantsmanship](http://www.hfsp.org/funding/art-grantsmanship)

2. Writing proposals for sponsored Projects:

[http://orsp.umich.edu/proposals/pwg/pwgcontents.html](http://orsp.umich.edu/proposals/pwg/pwgcontents.html)

3. Listings for Proposal Guides (specific disciplines or specific agencies and organizations):


4. Tips:

[http://writingcenter.unc.edu/handouts/grant-proposals-or-give-me-the-money/](http://writingcenter.unc.edu/handouts/grant-proposals-or-give-me-the-money/)

5. Frequently Asked Questions:

[http://foundationcenter.org/getstarted/faqs/section_3d](http://foundationcenter.org/getstarted/faqs/section_3d)
LARGE GENERAL TOPIC OF WIDE INTEREST
(Global Warming, Immigration, Cancer, Etc.)

Brief Ref. to Literature I

Brief Ref. to Literature II

“HOWEVER, scholars in these fields have not yet adequately addressed XXX...”

GAP IN KNOWLEDGE
1. Urgency: This gap is bad!!!
2. HERO Narrative: I will fill this gap!!!

YOUR RESEARCH QUESTION
“I am applying to XXX to support my research on XXX”

SPECIFICS OF YOUR PROJECT
(background info, location, history, context, limitations, etc.)

LITERATURE REVIEW (Multi-page, thorough, accurate, relevant)

METHODOLOGY (Discipline specific)

TIMELINE (Month by month plan)

BUDGET (Realistic and legitimate expenses)

STRONG CONCLUSION!!!
(“I expect this research to contribute to debates on xxxxxx”)
Let’s walk through this step by step.

The first step is to identify what large general topic of wide interest that your specific project relates to. These are topics that anyone, including your grandmother or someone sitting next to you on a plane, would say, “oh, yes, that’s an important topic.” Examples include: immigration, sustainable energy, changes in the family, curing cancer, new social technologies, environmental degradation, global warming, etc. Until you can identify a really broadly interesting theme that your project relates to, you will never be successful in applying for grants.

This is because your application must *excite* the readers, and the readers are likely from a range of different disciplines. They will not all be interested in your discipline’s narrow debates. They want to know that your work and your intellectual and scholarly vision are wide, and broad, and encompassing.

Once you have established your wide, much debated, topic, you then identify two bodies of literature relevant to your own training that dealt with this topic.

If you are an anthropologist, and your research is on Haitian communities in New York City, for example, you will start by pointing to the wide debates on immigration in America. Then you will write, “scholars in many fields have addressed these important questions. Within cultural anthropology, scholars such as xxx, xxx, and xxx have all explored the role of cultural beliefs in shaping immigrant communities. Within Caribbean Studies, meanwhile, scholars such as xxx, xxx, and xxx have focused on the specific demographic and economic trends which have fueled outward migration.”

This brief survey will be no more than 3 sentences long. And indeed all of the above must be done in two paragraphs and no more. Complain, claim that it is “impossible,” and then get it down to two paragraphs. Because it is only the Introduction to the “Kicker” Sentence, the axis on which your entire appeal for funding rests. And the Kicker Sentence must be on the first page.

The Kicker is your “HOWEVER” sentence. The “however” sentence is the crux and the anchor of your entire proposal.

It reads like this:

“However, none of these works have addressed the central question of XXXXXXXX.”
XXXXXXXXX in this case is YOUR view of what is most essential to an accurate understanding of the big topic, but which has never to date been studied by anyone else.

This brings you to the GAP IN KNOWLEDGE: “Despite much excellent work on themes such as XXX and XXX, scholars examining the transformations in immigration in America have not yet fully explored the importance of XXXX in creating and sustaining these communities.”

Now for the URGENCY:

“Yet, without such an understanding, we are left with an inadequate analysis that creates the condition for ill-informed policy decisions and a self-sustaining cycle of misunderstanding and resentment….”

Now for the HERO NARRATIVE.

“This study will remedy this gap in the literature by examining the class and racial politics of an immigrant Haitian community in New York City in order to more fully elucidate the heretofore unrecognized relationships between XXX and XXXX in one highly contested immigrant context. “

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Remember, YOU are the HERO who is going to save us from ourselves and our inadvertant but devastating ignorance about the true significance of XXX!

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This is immediately followed by a CONCRETE AND UNMISTAKABLE STATEMENT OF YOUR RESEARCH PROJECT (One of the most common grant proposal mistakes is to never include a single and foregrounded, easily identified sentence encapsulating your research project):

” I am applying to the XXX Foundation to support the completion of my dissertation on XXX. Through a close and fine-grained analysis of XXX, I will show that in contrast to previous assumptions, in fact immigrant communities are XXXXXX.”

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The rest of the essay then provides substantiating evidence. In other words, concrete evidence that the project is doable, by you, according to reasonable and well thought out disciplinary methods and timeline.

SPECIFICS: This is one to two paragraphs of more specific information about the background, context, history, and limitations of the research. This demonstrates that you’ve
looked into the project thoroughly and are familiar with it from several angles.

**LITERATURE REVIEW**: This builds on the very brief references in the first paragraph, and demonstrates that you have, in fact, read the major literature related to this topic. All citations must be complete and correct. Zero tolerance for misspellings or typos. All sources MUST, without exception, be listed on the attached bibliography.

**METHODOLOGY**: These are the specific methods that you will use to conduct the research. These differ by discipline.

**TIMELINE**: This is a month-by-month (or week-by-week) plan of research. What will you do when? Be specific! Name dates!

**BUDGET**: This is a general list of costs and any already committed funding sources. Break down your legitimate research expenses, including lab supplies, field supplies, travel both large and small, books and materials, internet or computer access fees, etc.

All of this substantiating evidence is meant to prove, beyond a shadow of a doubt, that you will CORRECTLY UTILIZE the grant money once you receive it.

Finally, you cannot finish without a **STRONG CONCLUSION**. Even one sentence suffices, but do NOT neglect to include it. It may read like this: “I expect this research to contribute to debates on XXXXX and play an important role in shaping debates on XXXX and XXXX in the coming years.”

This Conclusion demonstrates that you are a master of both the micro and the macro implications of your project. You have an unassailable timeline and budget, but you also have your eye on the wider scholarly world and your role in it.

Dr. Karen Kelsky
How to write a research proposal

Title:

It should be concise and descriptive. For example, the phrase, "An investigation of . . ." could be omitted. Often titles are stated in terms of a functional relationship, because such titles clearly indicate the independent and dependent variables. However, if possible, think of an informative but catchy title. An effective title not only pricks the reader's interest, but also predisposes him/her favourably towards the proposal.

Abstract:

It is a brief summary of approximately 300 words. It should include the research question, the rationale for the study, the hypothesis (if any), the method and the main findings. Descriptions of the method may include the design, procedures, the sample and any instruments that will be used.

Introduction:

The main purpose of the introduction is to provide the necessary background or context for your research problem. How to frame the research problem is perhaps the biggest problem in proposal writing.

If the research problem is framed in the context of a general, rambling literature review, then the research question may appear trivial and uninteresting. However, if the same question is placed in the context of a very focused and current research area, its significance will become evident.

Unfortunately, there are no hard and fast rules on how to frame your research question just as there is no prescription on how to write an interesting and informative opening paragraph. A lot depends on your creativity, your ability to think clearly and the depth of your understanding of problem areas.

However, try to place your research question in the context of either a current "hot" area, or an older area that remains viable. Secondly, you need to provide a brief but appropriate historical backdrop. Thirdly, provide the contemporary context in which your proposed research question occupies the central stage. Finally, identify "key players" and refer to the most relevant and representative publications. In short, try to paint your research question in broad brushes and at the same time bring out its significance.

The introduction typically begins with a general statement of the problem area, with a focus on a specific research problem, to be followed by the rational or justification for the proposed study. The introduction generally covers the following elements:
1. State the research problem, which is often referred to as the purpose of the study.
2. Provide the context and set the stage for your research question in such a way as to show its necessity and importance.
3. Present the rationale of your proposed study and clearly indicate why it is worth doing.
4. Briefly describe the major issues and sub-problems to be addressed by your research.
5. Identify the key independent and dependent variables of your experiment. Alternatively, specify the phenomenon you want to study.
6. State your hypothesis or theory, if any. For exploratory or phenomenological research, you may not have any hypotheses. (Please do not confuse the hypothesis with the statistical null hypothesis.)
7. Set the delimitation or boundaries of your proposed research in order to provide a clear focus.
8. Provide definitions of key concepts. (This is optional.)

Literature Review:

Sometimes the literature review is incorporated into the introduction section. However, most professors prefer a separate section, which allows a more thorough review of the literature.

The literature review serves several important functions:

1. Ensures that you are not "reinventing the wheel".
2. Gives credits to those who have laid the groundwork for your research.
3. Demonstrates your knowledge of the research problem.
4. Demonstrates your understanding of the theoretical and research issues related to your research question.
5. Shows your ability to critically evaluate relevant literature information.
6. Indicates your ability to integrate and synthesize the existing literature.
7. Provides new theoretical insights or develops a new model as the conceptual framework for your research.
8. Convinces your reader that your proposed research will make a significant and substantial contribution to the literature (i.e., resolving an important theoretical issue or filling a major gap in the literature)

Most students' literature reviews suffer from the following problems:

- Lacking organization and structure
- Lacking focus, unity and coherence
- Being repetitive and verbose
- Failing to cite influential papers
- Failing to keep up with recent developments
- Failing to critically evaluate cited papers
- Citing irrelevant or trivial references
- Depending too much on secondary sources
Your scholarship and research competence will be questioned if any of the above applies to your proposal.

There are different ways to organize your literature review. Make use of subheadings to bring order and coherence to your review. For example, having established the importance of your research area and its current state of development, you may devote several subsections on related issues as: *theoretical models, measuring instruments, cross-cultural and gender differences, etc.*

It is also helpful to keep in mind that you are telling a story to an audience. Try to tell it in a stimulating and engaging manner. Do not bore them, because it may lead to rejection of your worthy proposal. (Remember: Professors and scientists are human beings too.)

Methods:

The Method section is very important because it tells your Research Committee how you plan to tackle your research problem. It will provide your work plan and describe the activities necessary for the completion of your project.

The guiding principle for writing the Method section is that it should contain sufficient information for the reader to determine whether methodology is sound. Some even argue that a good proposal should contain sufficient details for another qualified researcher to implement the study.

You need to demonstrate your knowledge of alternative methods and make the case that your approach is the most appropriate and most valid way to address your research question.

Please note that your research question may be best answered by qualitative research. However, since most mainstream psychologists are still biased against qualitative research, especially the phenomenological variety, you may need to justify your qualitative method.

Furthermore, since there are no well-established and widely accepted canons in qualitative analysis, your method section needs to be more elaborate than what is required for traditional quantitative research. More importantly, the data collection process in qualitative research has a far greater impact on the results as compared to quantitative research. That is another reason for greater care in describing how you will collect and analyze your data. (How to write the Method section for qualitative research is a topic for another paper.)

For quantitative studies, the method section typically consists of the following sections:
1. Design - Is it a questionnaire study or a laboratory experiment? What kind of design do you choose?
2. Subjects or participants - Who will take part in your study? What kind of sampling procedure do you use?
3. Instruments - What kind of measuring instruments or questionnaires do you use? Why do you choose them? Are they valid and reliable?
4. Procedure - How do you plan to carry out your study? What activities are involved? How long does it take?

Results:

Obviously you do not have results at the proposal stage. However, you need to have some idea about what kind of data you will be collecting, and what statistical procedures will be used in order to answer your research question or test your hypothesis.

Discussion:

It is important to convince your reader of the potential impact of your proposed research. You need to communicate a sense of enthusiasm and confidence without exaggerating the merits of your proposal. That is why you also need to mention the limitations and weaknesses of the proposed research, which may be justified by time and financial constraints as well as by the early developmental stage of your research area.

Common Mistakes in Proposal Writing

1. Failure to provide the proper context to frame the research question.
2. Failure to delimit the boundary conditions for your research.
3. Failure to cite landmark studies.
4. Failure to accurately present the theoretical and empirical contributions by other researchers.
5. Failure to stay focused on the research question.
6. Failure to develop a coherent and persuasive argument for the proposed research.
7. Too much detail on minor issues, but not enough detail on major issues.
8. Too much rambling -- going "all over the map" without a clear sense of direction. (The best proposals move forward with ease and grace like a seamless river.)
9. Too many citation lapses and incorrect references.
10. Too long or too short.
11. Failing to follow the APA style.
12. Slopping writing.
Proposal Writing Short Course

**Introduction**

The subject of this short course is proposal writing. But the proposal does not stand alone. It must be part of a process of planning and of research on, outreach to, and cultivation of potential foundation and corporate donors.

This process is grounded in the conviction that a partnership should develop between the nonprofit and the donor. When you spend a great deal of your time seeking money, it is hard to remember that it can also be difficult to give money away. In fact, the dollars contributed by a foundation or corporation have no value until they are attached to solid programs in the nonprofit sector.

This truly is an ideal partnership. The nonprofits have the ideas and the capacity to solve problems, but no dollars with which to implement them. The foundations and corporations have the financial resources but not the other resources needed to create programs. Bring the two together effectively, and the result is a dynamic collaboration.

You need to follow a step-by-step process in the search for private dollars. It takes time and persistence to succeed. After you have written a proposal, it could take as long as a year to obtain the funds needed to carry it out. And even a perfectly written proposal submitted to the right prospect might be rejected for any number of reasons.

Raising funds is an investment in the future. Your aim should be to build a network of foundation and corporate funders, many of which give small gifts on a fairly steady basis and a few of which give large, periodic grants. By doggedly pursuing the various steps of the process, each year you can retain most of your regular supporters and strike a balance with the comings and goings of larger donors.

The recommended process is not a formula to be rigidly adhered to. It is a suggested approach that can be adapted to fit the needs of any nonprofit and the peculiarities of each situation. Fundraising is an art as well as a science. You must bring your own creativity to it and remain flexible.

**Gathering Background Information**

The first thing you will need to do in writing your proposal is to gather the documentation for it. You will require background documentation in three areas: concept, program, and expenses.

If all of this information is not readily available to you, determine who will help you gather each type of information. If you are part of a small nonprofit with no staff, a knowledgeable
board member will be the logical choice. If you are in a larger agency, there should be program and financial support staff who can help you. Once you know with whom to talk, identify the questions to ask.

This data-gathering process makes the actual writing much easier. And by involving other stakeholders in the process, it also helps key people within your agency seriously consider the project's value to the organization.

Concept
It is important that you have a good sense of how the project fits with the philosophy and mission of your agency. The need that the proposal is addressing must also be documented. These concepts must be well-articulated in the proposal. Funders want to know that a project reinforces the overall direction of an organization, and they may need to be convinced that the case for the project is compelling. You should collect background data on your organization and on the need to be addressed so that your arguments are well-documented.

Program
Here is a check list of the program information you require:

- the nature of the project and how it will be conducted;
- the timetable for the project;
- the anticipated outcomes and how best to evaluate the results; and
- staffing and volunteer needs, including deployment of existing staff and new hires.

Expenses
You will not be able to pin down all the expenses associated with the project until the program details and timing have been worked out. Thus, the main financial data gathering takes place after the narrative part of the master proposal has been written. However, at this stage you do need to sketch out the broad outlines of the budget to be sure that the costs are in reasonable proportion to the outcomes you anticipate. If it appears that the costs will be prohibitive, even with a foundation grant, you should then scale back your plans or adjust them to remove the least cost-effective expenditures.

Components of a Proposal
The Executive Summary

This first page of the proposal is the most important section of the entire document. Here you
will provide the reader with a snapshot of what is to follow. Specifically, it summarizes all of
the key information and is a sales document designed to convince the reader that this project
should be considered for support. Be certain to include:

Problem — a brief statement of the problem or need your agency has
   recognized and is prepared to address (one or two paragraphs);

Solution — a short description of the project, including what will take place and
   how many people will benefit from the program, how and where it
   will operate, for how long, and who will staff it (one or two
   paragraphs);

Funding requirements — an explanation of the amount of grant
   money required
   for the project and what your plans are for funding it in the future
   (one paragraph); and

Organization and its expertise — a brief statement of the history,
   purpose, and activities of your agency, emphasizing its capacity to
   carry out this proposal (one paragraph).

The Statement of Need

If the grants decision-maker reads beyond the executive summary, you have successfully
piqued his or her interest. Your next task is to build on this initial interest in your project by
enabling the funder to understand the problem that the project will remedy.

The statement of need will enable the reader to learn more about the issues. It presents the
facts and evidence that support the need for the project and establishes that your nonprofit
understands the problems and therefore can reasonably address them. The information used to
support the case can come from authorities in the field, as well as from your agency's own
experience.

You want the need section to be succinct, yet persuasive. Like a good debater, you must
assemble all the arguments. Then present them in a logical sequence that will readily convince
the reader of their importance. As you marshal your arguments, consider the following six
points.

First, decide which facts or statistics best support the project. Be sure the data you present
are accurate. There are few things more embarrassing than to have the funder tell you that
your information is out of date or incorrect. Information that is too generic or broad will not
help you develop a winning argument for your project. Information that does not relate to your organization or the project you are presenting will cause the funder to question the entire proposal. There also should be a balance between the information presented and the scale of the program.

Second, give the reader hope. The picture you paint should not be so grim that the solution appears hopeless. The funder will wonder whether an investment in your solution would be worthwhile. Here’s an example of a solid statement of need: "Breast cancer kills. But statistics prove that regular check-ups catch most breast cancer in the early stages, reducing the likelihood of death. Hence, a program to encourage preventive check-ups will reduce the risk of death due to breast cancer." Avoid overstatement and overly emotional appeals.

Third, decide if you want to put your project forward as a model. This approach could expand the base of potential funders. But serving as a model works only for certain types of projects. Don't try to make this argument if it doesn't really fit. Funders may well expect your agency to follow through with a replication plan if you present your project as a model.

If the decision about a model is affirmative, you should document how the problem you are addressing occurs in other communities. Be sure to explain how your solution could be a solution for others as well.

Fourth, determine whether it is reasonable to portray the need as acute. You are asking the funder to pay more attention to your proposal because either the problem you address is worse than others or the solution you propose makes more sense than others. Here is an example of a balanced but weighty statement: "Drug abuse is a national problem. Each day, children all over the country die from drug overdose. In the South Bronx the problem is worse. More children die here than any place else. It is an epidemic. Hence, our drug prevention program is needed more in the South Bronx than in any other part of the city."

Fifth, decide whether you can demonstrate that your program addresses the need differently or better than other projects that preceded it. It is often difficult to describe the need for your project without being critical of the competition. But you must be careful to do so. Being critical of other nonprofits will not be well received by the funder. It may cause the funder to look more carefully at your own project to see why you felt you had to build your case by demeaning others. The funder may have invested in these other projects or may begin to consider them, now that you have brought them to the funder's attention.

If possible, you should make it clear that you are cognizant of, and on good terms with, others doing work in your field. Keep in mind that today's funders are very interested in collaboration. They may even ask why you are not collaborating with those you view as key competitors. So at the least you need to describe how your work complements, but does not duplicate, the work of others.

Sixth, avoid circular reasoning. In circular reasoning, you present the absence of your solution as the actual problem. Then your solution is offered as the way to solve the problem.
For example, the circular reasoning for building a community swimming pool might go like this: "The problem is that we have no pool in our community. Building a pool will solve the problem." A more persuasive case would cite what a pool has meant to a neighboring community, permitting it to offer recreation, exercise, and physical therapy programs. The statement might refer to a survey that underscores the target audience's planned usage of the facility and conclude with the connection between the proposed usage and potential benefits to enhance life in the community for audiences the funder cares about.

The statement of need does not have to be long and involved. Short, concise information captures the reader's attention.

**The Project Description**

This section of your proposal should have five subsections: objectives, methods, staffing/administration, evaluation, and sustainability. Together, objectives and methods dictate staffing and administrative requirements. They then become the focus of the evaluation to assess the results of the project. The project's sustainability flows directly from its success, hence its ability to attract other support. Taken together, the five subsections present an interlocking picture of the total project.

**Objectives**

Objectives are the measurable outcomes of the program. They define your methods. Your objectives must be tangible, specific, concrete, measurable, and achievable in a specified time period. Grantseekers often confuse objectives with goals, which are conceptual and more abstract. For the purpose of illustration, here is the goal of a project with a subsidiary objective:

**Goal:** Our after-school program will help children read better.

**Objective:** Our after-school remedial education program will assist 50 children in improving their reading scores by one grade level as demonstrated by standardized reading tests administered after participating in the program for six months.

The goal in this case is abstract: improving reading, while the objective is much more specific. It is achievable in the short term (six months) and measurable (improving 50 children's reading scores by one grade level).

With competition for dollars so great, well-articulated objectives are increasingly critical to a proposal's success.

Using a different example, there are at least four types of objectives:
1. **Behavioral** — A human action is anticipated.

   *Example: Fifty of the 70 children participating will learn to swim.*

2. **Performance** — A specific time frame within which a behavior will occur, at an expected proficiency level, is expected.

   *Example: Fifty of the 70 children will learn to swim within six months and will pass a basic swimming proficiency test administered by a Red Cross-certified lifeguard.*

3. **Process** — The manner in which something occurs is an end in itself.

   *Example: We will document the teaching methods utilized, identifying those with the greatest success.*

4. **Product** — A tangible item results.

   *Example: A manual will be created to be used in teaching swimming to this age and proficiency group in the future.*

In any given proposal, you will find yourself setting forth one or more of these types of objectives, depending on the nature of your project. Be certain to present the objectives very clearly. Make sure that they do not become lost in verbiage and that they stand out on the page. You might, for example, use numbers, bullets, or indentations to denote the objectives in the text. Above all, be realistic in setting objectives. Don't promise what you can't deliver. Remember, the funder will want to be told in the final report that the project actually accomplished these objectives.

**Methods**

By means of the objectives, you have explained to the funder what will be achieved by the project. The methods section describes the specific activities that will take place to achieve the objectives. It might be helpful to divide our discussion of methods into the following: how, when, and why.

**How:** This is the detailed description of what will occur from the time the project begins until it is completed. Your methods should match the previously stated objectives.

**When:** The methods section should present the order and timing for the tasks. It might make sense to provide a timetable so that the grants decision-maker does not have to map out the sequencing on his or her own. The timetable tells the reader "when" and provides another summary of the project that supports the rest of the methods section.
Why: You may need to defend your chosen methods, especially if they are new or unorthodox. Why will the planned work most effectively lead to the outcomes you anticipate? You can answer this question in a number of ways, including using expert testimony and examples of other projects that work.

The methods section enables the reader to visualize the implementation of the project. It should convince the reader that your agency knows what it is doing, thereby establishing its credibility.

Staffing/Administration

In describing the methods, you will have mentioned staffing for the project. You now need to devote a few sentences to discussing the number of staff, their qualifications, and specific assignments. Details about individual staff members involved in the project can be included either as part of this section or in the appendix, depending on the length and importance of this information.

"Staffing" may refer to volunteers or to consultants, as well as to paid staff. Most proposal writers do not develop staffing sections for projects that are primarily volunteer run. Describing tasks that volunteers will undertake, however, can be most helpful to the proposal reader. Such information underscores the value added by the volunteers as well as the cost-effectiveness of the project.

For a project with paid staff, be certain to describe which staff will work full time and which will work part time on the project. Identify staff already employed by your nonprofit and those to be recruited specifically for the project. How will you free up the time of an already fully deployed individual?

Salary and project costs are affected by the qualifications of the staff. Delineate the practical experience you require for key staff, as well as level of expertise and educational background. If an individual has already been selected to direct the program, summarize his or her credentials and include a brief biographical sketch in the appendix. A strong project director can help influence a grant decision.

Describe for the reader your plans for administering the project. This is especially important in a large operation, if more than one agency is collaborating on the project, or if you are using a fiscal agent. It needs to be crystal clear who is responsible for financial management, project outcomes, and reporting.

Evaluation

An evaluation plan should not be considered only after the project is over; it should be built into the project. Including an evaluation plan in your proposal indicates that you take your objectives seriously and want to know how well you have achieved them. Evaluation is also a sound management tool. Like strategic planning, it helps a nonprofit refine and improve its program. An evaluation can often be the best means for others to
learn from your experience in conducting the project.

There are several types of formal evaluation. One measures the product; others analyze the process and/or strategies you've adopted. Most seek to determine the impact on the audiences you serve and the measurable outcomes of your grant project. Either or both might be appropriate to your project. The approach you choose will depend on the nature of the project and its objectives. Whatever form your evaluation takes, you will need to describe the manner in which evaluation information will be collected and how the data will be analyzed.

Most sound evaluation plans include both qualitative and quantitative data. You should present your plan for how the evaluation and its results will be reported and the audience to which it will be directed. For example, it might be used internally or be shared with the funder, or it might deserve a wider audience. A funder might even have an opinion about the scope of this dissemination. Many funders also have suggestions about who should conduct the evaluation, whether it be your own program staff or outside consultants. Some funders allow for the inclusion of the cost of evaluation as part of the project budget.

**Sustainability**

A clear message from grantmakers today is that grantseekers will be expected to demonstrate in very concrete ways the long-term financial viability of the project to be funded and of the nonprofit organization itself.

It stands to reason that most grantmakers will not want to take on a permanent funding commitment to a particular agency. Rather, funders will want you to prove either that your project is finite (with start-up and ending dates); or that it is capacity-building (that it will contribute to the future self-sufficiency of your agency and/or enable it to expand services that might generate revenue); or that it will make your organization attractive to other funders in the future. Evidence of fiscal sustainability is a highly sought-after characteristic of the successful grant proposal.

It behooves you to be very specific about current and projected funding streams, both earned income and fundraised, and about the base of financial support for your nonprofit. Here is an area where it is important to have backup figures and prognostications at the ready, in case a prospective funder asks for these, even though you are unlikely to include this information in the actual grant proposal. Some grantmakers, of course, will want to know who else will be receiving a copy of this same proposal. You should not be shy about sharing this information with the funder.
The Budget

The budget for your proposal may be as simple as a one-page statement of projected revenue and expenses. Or your proposal may require a more complex presentation, perhaps including a page on projected support and notes explaining various items of expense or of revenue.

Expense Budget

As you prepare to assemble the budget, go back through the proposal narrative and make a list of all personnel and nonpersonnel items related to the operation of the project. Be sure that you list not only new costs that will be incurred if the project is funded but also any ongoing expenses for items that will be allocated to the project. Then get the relevant costs from the person in your agency who is responsible for keeping the books. You may need to estimate the proportions of your agency's ongoing expenses that should be charged to the project and any new costs, such as salaries for project personnel not yet hired. Put the costs you have identified next to each item on your list.

Your list of budget items and the calculations you have done to arrive at a dollar figure for each item should be summarized on worksheets. You should keep these to remind yourself how the numbers were derived. These worksheets can be useful as you continue to develop the proposal and discuss it with funders; they are also a valuable tool for monitoring the project once it is under way and for reporting after completion of the grant.

A portion of a worksheet for a year-long project might look like this:

<table>
<thead>
<tr>
<th>Item</th>
<th>Description</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive</td>
<td>Supervision</td>
<td>10% of salary = $10,000</td>
</tr>
<tr>
<td>director</td>
<td></td>
<td>25% benefits = $2,500</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Project</td>
<td>Hired in month one</td>
<td>11 months at $35,000 = $32,083</td>
</tr>
<tr>
<td>director</td>
<td></td>
<td>25% benefits = $8,025</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tutors</td>
<td>12 working 10 hours per week for three months</td>
<td>12 x 10 x 13 x $4.50 = $7,020</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Office space</td>
<td>Requires 25% of current space</td>
<td>25% x $20,000 = $5,000</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Overhead</td>
<td>20% of project</td>
<td>20% x $64,628 = $12,926</td>
</tr>
</tbody>
</table>
With your worksheets in hand, you are ready to prepare the expense budget. For most projects, costs should be grouped into subcategories, selected to reflect the critical areas of expense. All significant costs should be broken out within the subcategories, but small ones can be combined on one line. You might divide your expense budget into personnel and nonpersonnel costs; your personnel subcategories might include salaries, benefits, and consultants. Subcategories under nonpersonnel costs might include travel, equipment, and printing, for example, with a dollar figure attached to each line. Overhead, or indirect costs, is important to include because projects do not exist in isolation. Funders may have policies regarding the percentage of overhead they will allow in a project budget, if they allow it at all.

**Support and Revenue and Statement**

For the typical project, no support and revenue statement is necessary. The expense budget represents the amount of grant support required. But if grant support has already been awarded to the project, or if you expect project activities to generate income, a support and revenue statement is the place to provide this information.

In itemizing grant support, make note of any earmarked grants; this will suggest how new grants may be allocated. The total grant support already committed should then be deducted from the “Total Expenses” line on the expense budget to give you the “Amount to Be Raised” or the “Balance Requested.”

Any earned income anticipated should be estimated on the support and revenue statement. For instance, if you expect 50 people to attend your performance on each of the four nights, it is given at $10 a ticket, and if you hope that 20 of them will buy the $5 souvenir book each night, you would show two lines of income, “Ticket Sales” at $2,000 and “Souvenir Book Sales” at $400. As with the expense budget, you should keep backup worksheets for the support and revenue statement to remind yourself of the assumptions you have made.

**Budget Narrative**

A narrative portion of the budget is used to explain any unusual line items in the budget and is not always needed. If costs are straightforward and the numbers tell the story clearly, explanations are redundant.

If you decide a budget narrative is needed, you can structure it in one of two ways. You can create "Notes to the Budget," with footnote-style numbers on the line items in the budget key to numbered explanations. If an extensive or more general explanation is required, you can structure the budget narrative as straight text. Remember though, the
basic narrative about the project and your organization belongs elsewhere in the proposal, not in the budget narrative.

Organizational Information and Conclusion

Organizational Information

Normally a resume of your nonprofit organization should come at the end of your proposal. Your natural inclination may be to put this information up front in the document. But it is usually better to sell the need for your project and then your agency's ability to carry it out.

It is not necessary to overwhelm the reader with facts about your organization. This information can be conveyed easily by attaching a brochure or other prepared statement. In two pages or less, tell the reader when your nonprofit came into existence; state its mission, being certain to demonstrate how the subject of the proposal fits within or extends that mission; and describe the organization's structure, programs, leadership, and special expertise.

Discuss the size of the board, how board members are recruited, and their level of participation. Give the reader a feel for the makeup of the board. (You should include the full board list in an appendix.) If your agency is composed of volunteers or has an active volunteer group, describe the function that the volunteers perform. Provide details on the staff, including the numbers of full and part-time staff, and their levels of expertise.

Describe the kinds of activities in which your staff engage. Explain briefly the assistance you provide. Describe the audience you serve, any special or unusual needs they face, and why they rely on your agency. Cite the number of people who are reached through your programs.

Tying all of the information about your nonprofit together, cite your agency's expertise, especially as it relates to the subject of your proposal.

Letter Proposal

Sometimes the scale of the project might suggest a small-scale letter format proposal, or the type of request might not require all of the proposal components or the components in the sequence recommended here. The guidelines and policies of individual funders will be your ultimate guide. Many funders today state that they prefer a brief letter proposal; others require that you complete an application form. In any case, you will want to refer to the basic proposal components as provided here to be sure that you have not omitted an element that will support your case.
As noted, the scale of the project will often determine whether it requires a letter or the longer proposal format. For example, a request to purchase a $1,000 fax machine for your agency simply does not lend itself to a lengthy narrative. A small contribution to your agency’s annual operating budget, particularly if it is a renewal of past support, might also warrant a letter rather than a full-scale proposal.

What are the elements of a letter request? For the most part, they should follow the format of a full proposal, except with regard to length. The letter should be no more than three pages. You will need to call upon your writing skills because it can be very hard to get all of the necessary details into a concise, well-articulated letter.

As to the flow of information, follow these steps while keeping in mind that you are writing a letter to another person. It should not be as formal in style as a longer proposal would be. It may be necessary to change the sequence of the text to achieve the correct tone and the right flow of information.

Here are the components of a good letter proposal:

- **Ask for the gift:** The letter should begin with a reference to your prior contact with the funder, if any. State why you are writing and how much funding is required from the particular foundation.
- **Describe the need:** In a very abbreviated manner, tell the funder why there is a need for this project, piece of equipment, etc.
- **Explain what you will do:** Just as you would in a fuller proposal, provide enough detail to pique the funder’s interest. Describe precisely what will take place as a result of the grant.
- **Provide agency data:** Help the funder know a bit more about your organization by including your mission statement, brief description of programs offered, number of people served, and staff, volunteer, and board data, if appropriate.
- **Include appropriate budget data:** Even a letter request may have a budget that is a half-page long. Decide if this information should be incorporated into the letter or in a separate attachment. Whichever course you choose, be sure to indicate the total cost of the project. Discuss future funding only if the absence of this information will raise questions.
- **Close:** As with the longer proposal, a letter proposal needs a strong concluding statement. Offer to provide more details or meet with the funder.
- **Attach any additional information required:** The funder may need much of the same information to back up a small request as a large one: a board list, a copy of your IRS determination letter, financial documentation, and brief resumes of key staff.

It may take as much thought and data gathering to write a good letter request as it does to prepare a full proposal (and sometimes even more). Don’t assume that because it is only a letter, it isn’t a time-consuming and challenging task. Every document you put in front of a funder says something about your agency. Each step you take with a funder should build a relationship for the future.
Conclusion

Every proposal should have a concluding paragraph or two. This is a good place to call attention to the future, after the grant is completed. If appropriate, you should outline some of the follow-up activities that might be undertaken to begin to prepare your funder for your next request. Alternatively, you should state how the project might carry on without further grant support.

This section is also the place to make a final appeal for your project. Briefly reiterate what your nonprofit wants to do and why it is important. Underscore why your agency needs funding to accomplish it. Don't be afraid at this stage to use a bit of emotion to solidify your case.

What Happens Next?

Submitting your proposal is nowhere near the end of your involvement in the grantseeking process. Grant review procedures vary widely, and the decision-making process can take anywhere from a few weeks to six months or more. During the review process, the funder may ask for additional information either directly from you or from outside consultants or professional references. Invariably, this is a difficult time for the grantseeker. You need to be patient but persistent. Some grantmakers outline their review procedures in annual reports or application guidelines. If you are unclear about the process, don't hesitate to ask.

If your hard work results in a grant, take a few moments to acknowledge the funder's support with a letter of thanks. You also need to find out whether the funder has specific forms, procedures, and deadlines for reporting on the progress of your project. Clarifying your responsibilities as a grantee at the outset, particularly with respect to financial reporting, will prevent misunderstandings and more serious problems later.

Nor is rejection necessarily the end of the process. If you're unsure why your proposal was turned down, ask. Did the funder need additional information? Would they be interested in considering the proposal at a future date? Now might also be the time to begin cultivation of a prospective funder. Put them on your mailing list so that they can become further acquainted with your organization. Remember, there's always next year.

This short course in proposal writing was adapted from *The Foundation Center's Guide to Proposal Writing*, 5th ed. (New York: The Foundation Center, 2007), by Jane C. Geever, chairman of the development consulting firm, J. C. Geever, Inc.
General Tips for Writing Research proposals:

http://arts.brighton.ac.uk/research/doctoral-centre-arts/advice-on-writing-a-research-study-proposal

A research proposal provides a basis for decision-making, and helps to make sure that you get the most appropriate supervisor for your research. It is natural for ideas to evolve and change, so you will not be obliged to adhere to the specifics of your proposal if you are offered a place at the University of Brighton. However, following a successful application, the proposal will help to focus your early research and discussions between you and your supervisor.

Within your application you must present an 800-1000 word written statement that details your research proposal, with images if appropriate, and that outlines your proposed research questions, aims and objectives, and research methodologies. Because applicants vary in the types of research projects they wish to undertake we do not insist on any rigid format. We do however encourage students to keep the following in mind:

Overview of the project

The proposal should begin by stating the core research question that underpins the proposed project. An effective research proposal should begin with a question rather than being purely exploratory in nature.

Having established the question, the proposal should then demonstrate where that question is to be located, and provide an indication of the key theoretical, practical or empirical debates it plans to address. It should include an explanation of why the topic is of interest to you, and an outline of the reasons why the topic should be of interest to the wider research community.

The research area

The proposal should include a brief up-to-date review of literature in your area. You need to demonstrate a familiarity with the relevant academic literature and theories relating to your research proposal and an awareness of the major lines of argument that have been developed in your chosen research field. You should aim to present an indicative statement of the state of current scholarship, showing the gaps in knowledge that you will address. Appropriate breadth and depth should be clear, as well as the inclusion of up-to-date references and a sense of critical engagement. This statement should be presented in support of the research question and not as a generic discussion of a field. You need to demonstrate the ways in which your primary research question and subsidiary lines of investigation have emerged: for example from gaps in the existing literature; from the application of a particular theory in a specific context; or from a synthesis of a number of bodies of literature.
Methodology

There are many research methods, so you should seek to identify those that are most suited to your area of research. Many students apply for research through artistic practice. Other projects may involve case-study analysis, the analysis of historical records or design archives, interviews, critical involvement in curatorship, or the analysis of textual sources.

The application should state clearly whether you will need on-line access to databases or access to relevant archives. Importantly, you need to explain the manner in which the data you collect will enable you to address your research question.

Practice-base

If your research is anchored in artistic practice you should include suitable samples of your work. Typically these are photographic evidence along with clear statements of how the artistic production will lead the research, including the process of making, testing, and reflecting upon practice.

Bibliography

You should include a list of indicative sources, following in a uniform format. This can be additional to the 800-1000 word count.

Outcomes

Although no indication of the research findings can be presented, it is often beneficial to conclude the research proposal by indicating the contribution you envisage that your research will make to the literature in your particular subject area, or by indicating the potential practical or policy implications of your research. This means providing an indication of the extent to which you feel your research will make an original contribution, suggesting how it may fill gaps in existing research, and showing how it may extend understanding of particular topics.

Timetable

Evidence should be provided of how the project will be completed within the allotted time: benchmarks (literature review; writing the draft; final submission) should be indicated in a projected timetable of study and development.

Personal Statement

In the personal statement you should show how your own background gives you scholarly competences in your chosen area. Some explanation of what led you to the topic, especially if this is after the development of a former qualification or vocational practice, would be appropriate.
Presentation

While your research proposal is judged mainly on content, it must also look professional. It should be typed and written in good English. Particular attention will be paid to clarity of expression and also the structure, coherence and flow of argument.

Typical Weaknesses

Applications are often delayed or rejected because of the following problems:

The project cannot be supervised at Brighton

Make sure that the specialist area you wish to study is covered by a member(s) of staff. You can do this by checking individual College of Arts and Humanities staff profiles on the website. You might also try contacting academic staff directly.

The project is not focused

You research proposal should be as specific and as focused as possible. Although your project may alter significantly as you progress, we cannot accept students who have only a vague idea of a research field.

A passion to explore is not sufficient in itself. The onus is on you to state the question(s) which underpin your proposed research. Your ability to frame your research in this way demonstrates your potential to think like a researcher.

The project is unlikely to be completed

PhDs are typically 3 - 4 years full time and around 6 years full-time. Projects cannot be accepted which are unlikely to be completed on this timescale, whether because of student competence, resource issues or the extent of the topic.

The practice is not research

Your project should clearly be an MPhil/ PhD. Artwork, however original it may be, does not qualify as research in itself. Artistic practice through which research is to be undertaken must be justified.
Writing Effective Grant Proposals for Individual Fellowships in the Humanities and Social Sciences
Susan Stanford Friedman
University of Wisconsin-Madison

http://apps.carleton.edu/campus/doc/faculty-resources/research_and_grants/external_grants/writing_effective_proposals/

The Big Picture

It's important to "think big," "paint the big picture," emphasize "the forest, not just the trees" for a grant proposal. To do so effectively requires stepping back from your project, seeing it as a whole in relation to a larger field, abstracting at a conceptual level what you are doing, how you are doing it, and why it is significant. Grant writing, like any other kind of writing, involves a set of conventions that vary considerably by discipline and by division of knowledge (humanities, qualitative or quantitative social sciences, natural sciences, and the arts). In the humanities and some of the social sciences (especially qualitative social sciences), grant proposals usually face strict page limitations—anywhere from about two to ten pages. This requirement means that effective grant proposals typically "stand back from" or "hover above" the project, abstract or distill its larger themes and methodologies, and avoid getting immersed in the details. At the same time, proposals need to demonstrate the specificity and richness of your material, your knowledge of relevant fields, and your capacity for conceptual and evidential precision. Usually, extensive literature reviews are not required or even effective. Your project needs to maintain a strong focus, although skillful proposals weave references to major publications throughout and brief bibliographies are sometimes required or allowed.

Granting agencies often want to see evidence that your research project is well established, that you already know the larger field to which your work contributes, and that you know quite specifically what you will be doing before, during, and after the grant period. Most individual fellowships—e.g., NEH, ACLS, Guggenheim, etc.—expect a publication to result from the grant, most likely a book, not an edited collection, and not an article unless your field typically publishes research in the form of refereed articles.

The Big Three Questions

Your grant proposal should make crystal clear three main things: (1) **What you are doing**; (2) **How you are doing it**; (3) **Why it is significant**. It's even a good idea to open the proposal with a lively summary paragraph that answers all three of these questions directly. Projects that facilitate direct presentation of this vital information are often organized around a clear, overarching research question. Rather than explain your project in terms of a topic or even a thesis, you can focus your presentation around the major research questions you are asking, how you plan to answer them, and what contribution your project will make to fields of knowledge. You do not need to know what you will argue in the final product before you get the grant. Indeed, some committees will worry that research is too "thesis-driven" if the researcher knows what he or she wants to argue before the research is completed. Thus, avoid language such as "I will argue"; instead, write "I will explore," or "I will test the proposition that." (If your project is
nearing completion, assertions of your thesis are more acceptable.) Your statements on the **significance** of your project are very important. Don't depend on your recommenders to do this for you. Explain what interventions your project makes in ongoing debates in your immediate field, and then what larger contributions it will make to scholarly and/or humanistic knowledge. Here is where it helps to **think big.** Communicate in a lively and interesting way what's at stake in your research. Why should anyone care about your project? Can it pass the "so what?" test? What difference will it make? Don't assume the self-evident importance of your research. Even though we might all believe as scholars that knowledge as an end in itself should be justification enough, not all knowledge gets research funding. Therefore, you need to explain why your project deserves the grant.

**Audience for the Proposal**

Who is the audience for your grant proposal? Will it be a panel of specialists in your field? Panelists in your discipline? An interdisciplinary or Multidisciplinary panel? Does the granting agency have a multi-tiered process for approval involving outside experts and in-house program officers? How controversial is your research--in its research questions, methodologies, findings, etc.? Will it tap into divisive debates in your field? Into the "culture wars" of postmodernity? The answers to these questions can have a huge impact on how your proposal will be read. The more specialized the panels, the more specialized your proposal can be. The wider the disciplinary reach of the panel, the more you have to make sure you provide sufficient context for your project and that you describe it in language that is clear to people outside your immediate field. Since program officers within a granting agency often weigh in on proposals in conjunction with outside faculty expertise your proposal may well need to be understandable and persuasive to a range of evaluators.

On the whole, avoid jargon. The issue of "jargon" is a tough one: what appears to be jargon to someone outside your field may well be ordinary or even expected discourse within your immediate field. But one thing is certain: if you cannot communicate what your research is about, your chances of getting funded plummet. Worry less about appearing too simple than being obscure. However, don't write a "thin" proposal. You need to communicate your conceptual framework and ideas with precision and specificity, and you need to communicate some of the particularities of the material you will draw upon or work with.

How can you determine who the audience is and what the decision-making process is your proposal? This can often be difficult, but not totally impossible. The NEH uses panelists of faculty specialists whose comments must be written (copies are available upon request), but the in-house program officers and staff make the final decisions, based on but not absolutely determined by faculty rankings. The ACLS uses a multidisciplinary panel. You can call the agency and speak directly with the program officer, who will often provide considerable information about the nature of the process and the constitution of panels. Some officers will also work with you on the development of the proposal (especially in the case of collaborative grants). You can also check out an agency's Web site for information. Different agencies are often interested in different kinds of projects; some even sponsor theme-oriented competitions that change annually. You certainly maximize your chances of getting funded by finding out whatever you can about the interests, needs, and processes of the agencies to which you apply.
Even when you can't get much information about your likely reviewers, **clarity** and **directness** go a long way, particularly since panelists often have huge numbers of files to evaluate and rank. It does not help your case to make the panelists dig for coherence through a mass of detail or a discourse that seems impenetrable. As to the minefields of debate and political alignments, you should assess these issues as they relate to your project and sub-field; you can try to avoid inflammatory discourse or trigger words. But in my view, it won't help your proposal if you "go bland," try to be "safe," to hide what it is you are doing. You want to communicate your excitement about your project, your belief in its importance and significance. If you try too hard to please everybody and avoid all controversy, your project runs the risk of sounding just boring.

**Parts of a Grant Proposal**

Different granting agencies often state explicitly what aspects of your project you should address in the proposal and/or what special emphases, topics, or themes they are looking for. Read and follow all specific instructions carefully. Avoid multiple submission of the same proposal to agencies that are looking for different kinds of things. Develop a basic proposal for your project and then adjust carefully as necessary. Address the specifics of the particular grant especially in introductory or concluding remarks. In addition, some agencies require supplementary statements, such as a narrative autobiography, an annotated bibliography, etc.

There is no standard format or organization for proposals. Different ways of presenting your project can be equally effective. Sub-headings (e.g., description; rationale or significance; methodology; chapter outline; schedule of research) can offer effective "signposts" and facilitate rapid comprehension. Clear, strong, direct topics sentences for all paragraphs can be equally effective. A summary introduction of the whole project—including such specifics as authors, texts, archives, and necessary contexts—makes an effective beginning. Quick and to the point is better, in most cases, than elaborately long introductions based on a narrative, details for a text, and so forth. After the introduction, the order of parts often varies, but proposals tend to include a description of the project, a statement about its necessity or contribution, a chapter outline; and a schedule of research. These sections need to be specific, indicating, for example, what primary and secondary materials you are working with, archives or special collections you need to consult, related scholarly literature (often cited in parenthetical style), and so forth.

If the project is a revision of a dissertation, explain what substantive new research and/or conceptual reorientation is planned. (Granting agencies are frequently reluctant to fund stylistic revisions of dissertations.) If the project is an outgrowth of earlier work or a stepping stone in a multi-stage research program, such connections should be outlined briefly. Your proposal should inform the panelists in some way why you are qualified to do this project and what function it is likely to play in your professional development.

**Schedule of Research**

This section, which often serves as the proposal's conclusion, is a good place to communicate how you are particularly qualified to do this project, and that your "track record" on this and related projects offers good evidence that you will complete a final manuscript in a timely fashion. The section does not have to be long, but it should succinctly state the status of the
project, your plans for use of the grant period, and your estimated completion date for the final manuscript. Include reference to material in draft form, related conference papers and articles, and so forth. Break up the period of the grant into stages and indicate what you hope to complete in each phase. (E.g., in the first two months, I will complete the archival research and draft chapter one- in the next two months, I will etc.). Avoid sounding preliminary or indecisive. A proposal that asks for money to read around on a variety of topics has very little chance of funding. Even though you may of course change a project as you do it, your proposal will be more effective if written in the declarative mode (e.g., "I will ..... " "I plan... " rather than "Maybe I will....," or "Perhaps...") Panelists who suspect what is often called "a fishing expedition" are not likely to support funding, however interesting the project. Instead, demonstrate that when the grant period begins, you will "hit the ground running" and use the time efficiently.

**Letters of Recommendation**

Your choice of referees is a major factor in putting together a successful application. Most letters tend to be inflated; consequently, committees often view them with a grain of salt, becoming adept at reading between the lines and assessing the weight to be given to the letters' praise. Graduate students and people whose degrees are recent frequently get letters from their dissertation director and committee members. Although letter writers often have a stake in seeing students and former students succeed, their letters can contain valuable assessments of an applicant's achievement and future promise. For people out of graduate school for longer periods of time, particularly if they have established some sort of research record, letters from former teachers and colleagues frequently carry less weight. A useful rule of thumb is that the more advanced an applicant, the more letters should come from people with recognized standing in one or more of the fields related to the proposed research.

In selecting a group of people to write letters, think in terms of the whole package. Not every letter has to accomplish the same thing; different letters make distinct contributions to your case. Thus, you might pick one person not so well known who will write a highly detailed letter based on thorough knowledge of your project and another person with national visibility who does not know your work as well or who tends to write very short letters. Or, one letter might attest to your knowledge of a particular field necessary for your project, while another letter might discuss in details the significance of your prior research. Particularly in the United States, lukewarm letters often hurt a proposal; a negative sentence or two in a letter often kills a proposal on the spot. Thus, it really pays to be as certain as you can be that your recommenders will be enthusiastic. Be aware that the conventions of letter writing (and letter reading) can vary significantly from country to country (in Britain, for example, letters tend to understate praise and to include some criticism or qualification, as a way of building credibility, whereas letters in the U.S. with qualifications tend to signal significant concerns). Do what you can reasonably do to acquaint your referees with the conventions most likely at work where the grant is awarded. For U.S. agencies, ask your referees to write their letters in English or arrange for translations.

To develop a list of possible letter writers, think about who knows your past work and has indicated in some fashion admiration for it. Such people might include journal editors or referees of your work, editors of collections, convenors of conference panels, and so forth. Use your full professional network. You should ask people if they would be willing to write a supportive letter
well in advance of the deadline. Provide them with an up-to-date vita and the proposal (a draft version if necessary). Many granting agencies ask letter writers to comment specifically on the cogency of the proposal itself and the feasibility of your schedule. Consequently, send your referees your most recent information and plans. Letters that are out of sync with the proposal and vita seen by the committee often lose influence.

**The Russian Roulette Factor**

Getting a grant sometimes feels like a crapshoot, the luck of the draw. Not getting a grant can feel like a terrible judgment on your worth as a scholar, so discouraging that you might well be reluctant to try again. Many people (if not all) who get a grant deserve it, but many who do not succeed deserve it just as much. You can never know what actually happened in the discussion of and voting on your proposal, let alone the institutional constraints that can come into play. In the end, the decision on your proposal may have had little to do with the merits of your case. While the system may well aim toward being a genuine merit system the realities are seldom so rosy. Consequently, it's important (but very difficult) to avoid internalizing a negative decision. It's important to try to learn from the experience and try again-on the same proposal or a new one. It's important as well if you succeed in getting a grant to celebrate your good fortune, get your work done, avoid getting a swelled head, and help others in the future succeed as you have in the roulette of grantsmanship.

Note: These guidelines were initially prepared for a panel on grant proposals at the Modern Language Association Convention, Chicago IL, December, 1999 I am grateful for the remarks of my co-panelists--Sander Gilman, Elizabeth McKinsey and Mark Rose- their collective wisdom and advice on proposal writing as well as the audience discussion, helped me revise my preliminary formulation.
Writing Arts and Humanities Proposals

http://grants.cla.umn.edu/services/arthumprop.html

This overview of the common sections required in grant proposals is meant as a reference. While not all of these sections will be required by any given grant program, these are the general sections typical to proposals in the Arts and Humanities. Many of these sections also appear in scientific and social science guidelines; however, proposals in those areas may require further information. In either case, proposal writers should carefully read the specific guidelines issued by the funding organization.

Abstract

A brief summary or the proposal. The abstract should include a statement of the subject of the proposal, a brief statement of the issue or problem to be addressed and why it is significant, a description of the approach/methods you will use to address the problem/issue, a statement of your hypothesis or argument and a statement of the potential ramifications of your work.

- Warning: Do not confuse the abstract with an introduction. Abstracts are frequently separated from the proposal.
- Hint: Start the abstract in this way: This proposal requests funding (amount) from [funder's name here] to support research into effects of music education on fifth graders.

Project Narrative

The bulk of the proposal in which you describe the project. The narrative may be split into sections. Common sections include the following:

Introduction

Many reviewers skip the abstract and go straight to the narrative. Introduce your subject in an interesting way. Do not assume that your reviewers have the same level of specific knowledge that you have. Guide the reader carefully, but respectfully, into the subject.

Problem/Issue Statement

To demonstrate that your project is important, show how it address a particular problem in your field. You might show how it addresses some gap in the scholarship, or advances some artistic trajectory in a new direction, or addresses a socio-cultural issue.

- Hint: The "problem" does not need to have broad significance, but you must explain how/why it is important in your particular field. The "problem" may well exist in a single community – e.g. working out a technical artistic problem or addressing how/why a particular idea developed over time. For instance, understanding Shakespeare's treatment of the animal might have some ramifications for contemporary animal rights issues, but more importantly it sheds light on how the playwright understood, advanced, and resisted, constructions of the hierarchy of relationships among living things prominent during the period.
- Remember, not everyone has to be working on a cure for cancer. Intellectual and artistic problems exist within specific contexts. Be sure to explain these contexts to your reader.
• **Hint:** If you've set up the problem effectively, that is in a way that shows it really is a "problem" in a given context, the significance of the project almost writes itself.

**Background**

This section, which may precede the problem statement, generally includes a brief survey of the most important previous treatments of the problem. If you are addressing a gap in the scholarship, mention works that have led up to awareness of the gap. Mention your previous work if it directly relates to the identification of the gap or your preparation to address it.

• **Hint:** Best not to take a negative approach to the literature survey, denouncing others for "missing" or ignoring your issue. Reviewers tend to find this tone off-putting and uncollegial.

• **Hint:** For arts projects, the "background" is often about your artistic trajectory. Explain how you have come to identify with this particular "problem." Do discuss other artists or scholars who have influenced your thinking with respect to the problem.

**Methods**

Though it is tempting for humanists to say "I'm going to go read the materials and think about how they address my topic," or for artists to say "I'm going to go into the studio with my materials and create something," such statements are not particularly helpful to reviewers. Humanists should explain what materials they will be using and how they will obtain them. They should explain their interpretive assumptions and questions, citing any specific theoretical approaches that inform their work. (See hint below.) Artists should explain their creative process with respect to previous works and demonstrate a trajectory for how you have developed projects. Artists should also explain any technical processes they will be using.

• **Hint:** Be as explicit as you can about how you will answer the question or address the problem.

• **Hint:** When explaining theoretical paradigms and methodologies, avoid technical language. Gear your explanations for an interested undergraduate. When you must use a specialized term, be sure to briefly gloss it. Remember, all fields privilege specialized connotations for words that are not familiar across the academy. Don't assume your language is transparent and that reviewers will "figure it out." Help your reader to understand.

• **Hint:** In the Social Sciences, the discussion of method is perhaps the most important section of the proposal. A poor methods section can deep-six a science proposal faster than anything. In the Arts and Humanities reviewers often have low expectations for the methods section. You can gain points quickly by demonstrating that you have thought critically about how you will be going about your interpretative work.

**Plan of Work**

The plan is just that, a description of what you will do, when you will do it, and, in some cases, where you will do it.
• Hint: Make sure your plan of work aligns with your budget.

Timetable
Closely related to the plan of work, though a more precise estimate of the time to be spent in each phase of the project.

Goals—Outcomes
Often appearing early in the proposal, this section explain what you hope to accomplish with the work. Goals or outcomes will include addressing the stated problem in a way that contributes to your field. They will also include completing an artwork, article, book, film, etc.

• Hint: Some organizations, including the NEH and NEA, and many foundations are highly outcome oriented. Be sure to read their guidelines for priority outcomes.
• Hint: Artists and humanities scholars may not know, specifically, what the outcome will be. Thus, your problem section and your methods section carry a lot of weight. Set up a trajectory of past work and effective methods that point to a successful outcome.

Significance
This section should reiterate the problem/gap in scholarship and explain how your study will further work in the field.

• Hint: Your work may have ramifications beyond your field – explain them.

Evaluation or Assessment
While a rarity in academic fellowship proposals, evaluation sections are becoming more popular in research proposals. Explain how your work will be reviewed – peer review for publication, scholarly review, or artistic review and public audiences. If you are proposing a public event, but sure to provide opportunities for feedback and mechanisms for learning from that feedback.

Sustainability
This section is also increasingly used in event proposals. Here you must explain how the project will be continued once it has begun. Explain how much future funding will be needed and how you plan to raise it. Project the on-going levels of interest in the project and which pieces will most likely continue past the funding period.

Budget
A list of the estimated expenses you expect to accrue over the duration of the project. Many budgets also contain a list of committed fenders, and, in some cases, a list of pending funding requests. The budget is frequently accompanied by a budget narrative, which is a prose description of how each expense was determined.

Appendices
Additional material intended to augment the proposal. Appendices are sometimes required and may include such things as lists of performances, exhibitions, or composition. Lists of publications. List of key personnel involved in the project. Information on the University or your department or other unit. Appendices are not always allowed.
Curriculum Vitae or Resume
A list of your education, employment, scholarly or artistic accomplishments, and professional associations.

Writing for the Funding Audience
A grant or fellowship proposal is a document meant to persuade

- To convince someone that your project is important
  - That it addresses an issue or problem (which exists within a specific context)
  - That the problem/issue is important within that context
- To convince someone that you are the right person to do the project
  - That you have the training and experience to do it
  - That you understand the situation/issue/contexts and have a unique perspective
  - That you have a means or method to effectively address the situation
- So . . . . at the same time you are pitching the project you are pitching yourself.

Know and respect your audience

- Know the Request for Proposals (RFP) guidelines
  - Follow them to the letter
- Know the funder's criteria for proposal evaluation
  - Use the funder's language – tell them how your project fits
- Check websites for information on the funder
- Email or phone the program officer associated with the funding program
- Talk with colleague who have experience with the funder

Consider your proposal from your audience's perspective

- Emphasize those elements of your project that relate directly to the funder's concerns.
- Pitch your language to funder's level of expertise. Be careful here. Don't assume everyone, even in your field, has read the same books that you have.
- Demonstrate that your project is feasible and will be complete and that it has real potential for significant impacts.
- Convey your interest and enthusiasm.
Introducing Education Research

http://www.edu.plymouth.ac.uk/resined/beginning/begresed.htm

Before addressing some more specific issues about undertaking research, it is worth addressing the question of what, exactly, constitutes research, and research in education more specifically. Though these may appear to be easy questions, in practice they are not entirely clear cut. Before reading on, look at the following list of activities and decide for yourself which of them you consider constitute ‘research’, and then use this decision to define for yourself what research is.

- an Ofsted inspection in a school (or similar professional inspection in health, prison or other public sector services);
- reading about the experience of others in order to try to make better sense of what you do in your professional life;
- the collection and analysis of data about students’ university achievement compared to their social class to inform policy at national and local level;
- a careful, reflective consideration of your own workplace (classroom, hospital ward, multi-disciplinary team etc.);
- thinking about how one’s professional day has gone whilst driving home, and considering how it could be made better tomorrow;
- planning a cycle of deliberate change to your professional work and a systematic way to analyse this with a view to making changes that improve practice;
- writing about your professional work, or that of others, in order to try to make greater sense of what you do.

My Concise Oxford Dictionary defines research as

research n. & v.i.
careful search or enquiry after or for;
endeavour to discover facts by scientific study of a subject, course of critical investigation

Whilst we might seek out other definitions and argue over them, I would rather take this as a starting point and consider some of the dimensions that research might involve and their implications.

Firstly then, the definition above points to the need for a ‘careful search’. Note that the word ‘search’ is built in to ‘research’, and this seems fundamental to me. Research therefore always involves searching out new information, ideas or perspectives. This needs to be done ‘carefully’, implying that the search needs to be deliberate, systematic and with a purpose. Note that this perhaps eliminates the item above about reflecting on the day during your drive home.

The sense of discovery alluded to in the definition is also important. All research, being a search of some sort, is a journey of discovery. In this sense it is an educative process itself for those
undertaking it; they should know more at the end of the process than at the start. Some approaches to research – such as action research – are deliberately and explicitly educative, the researcher making a deliberate attempt to change practice for the better through the research process. Koshy (2005, p.1) believes that, for teaching practitioners,

*ultimately the quality of educational experiences provided for children will depend on the ability of the teacher to stand back, question and reflect on his or her practice, and continually strive to make the necessary changes.*

Other forms of research, such as scientific, experimental research may take a more objective, detached stance, but are still educative in the sense that the researcher makes new discoveries – albeit seen as external to, and detached from, them.

So far all well and good then. However, it is in the idea that research involves the discovery of ‘facts by scientific study’ that things get more murky. This leads to a discussion of epistemology (the study of the nature of knowledge) and of ontology (the study of the nature of being) and I will turn to this in the next section, but before I do let me simply list some other issues which beg questions in the planning of effective research

- Who is doing it? – research can be ‘on’ people or ‘with’ people. In undertaking a research project you will need to think about your relationship with those you are researching.
- Is it political or apolitical? I don’t mean party politics here, but some research is essentially, even overtly, political in that its focus is the relationships between people and issues of power, class etc. This is what the label ‘Critical Research’ implies - that the work 'is intensely practical, to bring about a more just society in which individual and collective freedoms are practised, and to eradicate the exercise and effects of illegitimate power' (Cohen et al, 2007, p.27). Its very essence is to examine and illuminate the way in which social relationships are cast and maintained through social norms, rules and power. At other times, research can try to be more politically neutral, aiming to describe a situation without examining the social roots of the issue.
- Is it descriptive or action orientated? That is, does it aim simply to describe a situation better or to be part of acting to change the situation? A related question might be whether a description is actually research, or whether research requires some kind of theorisation about a situation.
- What scale is it on? You might be researching the activity of one nurse as s/he undertakes work with patients, or looking systemically at the whole NHS.

Finally then, in thinking about the nature of research, we have dealt briefly with the ‘search’, but what of the ‘re’? That research must be ‘critical’ (according to the definition above) points to the notion that the act of researching should not only involve you in ‘searching out’ but also in a process of reappraisal of the situation, and your/others’ place within it. Research involves a process of ‘re-describing’ the world, seeing it with fresh eyes, and hence of ‘re-positioning’ yourself and others within it.
If we therefore consider research emphasized in these two different ways, re-SEARCH implies asking questions focused on process, such as:

- What can I search for (and what not)?
- How can I search for it?
- How can I search in enough detail/rigorously?

On the other hand, RE-search implies questions about the self and one’s understanding of, and stance towards, the world, such as:

- How do I/we/they think about this?
- How could I/we/they think about it differently?
- What effect would this have on how things seem and on what I/we/they should do?

In carrying out your dissertation we would encourage you to think about both these aspects of the word research and, as you study these materials, to keep each of them in mind.

Paradigms and perspectives

In the sections above I mentioned that ‘facts’ and ‘scientific study’ cause difficulties for some researchers, not just on a procedural level but because they raise issues of epistemology and ontology. What we are raising here is the idea that researchers need to adopt particular paradigms within which to carry out research. [Note that in addition to the points I make below, there is also a very good introduction to these issues on the BERA website - see http://www.bera.ac.uk/resources/methodological-paradigms-educational-research]

Bassey (1988, p.8) defines a research paradigm as

*a network of coherent ideas about the nature of the world and of the functions of researchers which, adhered to by a group of researchers, conditions the patterns of their thinking and underpins their research actions.*

Similarly, Maykut and Morehouse (1994, p.4) suggest that

*a paradigm has come to mean a set of overarching and interconnected assumptions about the nature of reality. The word assumptions is key. One must make assumptions, for example, about the nature of reality, because anything that a researcher might do to test what reality is must be based on some understanding of that reality. A philosophical assumption cannot be proved but may be stipulated.*

This implies that any approach taken in research is based on a model where certain assumptions (often called postulates when they are stated) are made, and that the research asks the sorts of questions which arise from particular judgements about the nature of education and the nature of research. I'll follow Michael Crotty's (1998) model here which suggests that...
METHODS (what I actually do in the research e.g. interviews, observations, content analysis etc.)

... stem from ...

METHODOLOGY (the overarching research design e.g. survey research, action research, grounded theory etc.)

... which stems from ...

THEORETICAL PERSPECTIVES (the philosophical stance one is adopting which provides the grounding rationale for the methodology e.g. positivism, interpretivism etc.)

... which stem from ...

EPISTEMOLOGIES (the view one takes of the theory of knowledge and therefore of 'reality', most often either objectivism or constructivism).

For a really clear and helpful explanation of this, read the Introduction to Crotty's book 'The Foundations of Social Science' most of which you can get online here.

Another good reference to make sense of paradigms is the British Educational Research Association guidance here.

To begin to explore this idea let us consider an example. One might wish to explore whether or not standards have risen in schools (or in hospitals, prisons etc. – take your pick) and, if so, why. If we look at test scores over the period of say 5 years, we can establish factually whether they have gone up or down. This is ‘a fact’ in the sense that it is numerically demonstrable; five years ago the same measure – say, the number of 11 year-olds gaining level 4 in their Mathematics SAT, or the number of infections picked up hospital wards – was at a lower level than it is now. However, there are still problems here.

Firstly, using the example of school test scores, these might be methodological – are we sure that the way we are measuring this is reliable and are we measuring like with like (has the test changed for example and hence is it the ‘same’ measure)? Secondly, there are issues to do with the way we construct ideas such as ‘standards’, in this case in terms of test scores. Standards mean nothing on their own, since the word always begs the question ‘standards of what?’. This is therefore a question of values. In the case of standards, resolving it might be straightforward, but many other conceptual issues in education are far from so. Take, for example, ‘ability’, ‘working/middle class’, ‘gifted and talented’, ‘assessment’, ‘engagement’, ‘interaction’, ‘care’, ‘learning’ etc. Increasingly, these days such ideas are seen as constructions (e.g. Burr, 2003; Gergen, 1999) whose meaning is not fixed, but constantly (re)negotiated between people. From this point of view, when we then measure their frequency, or correlate one against the other, we must remember that even if the numbers tell an incontrovertible story, the meaning of that story...
is still open to interpretation. These are issues of epistemology since they refer to ways in which we construct, or acquire, meaning for, or knowledge about, things.

This now brings us to the phrase ‘scientific study’ in our definition above. The phrase holds resonances of scientific experimentation and the testing of hypotheses – use of the scientific method, with control of variables, control groups etc. Whilst such approaches serve a useful purpose in education (or, more widely, social) research there are a number of problems with them. Much of the rest of the RESINED site explores these issues and so I don’t attempt to deal with this in great detail here, however I briefly look now at the underpinning assumptions of the two major positions: positivistic and interpretive research.

It is worth noting that the terminology around research approaches is diverse and often confusing when one first comes across it. Terms are often used interchangeably in places, then as distinct ideas elsewhere. Here I refer to positivistic research to mean the classic scientific approach which

*has explanation as a central aim. But explanation is thought of in a particular, very restricted, manner; namely, if you can relate an event, observation or other phenomenon to a general law ... then you have explained it.* (Robson, 2002, p.20).

I contrast this approach with what I call ‘interpretive’ research in which the focus is not on demonstrating causal relationships through experimentation, but on offering explanations through careful examination and interpretation of events.

[Note that I draw my distinction here between these two different theoretical positions. However, Cohen et al (2007) point out that both positivistic and interpretive positions are built on neutrality regarding the wider ideological and political picture and that both should be contrasted with a third paradigm - critical theory, mentioned in the previous section - which deliberately adopts ideological and political positions in an attempt to be emancipatory. Whilst I stick here with the binary of positivism and interpretivism, you will find reference elsewhere on this site to critical approaches and you might look at Cohen et al (2007, pp.26-32) for a simple introduction to critical theory.]

One key assumption that differs between positivism and an interpretive positions is the notion of reality. From the positivist position, reality is seen as ‘out there’ to be uncovered and described; in the interpretive approach reality is seen as a social construction and is therefore constituted in the inter-subjective agreement between people as to the meaning of different phenomena. These represent two different approaches to the notion of 'reality', of what 'knowledge' is - epistemology - namely 'objectivism' and 'constructivism' respectively. Note that the latter doesn’t mean that there is no physical reality but refers to reality of meaning. Thus, an able and talented child is ‘really’ a child (they are physically present), but may not ‘really’ be able and talented since this is a social construction negotiated between those involved in its meaning.
To explore this in a little more depth, Maykut and Morehouse (1994, p.12) offer the following table which describes the postulates (assumptions) against six key questions in relation to each of these two theoretical perspectives.

<table>
<thead>
<tr>
<th>Questions</th>
<th>Postulates of the positivist perspective (dominant paradigm)</th>
<th>Postulates of the interpretive perspective (alternative paradigm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>• How does the world work?</td>
<td>Reality is one. By carefully dividing and studying its parts, the whole can be understood.</td>
<td>There are multiple realities. These realities are socio-psychological constructions forming an interconnected whole. These realities can only be understood as such.</td>
</tr>
<tr>
<td>• What is the relationship between the knower and the known?</td>
<td>The knower can stand outside of what is to be known. True objectivity is possible.</td>
<td>The knower and the known are interdependent.</td>
</tr>
<tr>
<td>• What role do values play in understanding the world?</td>
<td>Values can be suspended in order to understand.</td>
<td>Values mediate and shape what is understood.</td>
</tr>
<tr>
<td>• Are causal linkages possible?</td>
<td>One event comes before another event and can be said to cause that event.</td>
<td>Events shape each other. Multidirectional relationships can be discovered.</td>
</tr>
<tr>
<td>• What is the possibility of generalisation?</td>
<td>Explanations from one time and place can be generalized to other times and places.</td>
<td>Only tentative explanations for one time and place are possible.</td>
</tr>
<tr>
<td>• What does research contribute to knowledge?</td>
<td>Generally, the positivist seeks verification or proof of propositions.</td>
<td>Generally, the phenomenologist seeks to discover or uncover propositions.</td>
</tr>
</tbody>
</table>

I suspect that whilst it is easy to read all the words in this table it may be less clear what each section means in practice so let me illustrate it using an example of an interview designed to gauge a teacher’s understanding of, say, the school maths curriculum.

From the positivistic perspective I can ‘test’ the teacher’s understanding through a series of questions. The teacher ‘has’ an understanding (because positivism is based on an objectivist epistemology) and my job is to uncover this through my questions. As long as the questions are
well designed (and this may not be easy) a level of understanding will be identifiable – just as it is in an IQ test, say. As the researcher, I see myself as separate from the interviewee and can suspend my values so that it wouldn’t matter if it were me or you asking the questions because we can set up conditions so that we have no effect on the situation. I can also ask about separate parts of their understanding individually to build up a picture of the whole. My questions might be seen to ‘cause’ the teacher to answer and to provide a picture of ‘what they think’. A single interview would not be generalisable, but a test (perhaps using a questionnaire with Likert scale responses) carried out on the right sample of teachers would allow us to generalise the outcomes in terms of what teachers think about the curriculum area, and to satisfy us that certain forms of training lead to particular levels of understanding perhaps.

From the interpretive position things are different. Now the teacher isn’t seen to ‘hold’ understanding for me to ‘reveal’. From this position my questions play a part in what the teacher says, as does the whole social, cultural and historical context of the situation. This doesn’t just mean that s/he might say something different to someone else or if I ask a different question; it means that my interaction with the interviewee is fundamental to what gets said. We are interdependent in this respect. This interaction is not neutral on my part either because I can’t suspend my values - however much I try I cannot be objective (in the sense of neutral and independent of the respondee). Even the questions I choose to ask (and those I don’t choose therefore) and how I ask them reflect what I value and although at one level I can see that questions ‘cause’ answers it is not just the questions themselves which do this. My body language, the context and a host of other things affect what can and can’t be said. Not least here are the questions themselves. The teacher may not ever have thought about the issue I ask about and so I’m not revealing something already in his/her head; we are constructing an account as we go. Earlier questions affect later ones; having said earlier that I was interested in his/her understanding of symmetry, when I later ask what she remembers doing last term s/he recalls the work with mirrors … but not other things s/he might have done. And as s/he recounts this work s/he contradicts what was said earlier so that it no longer means the same to me as it did. Whilst I might seem to be ‘uncovering’ ideas, the ideas were not necessarily there before I asked about them and so not only is this one interview not generalisable to other teachers, it may not be generalisable even in the sense that the same teacher would say the same thing again … not because they are saying things which are ‘untrue’ but because ‘truth’ itself is being constructed as meaning in the context of the interview between us.

A note on 'Quantitative' and 'Qualitative' research

The words quantitative and qualitative in relation to research are also worthy of some thought here. In a recent RESINED submission an IMP student wrote that Quantitative researchers collect facts and study the relationship of one set of facts to another, while the Qualitative perspective is more concerned to understand individuals’ perceptions of the world. They seek insight rather than statistical perspective of the world.

Whilst it might be true that positivistic research is more likely to collect numerical, quantified data than interpretive researchers you should note that it is the philosophical idea that facts and relationships ‘exist’ and that they reveal truth about reality that defines ‘positivism’, not simply
the collection of numerical data itself. This can be confusing because the phrase ‘quantitative research’ can often be used to refer to the scientific method that is associated with positivism, but where this is the case it is being used as a (rather confusing) shorthand. Even the most interpretive of researchers might still collect quantitative data, such as how often a teacher asks questions during a lesson or the number of boys’ involved in after-school clubs. The point though is not the kind of data itself, but what they then do with it – using it to make ‘interpretations’ about question-asking and boys’ participation in clubs, not looking for ‘truths’ in causal relationships between variables. Note then, that it is the theoretical position that distinguishes the approaches, not the use of numbers per se and, in my view, the terms positivistic (or scientific) research and interpretive research are more useful. It’s also worth noting that one critique of positivism is that the claim of objectivity is always a false one because there is always an element of interpretation in any experimental activity – see the components on Research in the Postmodern and Narrative for more on this.

Mixing methods

It is likely that most people undertaking the IMP dissertation will be involved in some form of interpretive research rather than a more positivistic, scientific study looking for causal relationships in data. However, it is quite possible that you might undertake some numerical, quantitative work and do some statistical analysis. This is sometimes a good way of finding general patterns which raise questions to investigate further by gathering qualitative data from interviews etc. – or, vice versa, having used an interpretive approach to identify key issues for participants it is sometimes then appropriate to explore one or more of these in a more statistical manner. What is important though is that in mixing methods like this you don’t mix up the epistemological stances and the theoretical positions involved, and that you bear in mind the implications of the assumptions you are starting from, especially the nature of reality. If you find a statistical correlation between teachers who have masters degrees and pupil attainment then the nature of the causation might still need to be interpreted through other means. It could be that getting a masters degree helps to raise attainment; but it could equally be that teachers who get high attainment from pupils tend to be those who enjoy and prompt intellectual challenge and hence become interested in masters work themselves! Moreover, each approach implies a different understanding of terms such as ‘attainment’, and so the different theoretical positions may actually be talking about different things here. The key point to hold on to is that each theoretical position (positivism and interpretivism) is underpinned by a different and incommensurable theoretical view about the nature of 'reality' (objectivism and constructionism respectively) and you simply can't bring these together.

ALL THIS PHILOSOPHICAL THINKING IS IMPORTANT IF YOU ARE NOT TO GET IN A TANGLE WITH YOUR RESEARCH. HAVING WADED THROUGH ALL THE ABOVE I STRONGLY ADVISE YOU TO READ THE INTRODUCTION TO MICHAEL CROTTY’S BOOK 'FOUNDATIONS OF SOCIAL RESEARCH'. YOU CAN FIND (ALMOST ALL OF) THIS CHAPTER ONLINE HERE.
Planning your research project

Having considered approaches to research I now turn to the more practical business of getting started on a project. The idea is to offer you some steps to take in order to set yourself up in the right direction and then to know how to continue studying for the next two components of RESINED. There are many ways in which you might do this, and most of the general textbooks listed in the references below will offer you lists of things to think about. You might well want to consult these, but I am going to suggest the following steps as practical – and I hope useful – approaches to take:

- Generating ideas for your research, identifying the theoretical perspective you will be using and developing a research question(s)
- Identifying assumptions and implications in this question(s) and using these to refine it
- Beginning to plan the kinds of methodology and then the methods that you might use
- Considering what some of the ethical implications might be

Note that the (compulsory) task for this component requires you to work through these steps so that you are in a good position to think about the methods you will then use and how you will do so, in more detail.

1. Generating ideas and questions for your research

It is likely that you already have a number of ideas for your research project, however many of the textbooks on research have good ideas for generating research foci. To pick just a few as examples, Maykut and Morehouse (1994, chapter 5) examine ‘Generating ideas’; Silverman (2000, chapter 5) discusses ‘Selecting a topic’; and Mason (2002, chapter 1) begins by ‘Finding a focus’.

Whilst all these references will help you choose a topic (if you don’t already have one), it is really important that before you begin any research itself you turn these ideas into clearly focused questions that will guide your work. The focus of the project should then be to answer these so that the questions serve not only to get you started but as ways to evaluate progress as you go along.

Having said this, defining clear questions does not mean that they need to be tightly focused conceptually at the start. Much research, particularly grounded, exploratory research may begin with very open questions. An example here might be something like: ‘What seem to be important issues for teachers in managing behaviour for effective science teaching?’ Here, the question focuses the researcher on what they will be exploring, but says nothing yet about what the ‘issues’ might be. In contrast, the question ‘How does the use of mixed ability grouping improve outcomes for science learning?’ is also focused but has already begun to make the assumptions that mixed ability grouping will be significant in some way and that there are outcomes that we can measure to gauge this in some way (both of which are actually probably reasonable assumptions to make).

One thing to emphasise at this point is that, regardless of your initial ideas, you should begin a
literature search at this stage, trying to explore what is already known about the issue you are examining. There is a very important idea here that is missed by many students, namely that your research needs to be of significance and to achieve this you need to identify a gap of some sort in what is already known in the field. Put another way, your research should focus on something that needs to be examined and about which there are not ready answers out there in the literature (though of course, from an interpretive perspective, all research is contingent and dependent on context).

If you have undertaken the PGDip with the University you should be familiar with the electronic searching facilities through the library, but if not contact them for support in how to do this and begin looking for material about your topic. We cannot emphasise enough that the MA stage is all about the quantity and quality of the reading you do and, though it will continue throughout your study, you do need to get reading at this stage to contextualise your study and inform your research questions.

Finally, although, as you will have noticed, I’m strongly advocating that you need clear and well defined research questions before you begin any empirical work, I would add two provisos. Firstly, it is very likely that your research questions will change, or at least develop, as you go along. This is particularly true of more exploratory research where the initial questions (such as the first one above) are there to identify issues of significance in the first instance and often then lead on to further, less open, sub-questions as the research progresses. An example here might be where an initial set of interviews or questionnaires has identified particular patterns of interest or particular problems experienced by the respondents and these lead to new questions. This is all a natural part of the research process; not a failing in terms of the original questions.

The second proviso is a pragmatic one. Although the research questions should lead the action of undertaking the research, none of us work in a limitless situation and we are always bounded by pragmatic issues of time and resources. Often there are questions that we would like to ask but which are impossible in terms of participants, time, cost etc. Whilst methods should serve research questions, not vice versa, it is inevitable that in practice there will be a circular relationship here with questions leading to implications for methods, leading back to refinement of questions in order to be practical and manageable – see below.

To think about:

Before going on, try to write down a Research Question for the topic you are thinking about … then go on to the next section and make use of it.

2. Refining your focus

Although it is important to generate research questions, many students find it surprisingly difficult to do so, particularly to construct them actually as questions. The most important thing is to get some sort of question down on paper as a starting point and not to worry about its veracity at first. Once you have something to work on you can then begin the process of refining it into the right question for the research you want to do. Clough & Nutbrown (2002, p33-34) have a novel approach to this business:
In our own work we have developed two simple tools that can be employed in the generation of research questions: the 'Russian doll' principle and the 'Goldilocks test'. Applying the Russian doll principle means breaking down the research question from the original statement to something which strips away the complication of layers and obscurities until the very essence - the heart - of the question can be expressed. This may well mean phrasing and rephrasing the question so that each time its focus becomes sharpened and more defined - just as a Russian doll is taken apart to reveal a tiny doll at the centre.

The generated questions can then be subjected to the 'Goldilocks test' - a metaphor for thinking through the suitability of the research questions for a particular researcher in a particular setting at a particular time. So, we can ask: is this question 'too big', such that it cannot be tackled in this particular study at this time - perhaps it is a study which needs significant research funding or assistance which is not usually available to students doing research for an academic award? We can ask 'Is this too small?' - perhaps there is not enough substance to the question to warrant investigation. We can ask if the question is 'too hot' - perhaps an issue which is so sensitive that the timing is not right for investigation - or such that researching it at this point would be not only difficult but damaging in the particular social context. These questions will enable us finally to identify those questions which might be 'just right' for investigation at this time, by this researcher in this setting.

Clough & Brown give a well-worked example of how to apply these techniques by writing the suggested research questions in order (see pages 35-7).

Once you have a clear question, a second step is to identify the assumptions and assertions that the question is making since these often then serve as the points of interest for the project itself, getting under the skin of the obvious. Becoming aware of assumptions/assertions then allows you to refine your question into one that tackles the issues that are likely to be of most significance to you.

To illustrate this process click here to access a PowerPoint presentation which will show you how to work through it. The example focuses on someone working in HE who became aware of being dissatisfied with the engagement of some students in his classes.

3. Choosing appropriate methods for the research

Clearly, having decided on the research questions that you want to pursue you will need to plan how to address these using appropriate methods. I will not say too much about this here since the rest of the RESINED materials and the tasks associated with these are there to help you with
these decisions. However, it is worth mentioning a couple of points to bear in mind at this early stage.

First and foremost you might consider the sense in which methods are appropriate or inappropriate. There is a multiple meaning here. The methodology you choose must be appropriate in the sense that they are likely to allow you to answer the questions you have posed. This may seem obvious, but it is amazing how many people come to the research process saying ‘I want to do some action research …’ without any thought to what the research questions are or whether AR will allow them to be answered. Methodology, and the associated methods, should serve to answer questions therefore, not vice versa. However, as I mentioned above, there is always some compromise here because we always work in context-specific situations and so in practice questions and methods are likely to iterate back and forth somewhat before they are settled on. This, then, is the second sense in which methodology/methods are appropriate or not; i.e. they must be appropriate to the context in which you are working, both in practical terms and ethically/morally too. Whilst it may be fascinating to discover whether your colleagues are implementing your policy initiative by covertly videoing them in practice, this would neither be ethically appropriate nor appropriate in terms of generating trustworthy data when you also interviewed them later on!

In practice then, the following checklist might be of use in developing your research. Note though that, as yet, you won’t be able to answer all these questions and further study of the other components on the site will be needed so that you can eventually answer them in order to write your proposal.

- What am I trying to find out (i.e. how do my research questions pan out in practice)?
- What do I already know about this, and what can I find out through a literature search?
- What kind of data would allow me to explore this effectively?
- What theoretical perspective does this imply me adopting?
- In particular, what is my stance within the research and how does this affect things?
- How could I collect this data within this stance?
- How best can I analyse it?
- What will be the implications of this in practice?
  - time frame?
  - people involved?
  - access to situations and people?

Ethical implications

The University of Plymouth takes very seriously the whole business of the ethics of research involving human participants. All staff and students of the University undertaking such research have to conform to a set of ‘ethical principles’, make these clear to those they are working with and ensure that they remain within them throughout the research. The IMP (Education) has obtained 'programmatic clearance' to apply the procedures set out below to ensure that the University guidelines are followed:
1) Where appropriate, students will be asked by their supervising tutor to prepare an ‘ethics protocol’ as part of their preparation for assignments (those involving field work/data collection). That protocol will set out how the student intends to meet the requirements set out in the University guidelines.

2) Guidance on how to construct such a statement will be provided by the supervising tutor.

3) The supervising tutor will be responsible for obtaining a copy of the protocol, for ensuring that it is satisfactory and for monitoring its implementation.

4) Assessment of the final project will take into account the manner in which the protocol was put into effect.

For instructions on what these principles are, guidance on creating an ethics protocol and lots of examples go to http://hes.plymouth.ac.uk/ethics.

[Note: if you are not a member of the University of Plymouth you can access read-only versions these pages at this link, but will not be able to contribute to discussion.]

(See also the British Educational Research Association Ethical Guidelines.)

Other Examples
In addition to the website above, have a look at the ethics protocols for the project 'Innovations in Teaching and Learning in Higher Education'. These were sent to all those interviewed in advance and were discussed with institutional 'gatekeepers' in order to help obtain access. An ethics protocol ought to be used for such purposes, rather than be seen as a 'dead' document written merely in response to bureaucratic requirements. In essence it is a contract that you enter into with your informants that contains protections for you both!

You can find four more examples of ethics protocols for a range of research projects produced by Sue Waite, a Research Fellow in the Faculty of Education of the University of Plymouth, by clicking here.

In essence, then, students need to consult the materials suggested and the University guidelines and produce a statement which sets out how they intend to ensure compliance with each of the principles therein (viz, 'informed consent', 'openness and honesty', 'right to withdraw', 'protection from harm', 'debriefing' and 'confidentiality'). Your 'ethics protocol' should set out how your study will meet these requirements WHERE RELEVANT. Some of these principles will be of greater importance than others for you and this should be reflected in your statement.

I STRONGLY RECOMMEND that the 'ethics protocol' for which you seek approval should take the form of the document you intend to issue to potential participants in order to obtain informed consent, which would cover issues such as confidentiality, right to withdraw, feedback, etc as appropriate. The examples referred to below are statements of this kind. Note though that it is often necessary to have multiple versions of this document written appropriately for different participants; especially where you are working with children and/or adults from different institutional roles.

NB For a QUESTIONNAIRE survey it is often preferable to incorporate the ethical provisions in the introduction to the questionnaire form itself, i.e. telling informants what the project is about (informed consent), giving them the choice not to respond to individual items or the form as a whole (right to withdraw), setting out how feedback may be obtained (debriefing), describing the provisions for confidentiality (particularly if the form is not anonymous), etc. This section of the questionnaire is in effect the 'ethics protocol' and can be submitted for approval.

Formal proposals

Guidance on completing the Dissertation Proposal for the University of Plymouth MA (Education), and the cover sheet for submission, may be obtained by clicking here. The Research in Education module is finally assessed by means of the Dissertation Proposal. You should discuss the completion of this form with your Dissertation Supervisor and then submit it to the Faculty Reception following the guidelines and procedure used for all IMP assignments.

University College Plymouth, St Mark & St John MEd (Education and Professional Development) students should contact their UCT or CPD office for a copy of the form they should use.
It's also a good idea to see what's expected of you when you eventually write up your study. See the component on Writing Up Research for details.

**Task A - Beginning Education Research**

*This task encourages you to develop a clear starting point for your research project so that you can then tackle the other components knowing which will be most appropriate for you. Any work you do here will also be useful in the final dissertation proposal that you must complete to be assessed for this module.*

- **Write a short description of the area of interest for your research describing how and why you have come to it.**
- **Generate one or more ‘research questions’ commenting briefly on the process of refining these that you go through.**
- **Briefly describe the methodological stance you will be taking to the work and explain why you have chosen it and what some of the implications are.**
- **Briefly outline what methods you think you might use in responding to your questions and why you think these will work.**
- **Finally, without completing a protocol in full, outline some of the ethical implications that your research is likely to face and briefly how you might deal with these.**

*Please note that this task is not asking you to pin these issues down in full but to begin to consider them. It is very likely that, as you progress, you will change your plans. However, the aim here is to ensure that you put yourself in a position where you can choose further components of study from an informed position (and remember that whilst you have to do a further task B and C from one or more of these components you are free to study widely from all of them).*
Proposal Writing in the sciences: NSF


A GUIDE FOR PROPOSAL WRITING

NATIONAL SCIENCE FOUNDATION
DIRECTORATE FOR EDUCATION AND HUMAN RESOURCES
Division of Undergraduate Education

Notices from the National Science Foundation

The Foundation provides awards for research and education in the sciences and engineering. The awardee is wholly responsible for the conduct of such research and preparation of the results for publication. The Foundation, therefore, does not assume responsibility for the research findings or their interpretation.

The Foundation welcomes proposals from all qualified scientists and engineers and strongly encourages women, minorities, and persons with disabilities to compete fully in any of the research and education related programs described here. In accordance with federal statutes, regulations, and NSF policies, no person on grounds of race, color, age, sex, national origin, or disability shall be excluded from participation in, be denied the benefits of, or be subject to discrimination under any program or activity receiving financial assistance from the National Science Foundation.

Facilitation Awards for Scientists and Engineers with Disabilities (FASED) provide funding for special assistance or equipment to enable persons with disabilities (investigators and other staff, including student research assistants) to work on NSF projects. See the program announcement or contact the program coordinator at (703) 306-1636.
The National Science Foundation has TDD (Telephonic Device for the Deaf) capability, which enables individuals with hearing impairment to communicate with the Foundation about NSF programs, employment, or general information. To access NSF TDD dial (703) 306-0090; for FIRS, 1-800-877-8339.

Catalog of Federal Domestic Assistance: CFDA 47.076

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Introduction

The staff of the Division of Undergraduate Education (DUE) at the National Science Foundation (NSF) often provide informal guidance to proposers. Staff members give workshops on proposal writing, answer questions by phone and e-mail, and talk to potential awardees at professional meetings and at NSF. The following is the essence of the advice often given to inquirers. These suggestions for improving proposals were collected from a variety of sources, including NSF Program Directors, panel reviewers, and successful grantees. Ultimately, proposals are peer reviewed in panels consisting of colleagues in science, mathematics, engineering, and technology disciplines or related fields, and the success in obtaining funding depends in great measure on reviewers’ judgements and their written reviews.

"What makes a good proposal?" A good proposal stems from a good concept. The best proposals are those to which the reviewers respond, "Of course, I wish I had thought of that!"

The most important thing is a project that will benefit undergraduate education and directly improve student opportunities to learn. That said, however, the proposal must be written in sufficient detail to allow reviewers to understand:

- what the project hopes to accomplish;
- if the project personnel have the necessary expertise to accomplish the goals and objectives;
- the potential of the project to improve undergraduate education;
- the national impact and cost effectiveness of the project; and
- evaluation and dissemination plans.

Carefully read the Program Announcement. The Program Announcement gives the most current information available. It provides for all DUE programs: (a) a rationale, (b) an overview, (c) detailed program information, (d) facts about preparation and submission of both preliminary and formal proposals, (e) review criteria, (f) special forms that should be submitted with proposals, and (g) advice to proposal writers. This is the best possible guide for preparing proposals to DUE programs and should be read carefully and followed precisely. There are no hidden agendas. Proposals are funded in a competitive system based on merit and promise.

While this Guide may provide valuable information for proposal writing in general, it was specifically prepared for programs in the Division of Undergraduate Education (DUE). Because programs, priorities, technologies, funding levels, and many other details change, advice in this Guide will also change with time. Following the advice given here certainly does not guarantee funding although we hope it will help applicants write better and more competitive proposals. Another factor that must be considered is that NSF receives many more proposals that are worthy of funding than there are funds to support. National priorities and the desire for a balanced portfolio of projects influence what is ultimately funded.
We hope that you find this Guide informative. NSF, together with creative partners, make an important difference in undergraduate science, mathematics, engineering, and technology education.

Program Information

Following is a list of grant publications with a short description. For those that are published annually, no NSF publication numbers are shown since they will change. The documents are available on the NSF Web page which can be accessed at http://www.nsf.gov.

- The Guide to Programs provides background information about all of the Foundation’s activities in education and research as well as the instructions to obtain individual program announcements. This can be ordered by contacting the NSF Publication Clearinghouse, P.O. Box 218, Jessup, MD 20794-0218. Copies may be requested via voice mail: phone at (301) 947-2722, fax (301) 953-3848 or via e-mail (pubs@nsf.gov).

- Proposers also can consult the publication Grant Proposal Guide and DUE’s Program Announcement and Guidelines (see below) for additional guidance. They are also available from the Forms and Publication Unit.

- The DUE publication Undergraduate Education Science, Mathematics, Engineering and Technology: Program Announcement and Guidelines (hereafter, Program Announcement) describes each program and indicates the exact format for the preparation of the grant proposal and the criteria for evaluation. DUE also regularly publishes information about recently awarded grants.

  Information specific to undergraduate programs can be accessed by e-mail (undergrad@nsf.gov) or by phone at 703-306-1666. You can also get information fast via the World Wide Web (www.nsf.gov).

- NSF has also published the User-Friendly Handbook for Project Evaluation (NSF 93-152), FOOTPRINTS: Strategies for Non-Traditional Program Evaluation (NSF 95-41), and User-Friendly Handbook for Mixed Method Evaluations (NSF 97-153) which proposers may wish to obtain.

Review Process

NSF awards grants on a competitive basis. In selecting proposals to be supported, NSF is assisted by reviewers who are scientists, engineers, mathematicians, technologists, and educators in related disciplines. These reviewers are drawn primarily from two- and four-year colleges and universities, secondary schools, industry, foundations, and professional societies and associations, as appropriate for the program being reviewed. The reviewers are chosen based on
their demonstrated ability to assess the merits of a proposal based on the criteria for evaluation shown in the next section. Faculty writing proposals are advised to contact NSF program officers to learn the general demographics of the reviewers for the program for which they are submitting proposals.

The majority of proposals submitted to DUE are considered by panels of peer reviewers. The purpose of the review is to provide NSF with a written critique and an individual rating from each reviewer as well as a summary analysis by the panel. Each panelist writes his or her own review for all proposals assigned to the panel. Reviewers are asked to provide a detailed evaluation of both the merits and the shortcomings of each proposal and to provide a rating. The Proposal Evaluation Form which is used for comments is attached. The panel then convenes as a group to discuss the proposals. This gives each reviewer the benefit of an informed discussion upon which to base a decision. Following these discussions, panelists complete their individual reviews and one panel member writes a summary of the discussion for each proposal. Reviews are used by NSF Program Directors to inform funding decisions; and anonymous copies are sent to all proposers.

Reviewers are charged with safeguarding the confidentiality of proposals and are asked not to copy, quote, or otherwise use material from any proposal. Reviews are not disclosed to persons outside NSF except to the principal investigator. At the end of the review process, the principal investigator is sent the written verbatim reviews with the reviewers’ names and affiliations omitted. Reviews are forwarded whether the proposal is funded or not. All reviews are confidential. NSF releases abstracts and other information about funded proposals only.

Criteria for Evaluation

Proposals to NSF are evaluated for merit on the basis of two general criteria. The criteria are described in Chapter III, Section A, of the Grant Proposal Guide and are printed on the NSF Proposal Evaluation Form (NSF Form 1). These criteria, as they relate to education, are defined below. In addition to the suggestions listed in the "Advice for Proposal Writers" section, special attention should be paid to the criteria and questions specified below. These criteria are given to the review panels as guidance for evaluating program proposals. Some programs include additional criteria for their programs. See the DUE Program Announcement for this information about DUE programs.

I. Intellectual Merit

What is the intellectual merit of the proposed activity? This criterion is used to assess the importance of the proposed activity to advancing knowledge and understanding within the context of undergraduate science, mathematics, engineering, and technology (SMET) education. This criterion also relates to the quality, currency, and significance of the scientific/technical content and related instructional activity, the capability of the Principal Investigator(s), the extent to which the proposed activity applies innovative approaches or explores creative concepts, the
technical soundness and organization of the proposed approach, and the adequacy of the institutional resources available. Typical questions raised in the review process include:

- Does the project address a major challenge facing SMET undergraduate education?
- Are the goals and objectives, and the plans and procedures for achieving them, innovative, well-developed, worthwhile, and realistic?
- Does the project have potential for improving student learning of important principles of science, mathematics, engineering, or technology?
- Is the project informed by research in teaching and learning, current pedagogical issues, what others have done, and relevant literature?
- Does the project provide for effective assessment of student learning, which reflects the proposed educational objectives and practices?
- Does the project design consider the background, preparation, and experience of the target audience?
- Does the project have the potential to provide fundamental improvements in teaching and learning through effective uses of technology?
- Is the project led by and supported by the involvement of capable faculty (and where appropriate, practicing scientists, mathematicians, engineers, technicians, teachers, and student assistants), who have recent and relevant experience in education, in research, or in the workplace?
- Is the project supported by adequate facilities and resources, and by an institutional and departmental commitment?

II. Broader Impacts

What are the broader impacts of the proposed activity? This criterion relates to the extent to which the activity advances discovery and understanding while promoting teaching and learning, how well it broadens participation of underrepresented groups (e.g., based on gender, ethnicity, disability, geography, etc.), the extent to which it enhances the infrastructure for research and education (e.g., facilities, instrumentation, networks, partnerships), the degree to which it plans broad dissemination to enhance scientific and technological understanding, and the benefits of the activity to society. Typical questions raised in the review process include:

- To what extent will the results of the project contribute to the knowledge base of activities that enhance student learning?
• Are the proposed course, curriculum, faculty or teacher professional development, experiential learning, or laboratory activities integrated into the institution’s academic program?

• Are plans for evaluation of the project appropriate and adequate for the project’s size and scope?

• Are the results of the project likely to be useful at similar institutions?

• What is the potential for the project to produce widely used products which can be disseminated through commercial or other channels? Are plans for producing, marketing and distributing these products and communication of results appropriate and adequate?

• For ATE projects, does the project address the current and future needs of industry for technicians? Does the project enhance the current status of technician education?

• Will the project result in solid content and pedagogical preparation of faculty and teachers of science, mathematics, engineering, and technology?

• Does the project effectively address one or more of the following objectives:
  o ensure the highest quality education for those students planning to pursue SMET careers?
  o increase the participation of women, underrepresented minorities, and persons with disabilities?
  o provide a foundation for scientific, technological, and workplace literacy?
  o develop multi- and interdisciplinary courses and curricula, that are aligned with SMET standards, as appropriate?

Additional Questions Relevant to NSF Collaboratives for Excellence in Teacher Preparation (CETP):

I. Intellectual Merit

• Is the rationale for selecting particular activities or components for development or adaptation clearly articulated?

• As appropriate, is there evidence of collaboration among faculty and departments in the sciences, mathematics, technology, education, and/or engineering?

• For multi-institutional projects, is there significant evidence of participation and commitment by the member institutions including school personnel (teachers, supervisors, administrators) in proposal preparation and in the planning and implementation of the project?

• Is there demonstrated leadership from the science, mathematics, and/or engineering faculty in close collaboration with the science and mathematics education faculty? Does
the institutional structure and culture promote the requisite collaboration between the institutions, departments and faculties involved?

- Is there integration of mathematics and science, use of advanced technologies, applications to engineering and technology, and/or new methods of student assessment appropriate to the teaching methodologies?

- Does the project contain exemplary mentoring and field experiences (e.g., student teaching, laboratory research opportunities, support for novice teachers)?

- Are there strategies for recruiting, supporting, and graduating high-quality prospective mathematics and science teachers, particularly from underrepresented groups including persons with disabilities?

- Are there creative plans to maintain continuing relationships with graduates of the proposed Collaborative program to encourage their retention in science and mathematics teaching?

II. Broader Impacts

- Is the evidence for institutional support clear and compelling?

- Will the project contribute to the preparation of preK-12 teachers who are: knowledgeable in, and comfortable with science, mathematics, and technology; confident in their abilities in these disciplines; and able to effectively use a variety of pedagogical approaches and technology to improve student learning?

- Does the proposal indicate how the project relates to a teacher preparation program? Is there significant redesign of activities, including discipline courses, which serve prospective teachers as part of the audience, and are these activities integrated into the curriculum and institutional requirements?

- Will the project result in increased involvement of mathematics, science and, as appropriate, engineering and technology departments and their faculty in the preparation of prospective teachers?

- Is there evidence that programs initiated by the collaborative entity will become established within the participating science, mathematics, education and/or engineering departments and the sponsoring institution or institutions? Are there effective mechanisms included to promote the incorporation of successful models or results into statewide practice and policy?

- Is there significant cost sharing by the institution or each of the institutions within the Collaborative?
Is there cognizance of and cooperation with other programs in the region (Local Systemic Change [LSC], State Systemic Initiative [SSI], Urban Systemic Initiative [USI], Rural Systemic Initiative [RSI], Alliances for Minority Participation [AMP], and large systemic efforts in preK-12 curriculum reform) designed to improve the teaching of math and science?

Are adequate systems provided to facilitate the collection of baseline and subsequent data to measure program impact?

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**ADVICE TO PROPOSAL WRITERS**

The following steps are provided to help the proposal writer understand the steps that go into preparing a proposal and to share some advice that others have found useful.

**Step 1 - Before You Write**

**Getting Started**

NSF grants provide funds based on merit, not on need.

A good proposal begins with a clear idea of the goals and objectives of the project—for example, creating a course or curriculum, improving a laboratory by teaching new concepts directly, teaching new material to undergraduate faculty, or preparing future technicians or K-12 teachers in a more effective way.

In addition, a good project begins with a sense of why it will be a significant improvement over current practice.

Envision what improvements your project will make, and then ask yourself what activities and course(s) must be developed, what instruments will be needed, or what coalitions must be formed to make the desired improvements. Focusing first on the goals and objectives helps ensure that the activities are designed to reach those goals.

After the goals and associated activities are well defined, consider what resources (e.g., people, time, equipment, technical support) will be necessary as part of the request to NSF. A better proposal is likely to result if the goals and activities are clear before resources are considered.
Your project should be innovative within its context. It should not be designed merely to bring your institution up to the level of other similar institutions, nor should it be used to fill program deficiencies that have been caused by changing student registration patterns.

Projects should explore teaching and learning methods that use equipment, scientific knowledge, or teaching techniques in effective ways; perhaps by adapting techniques to a new context or by teaching in a novel or attractive way.

In addition, more extensive projects, such as Advanced Technological Education (ATE) Centers and Collaboratives for Excellence in Teacher Preparation (CETP), must show clearly that they can initiate important changes in the teaching of undergraduate science, mathematics, engineering, or technology for a significant segment of the community.

Mention what work has been done in preparation for the project, and describe specific attempts that have been made to try the proposed improvement on a small scale. Evidence of preliminary work demonstrates planning and commitment to the project and often indicates the project’s potential for success.

When the proposal requests significant funds for equipment, it is helpful to consider alternatives and explain why the instruments chosen are particularly suitable for the project and why others, especially less expensive ones, are less suitable.

Get advice from people who have been successful in the proposal process. (See the Getting Advice Section listed in Step 3 and consider these activities early in the process.)

Gathering Background Information

When writing a proposal, look for previously awarded NSF projects or work supported in other ways that are similar. The relationship of the proposed project to work of others should be described. In addition, the proposal must give appropriate attention to the existing relevant knowledge base, including awareness of current literature. Results of previous projects may have been presented at professional meetings or published in journals, and NSF regularly publishes abstracts of its recently awarded grants. Information can also be obtained from NSF’s World Wide Web site, <http://www.nsf.gov/>.

When you find a funded project that is similar, call the principal investigator, discuss his/her project, and ask him/her to send or e-mail you a copy of the grant proposal. You will then be better able to see how that project is outlined and developed and how it meets certain needs on that particular campus and in the broader community. Clearly you will wish to use this only as guidance and should
not copy the project. There will be differences in what is needed in each new project.

Feel free to call a DUE Program Director (current number 703-306-1666) when unsure about any details or procedure.

**Looking at the Program Announcement**

Identify the program or programs that best fit what you hope to accomplish.

Read the *Program Announcement* guidelines carefully and consider what is requested. Each program’s section of that announcement specifies requirements for that program and information that is used to review the proposal.

The *Program Announcement* clearly spells out requirements, including format requirements. All parts of the proposal should conform to the requirements, i.e., target dates, font size, page limits, program objectives, budget limits, matching funds, etc. The proposal should be concise and not exceed any text restrictions.

The review criteria are particularly important to consider in writing the proposal. Keep in mind that different programs may have special emphases for review. These will be mentioned in the *Program Announcement*. You should consider, if appropriate, how your project might address these areas.

In some cases, programs have specific requirements that differ from the general requirements. When there are differences, the guidelines closest to the program should be followed (i.e., follow the program guidelines provided in the DUE *Program Announcement*). For example, the DUE *Program Announcement* calls for double line spacing while the NSF *Grant Proposal Guide* leaves line spacing to the discretion of the proposer. In that case, you should use double line spacing.

**Thinking About the Target Audience**

The target audience of the grant should be clearly explained in terms of demographic characteristics, size, and special characteristics or problems/challenges faced by the group. The project design should be developed in a manner which will effectively assist the target group in addressing those special problems or challenges. The disparity between the educational sophistication of the project and the educational naiveté of the audience (e.g., a software package which is primarily being used for research that is proposed to be used in a developmental mathematics class) is usually noted by the reviewers and can be one reason for declination of funding.

One of the goals of the Foundation is to increase the participation in science, mathematics, engineering, and technology of women, underrepresented
minorities, and persons with disabilities. If your project is going to provide learning opportunities for women, underrepresented minorities, and persons with disabilities, explain exactly how this is going to be done. The proposal should explicitly identify components that will result in increased participation by and/or success of these groups. There must be a focused plan, explaining in detail how your project will accomplish this.

**Building Coalitions**

When several departments, several institutions, or constituencies outside the academic community are involved in the project, it is important to have these groups involved in the planning and to obtain letters of commitment to the project.

When faculty or teacher enhancement activities or industry partners are included, involve these potential participants in the planning of project activities.

Where appropriate in terms of the project’s size and its potential for national impact, consider designing the project with an advisory board of outside experts to provide additional levels of expertise and experience and to help widely disseminate the project results.

Even in smaller projects, an advisory board of outside experts from the college or local community can provide additional levels of expertise and experience.

Build consensus on your idea within your own department and institution. If the courses are taught by different faculty members, reviewers may be more receptive if the proposal is submitted jointly by several members of the department or institution rather than by a single faculty member. It is often valuable to include a letter of support from the department chair or other individuals to establish institutional support.

Include information about where the project fits in the context of the institution’s academic program. As appropriate, show how your project is part of an overall plan to improve education by your institution and other institutions.

Discuss involving other institutions in your proposal either as partners in the endeavor or as test sites.

**Other Considerations**

Organize a good working team. Distribute duties and develop a firm schedule of activities needed to prepare the proposal in time to meet the proposal deadline.

Schedule proposal writing and information gathering activities over a reasonable time and carefully manage the schedule. Consider scheduling the writing in small,
regular amounts of time. The effort needed to write a proposal might, at first sight, seem insurmountable. By proceeding a step at a time, you will be able to accomplish the task.

Remember to allow enough time to have the proposal revised by a third party if needed and to obtain all the necessary internal and external support letters and permissions. Consider having one person write the final proposal to assure consistency.

Typically a final version of a proposal will have gone through several drafts and revisions. Don’t plan on writing a final version in a first draft.

Invest time running a pilot program and preparing preliminary versions of curricular materials prior to the actual writing of the proposal.

The proposal should be written so that, if funded, it can serve as a blueprint for executing the plan.

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**Step 2 - Writing the Proposal**

**Writing the Proposal Narrative**

A good proposal is always readable, well-organized, grammatically correct, and understandable.

Be explicit in your narrative about how the program will make an improvement. This narrative must contain specifics including details of experiments and/or applications, both to show that planning has been done and to help reviewers understand why the particular application you propose is better than other ideas. You and your colleagues should think through several iterations of the definition of the project.

The narrative should be specific about the proposed activities. Reviewers want details of the project’s organization, the course content, laboratory and other inquiry-based experiments, and participant activities, both to show that groundwork has been laid and to help them understand why the particular ideas you propose are better than others.

Careful writing should allow you to describe, in the limited space available, enough about your project to give the reviewers a clear idea of exactly what you plan to do and why your plan is a good one. How would the project improve education at your institution and how might it be emulated at other similar
institutions? How will your plan ultimately improve students’ understanding of concepts in science, mathematics, engineering, or technology? How will you know it has been done?

You must demonstrate in the narrative that you have a broad knowledge of current scholarship and activities in your field and how this is relevant to your project’s design. This knowledge should include current research in teaching and learning practices. However, do not focus entirely on this aspect and fail to adequately describe the components of your project.

The project description/narrative of the proposal should be written by the person or persons in the science, engineering, or mathematics departments who will be the principal investigator(s). The submitting institution’s sponsored research office or grant administration expert can assist in some areas of the proposal writing, e.g., with budgets or grammar, but usually do not have the scientific qualifications or classroom experience to describe the project in an appropriately technical or pedagogical manner.

It is helpful to reviewers to see that you have devised a time frame. This will show that you have done adequate planning and are realistic about the program’s implementation.

Include examples that illustrate, for example, the innovative activities or exercises that students will be doing. Reviewers usually respond to projects that include an emphasis on active learning and student directed inquiry.

In most cases, it is well to describe your plans to continue the project and institutionalize courses and curriculum beyond the funding period.

**Including Budget Information**

The budget request should be realistic for the project and reflect the goals of the project. It must also be consistent with the requirements of the particular NSF program. It should request sufficient resources needed to carry out the project, but it should not be excessively high.

Budget information should be complete and unambiguous. Carefully review your budget to ensure that ineligible items do not appear in the budget and that adequate attention has been given to cost sharing. Consult the **Program Announcement** for eligible and ineligible items. Most reviewers and all Program Directors look carefully at the proposed budgets to find evidence of careful reflection and realistic project planning.

Institutional and other leveraged commitments toward the budget is one way to demonstrate institutional support of the project. Institutional and other
contributions in terms of matching funds or released time are usually looked upon by reviewers as a positive sign of institutional commitment.

Some programs require specific cost-sharing. For example, for proposals in the Adaptation and Implementation track of DUE’s Course, Curriculum, and Laboratory Improvement program, cost-sharing from non-Federal sources equal to or greater than the requested NSF funds is required for the entire budget. In addition, a specific 1:1 or greater match is required on equipment requests. Cost-sharing information must be included on line M of the budget form, and if the proposal is awarded becomes a condition of the award. Remember that cost-sharing is subject to audit. (For more information, see the Grant Proposal Guide and the DUE Program Announcement.)

Make sure that your budget narrative reflects both your official NSF budget pages and the needs of the project.

Cost of the project must be realistic. Many budget requests are out-of-line with others submitted to the program. Look at the Program Announcement for average size of awards and the award range.

Budgets are often negotiated as a proposal is being considered; but a clear, realistic budget request strengthens a proposal.

Writing the Credentials of the PI and Other Staff

When writing up the credentials of faculty for the grant proposal, each biographical sketch should be written with the proposal in mind and should display the unique background of the principal investigator(s) which will be valuable in working on the proposed project.

Carefully follow program guidelines about format and length of biographical sketches.

Be sure that the roles of all personnel, especially the principal investigators, are described in the proposal itself. Having the roles of the principal investigators and other personnel discussed within the narrative is important so that reviewers can understand their involvement, leadership, and commitment to the project.

If your project involves industry, consider having a co-principal investigator representing industry.

Including Evaluation and Dissemination Information

A good evaluation plan appropriate to the scale of the project will provide information as the project is developing and will determine how effectively the project has achieved its goals. The effects of formative evaluation should be
described. Also include how you intend to evaluate the final project and how you
will determine whether this project met your scientific and pedagogical
expectations.

Discuss how you plan to collect and analyze data on the project’s impact (i.e.,
number of students or faculty affected.)

Describe why the proposed project is a good way to improve education at your
institution and how it might be emulated at other similar institutions.

Explain in detail how you will disseminate information on the success and content
of your project to other scientists and educators. In general, setting up a Web page
about the project is not considered sufficient.

For projects which are creating instructional materials, include information on
potential commercial publication. What products—text, software, CD ROMS,
manuals, or other publications—might result, and what plans are in place to
distribute them effectively?

Projects which include plans for commercial publication are encouraged by NSF. Authors who submit such proposals should demonstrate that NSF funding is
necessary to create the work, make the product available earlier, or better serve
the community.

When extensive utilization of educational technology is expected, how will the
student learning outcomes be evaluated? What are the plans to ensure that
electronic dissemination will lead to broad implementation of material so
provided, and that such material will be subjected to continued scrutiny for
editorial quality and currency of content?

Consider the value that an outside evaluator may add to your project.

**Letters of Commitment**

Include letters of commitment from your department chair and other appropriate
administrators.

If your project involves other people or groups not on your campus (e.g., K-12
teachers, consultants, or other colleges), include letters of commitment and
support from appropriate individuals.

Include letters of commitment with specific contributions from the participants'
supporting institutions. These should make specific commitments and not just be
generic support of good will. Uniquely phrased letters of commitment from
different institutions are better than nearly identical letters from the institutions to
be served.
Project Summary and Project Data Form

The project summary (abstract) is the first thing that reviewers and NSF staff read. It should be written clearly and concisely. In the space allotted, it should outline the problem, the objectives and the expected outcomes, project activities, and the audience to be addressed. Project directors use the summary to choose reviewers for the proposal. It is also the reviewers’ introduction to the project. NSF publishes an abstract of the project (both in hard copy and electronically) should it be funded. Considerable effort and thought should be spent in preparing a well-written summary.

The numbers given on the Project Data Form concerning student impact should be as accurate as possible. Reviewers look for discrepancies in enrollment data and the projected numbers of students. They look for reasonable expectations in those numbers.

Step 3 - Before Sending Your Proposal to NSF

Learning More About the Review Process

To gain expertise in NSF’s proposal review system, volunteer to serve on a program review panel yourself. Each Division compiles names of appropriate individuals who can serve as reviewers. Contact the pertinent division for a form to fill out to volunteer for reviewer status.

Encourage your professional organization to form a committee to help members review their proposals before submitting them to NSF.

Getting Advice

Consider asking someone who has served on an NSF program review panel to assess your proposal.

If possible, have someone not connected with the proposal read and comment on a draft of your proposal—with sufficient time allowed for changes prior to the submission of your proposal. This person can help identify omissions or inconsistent logic before reviewers see the proposal.

Some programs require a preliminary proposal. Check the Program Announcement and with NSF staff.
When working on a proposal or award for several years, you may be transferred from one Program Director to another. Many Program Directors come to NSF from colleges and universities for one or two-year assignments and then return to their schools at the end of their rotational assignments.

**Before Finishing the Proposal**

When a checklist is provided in the *Program Announcement*, use it to ensure that all needed information, signatures, and/or administrative details are included.

Look again at the goals and objectives and at your written plans and procedures for achieving the goals. Check to see that the goals are well-developed and realistic and that your plans are innovative and appropriate.

Consider using graphics to make your point stronger and clearer.

A time line to show when different components of your project are to take place can be particularly effective.

Include a table of contents. This makes it easy for reviewers to locate important sections of your proposal.

**Little Things That Can Make a Difference**

Use a spell checker before submitting the proposal.

Proofread carefully.

Be sure to follow the directions given in the *Program Announcement*. In particular, follow any specific requirements such as page limitations.

In general avoid abbreviations. For example, use laboratory, not lab and mathematics, not math.

The first time you use an acronym, write out what it stands for and put the acronym in parentheses. For example, American Mathematical Association of Two-Year Colleges (AMATYC). After that you can use the acronym.

Make sure all your references are correct.

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**Step 4 - Awards and Declinations**
If The Grant is Awarded

If the proposal is successful, make the best possible use of the funds awarded. Situations may arise that require changes in your plans to accomplish the goals of the project. Within broad limits described in the grant conditions (reference GC-1, FDP III, and NSF’s Grant Policy Manual) and within the overall budget, such changes may be possible. Consult your institution’s sponsored research office or grant administration office for guidance.

In addition, let others know about your project. This may include providing advice or assistance to faculty developing similar projects. It clearly includes disseminating products and results. Make sure that other scientists and educators learn about your activities through correspondence, telephone conversations, presentations, and publications. Finally, reference the National Science Foundation as well as the sponsoring Division and/or program in all presentations and publications.

If Your Proposal is Not Funded

If the proposal is not funded, consider the reviews of the panel and the comments from NSF staff objectively and seriously. Consult NSF staff if necessary and, unless the feedback indicates otherwise, submit a revised or new proposal the following year. Many awards made in the programs have been for proposals that were revised thoughtfully and resubmitted after having been declined initially.

Your institution may have a strong enough commitment to the project to provide funding. You may also discover other funding avenues open to you. If you have contacts with business and industry in your community, a company in the private sector may be interested in helping fund your project. Often, institution grant officers have directories that include the names of other foundations and their funding priorities.

A Final Note

The National Science Foundation is looking for proposals of programs that will improve the quality of education in science, mathematics, engineering, and technology at all levels. It seeks to support the best science, mathematics, engineering, and technology education activities that meet the needs of target audiences. It is in our mutual best interest to have your proposal be of the highest quality.

We hope that you have found this Guide helpful and encourage you to contact a Program Director at NSF for additional information.
INFORMATION TECHNOLOGY
RESEARCH (ITR)

NSF 99-167

PROPOSAL PREPARATION & SUBMISSION INSTRUCTIONS

A. Letters of intent (Required)

Letters of intent should be sent from the prospective PI by email to itr-loi@nsf.gov, and should contain the PI and co-PI’s names, a list of possible participating institutions, a possible title, and not more than 500 words to describe the work enough to permit intelligent choice of reviewers. Letters of intent will not be evaluated or used to decide on funding. They are requested to assist NSF in planning the review process. The submission of letters of intent enables NSF to begin choosing panelists before the proposal submission deadline.

B. Pre-Proposal Preparation Instructions

Pre-proposals are required for proposals requesting more than $500K and must be submitted via FastLane. Preproposals should include:

- **Cover page.** (NSF Form 1207; only page 1, page 2 not required)
- **Information about the Principal Investigator (Form 1225) is automatically generated by FastLane.**
- **Project summary.** Provide a brief description of the project, identifying the scientific research problems to be addressed, the methodologies to be used, and the potential outcomes.
- **Project Description, Goals and Objectives** (maximum five pages): Discuss the goals, objectives and anticipated impact of the proposed project. Make clear that the proposed project is a research project, and that it contributes to advances in information technology and related sciences as appropriate.
- **Budget Outline.** Prepare a one-page cumulative budget for the full duration of the project. The budget need not be detailed but should be sufficient for reviewers to grasp the intended scale of the proposed project. (In FastLane, enter your cumulative budget in Budget Year 1. FastLane will automatically fill out a cumulative budget for your proposal.)
- **Biographical Sketches.** For all senior personnel (see Appendix C of the Grant Proposal Guide for a definition of senior personnel) provide a brief curriculum vitae including only name, current address, educational background, and up to 5 publications most closely related to the research. This section must not exceed two pages per person.
PROPOSAL REVIEW INFORMATION

A. Merit Review Criteria.

Reviews of proposals submitted to NSF are solicited from peers with expertise in the substantive area of the proposed research or education project. These reviewers are selected by Program officers charged with the oversight of the review process. NSF invites the proposer to suggest, at the time of submission, the names of appropriate or inappropriate reviewers. Care is taken to ensure that reviewers have no conflicts with the proposer. Special efforts are made to recruit reviewers from non-academic institutions, minority serving institutions, adjacent disciplines to that principally addressed in the proposal.

Proposals will be reviewed against the following general merit review criteria established by the National Science Board. Following each criterion are potential considerations that the reviewer may employ in the evaluation. These are suggestions and not all will apply to any given proposal. Each reviewer will be asked to address only those that are relevant to the proposal and for which he/she is qualified to make judgments.

What is the intellectual merit of the proposed activity?

How important is the proposed activity to advancing knowledge and understanding within its own field or across different fields? How well qualified is the proposer (individual or team) to conduct the project? (If appropriate, the reviewer will comment on the quality of prior work.) To what extent does the proposed activity suggest and explore creative and original concepts? How well conceived and organized is the proposed activity? Is there sufficient access to resources?

What are the broader impacts of the proposed activity?

How well does the activity advance discovery and understanding while promoting teaching, training, and learning? How well does the proposed activity broaden the participation of underrepresented groups (e.g., gender, ethnicity, disability, geographic, etc.)? To what extent will it enhance the infrastructure for research and education, such as facilities, instrumentation, networks, and partnerships? Will the results be disseminated broadly to enhance scientific and technological understanding? What may be the benefits of the proposed activity to society?

PIs should address the following elements in their proposal to provide reviewers with the information necessary to respond fully to both NSF merit review criteria. NSF staff will give these factors careful consideration in making funding decisions.

Integration of Research and Education

One of the principal strategies in support of NSF’s goals is to foster integration of research and education through the programs, projects and activities it supports at academic and research institutions. These institutions provide abundant opportunities where individuals may concurrently assume responsibilities as researchers, educators, and students and where all can engage in joint efforts that infuse education with the excitement of discovery and enrich research through the diversity of learner perspectives.
Integrating Diversity into NSF Programs, Projects, and Activities

Broadening opportunities and enabling the participation of all citizens — women and men, underrepresented minorities, and persons with disabilities — are essential to the health and vitality of science and engineering. NSF is committed to this principle of diversity and deems it central to the programs, projects, and activities it considers and supports.

B. Review Protocol and Associated Customer Service Standard

All proposals are carefully reviewed by at least three persons outside NSF who are experts in the particular fields represented by the proposal. Proposals submitted in response to this solicitation will be reviewed by panel review only. Pre-proposals will also be reviewed by panels only.

Reviewers will be asked to formulate a recommendation to either support or decline each proposal. A program officer assigned to manage the proposal’s review will consider the advice of reviewers and will formulate a recommendation. In most cases, proposers will be contacted by the program officer after his or her recommendation to award or decline funding has been approved by his or her supervisor, the division director. This informal notification is not a guarantee of an eventual award. NSF will be able to tell applicants whether their proposals have been declined or recommended for funding within six months for 95 percent of proposals. The time interval begins on the proposal deadline or target date or from the date of receipt, if deadlines or target dates are not used by the program. The interval ends when the division director accepts the program officer’s recommendation.

In all cases, after programmatic approval has been obtained, the proposals recommended for funding will be forwarded to the Division of Grants and Agreements for review of business, financial and policy implications and the processing and issuance of a grant or other agreement. Proposers are cautioned that only an NSF Grants Officer may make commitments, obligations or awards on behalf of NSF or authorize the expenditure of funds. No commitment on the part of NSF should be inferred from technical or budgetary discussions with an NSF Program Officer. A Principal Investigator or organization that makes financial or personnel commitments in the absence of a grant or cooperative agreement signed by the NSF Grants Officer does so at its own risk.
How to prepare a successful grant proposal in Nursing and Clinical Practice

Pullen, Richard L. Jr. EdD, RN; Mueller, Sheryl S. MSEd, MSN, RN

Free Access

Identifying sources of funding is a common need in clinical practice to enhance the quality of care in the community and in academia to promote student success in nursing school. Grant-writing is one major source of securing funding for innovative projects. Preparing a grant proposal is a highly organized process of clearly articulating and communicating ideas that bring the project to life to individuals from the granting agency who will be evaluating the proposal.

Getting started

An effective grant proposal must demonstrate that an organization has carefully planned for a successful project. Therefore, it's often beneficial for individuals to attend a grant-writing workshop or class as a first step, especially if individuals who plan to participate in the grant writing experience have never written a grant proposal. The next step in proposal planning is to schedule brainstorming sessions with all those who'll be directly or indirectly involved in the grant writing process. At these sessions, participants will identify the statement(s) of need and develop a clear, concise description of the proposed project. The goals for the project, a timetable for the project, and ways to evaluate the effectiveness of the project will also be determined during the initial proposal planning sessions.

It's crucial that industry partners from the community be involved in the grant proposal planning process. These partners are often the direct beneficiaries of project outcomes and may provide leveraged funds for the grant project. Letters of commitment to support the grant project can be more easily obtained from industry partners and community organizations that are initially a part of the planning process. Sources of grant funding should also be explored early in the grant planning process. These sources are numerous and include, but aren't limited to, the federal government, various accrediting bodies, state and local agencies, and professional organizations.

A request for proposal, or RFP, is the primary source of information about each specific grant and provides an outline of criteria for the development of the grant proposal. It should be consulted early and often during the planning process in order to meet the requirements of the granting agency for the proposal.

Generally, each grant proposal will include the following sections:

* cover letter and summary
* introduction (presentation of the organization or applicant)
* statement of need and project objectives/outcomes
* project methods and design
* project evaluation
* project budget narrative
* proposal appendix.

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Cover letter and summary

A one-page cover letter should be written on the applicant's letterhead to accompany the grant proposal. The cover letter should be signed by the highest official in the organization seeking the grant. Following the cover letter, a proposal summary or abstract should be inserted. The abstract or summary is developed after the proposal has been written and is usually no longer than three or four paragraphs. The summary should include a description of the applicant, a definition of the problem to be solved, a statement of objectives to be achieved, an outline of activities and procedures to be used to accomplish those objectives, a description of the evaluation design, the plans for the project at the end of the grant, and a statement of what the cost will be for the grant-funding agency. It should also identify other funding sources participating in the grant, if any.

Introduction

Be prepared to provide information to the grant-funding agency or source about the organization submitting the grant proposal. Most proposals require a statement of the purpose and a description of the organization's past and present operations. The introduction of the proposal should include a brief history of the organization, a description of the qualifications of its professional staff and board of directors, and a discussion about whether other funds are being sought or are available for the grant project. A succinct resume of each principal grant author will also be required.

Statement of need and project objectives/outcomes

The problem statement (or needs assessment) is a key element of any proposal and provides a clear, concise, and well-supported picture of the problem(s) to be addressed. The best way to supply the information necessary to support the problem statement is to conduct both a formal and informal needs assessment in the service area, as well as to review the professional literature on the problem(s) to be addressed. Areas to document in the problem statement include, but aren't limited to, the purpose of the proposal, the project beneficiaries, the social and economic costs, and the nature of the problem(s). The statement of the problem(s) must also stress what identified needs gaps will be included in the grant project.

The project objectives or outcome statements are specific activities in the proposal, which are designed to address the problem(s) identified. Well-written objectives or outcome statements are well stated in clear, measurable terms. If the grant proposal is funded, the stated project objectives or outcomes statements will probably be used to evaluate not only the project's progress, but also overall project effectiveness.

Project methods and design

After the objectives or outcome statements have been identified in the proposal, it's important to walk the potential grantor through each step of the project. The project methods and design
section is the blueprint to solve the stated problem(s) identified in the proposed grant. A specific plan of action, which delineates a sequence of justifiable activities including the proposed staffing and timetable for each task, should be written for each objective. The innovative features of the project should also be highlighted in the project methods and design section. Sometimes it's helpful to develop a diagram or model to complement the narrative. This section, in particular, should be carefully reviewed to ensure that the activities being proposed are realistic in terms of the proposed resources and designated time lines.

**Project evaluation**

Evaluation of a grant project includes two forms of evaluation: (1) product evaluation and (2) process evaluation. Product evaluation addresses the extent to which the project achieved its desired objectives. Process evaluation addresses how the project was conducted in terms of consistency with the stated plan of action and the effectiveness of the various activities within the plan. Common measures, or outputs, at each stage of the project must be clearly written for process evaluation. Federal grants often require a detailed process evaluation component that's reportable on a quarterly and annual basis.

**Project budget narrative**

The project budget should be presented as clearly and in as much detail as possible to justify the proposed expenses. The budget section should begin with a budget summary; like the proposal summary, it's written after the entire budget has been prepared. Thereafter, each section of the budget should be in an outline form, and line items should be listed under major headings and subdivisions. A well-prepared budget will justify all the proposed expenses and be consistent with the grant proposal narrative. The budget should specifically include the cost of salaries for personnel, anticipated expenses for equipment purchases, and a discussion of indirect costs and/or matching funds that may be required.

**Proposal appendix**

Lengthy documents, which are referred to in the narrative, are best added to the proposal in the appendix section. Examples to include in the appendix are letters of commitment, a list of previous funders, key staff biographies, annual reports, statistical data, maps, and diagrams and/or models.

**Important points to remember**
It's highly likely that several drafts of the proposal will be developed before the final product is submitted to the granting agency. Successful proposals are professional looking, have theoretical and methodological soundness, are written using positive terminology, don't overuse educational terms, are culturally sensitive, and present a justifiable budget that matches the project objectives and outcome statements. Successful proposals also clearly document how the project will be shared (disseminated) with others. Developing drafts of the proposal is labor-intensive work and requires a commitment by the grant writing team to meet deadlines in a timely manner.

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Proposal Writing in Scholarship of Teaching:

“To better understand teaching and learning through discipline based inquiry.”

Scholarship of Teaching and Learning (SOTL) Grants support projects that will examine and reflect upon the teaching and learning practices in their discipline in a systematic way by using research methods and by making the results known to the campus community and beyond. Such projects may be aimed at making significant curricular reforms, designing new curricula, conducting research that informs teaching and learning at the local (course, department, college, university) level, or initiating activities that would improve the quality of instruction in the undergraduate and graduate programs of the unit or the campus. The SOTL Grants Committee is particularly concerned with funding projects which have measurable outcomes and will demonstrate evidence of success to the UNC Charlotte teaching and learning community (e.g., see the past proposals that were successfully funded).

Purpose The purpose of the SOTL Grants program is twofold:

1. To fund instructional research projects that will benefit the UNC Charlotte teaching and learning community
2. To ensure that the results of the instructional research projects are shared and disseminated among the UNC Charlotte community

In essence, you are applying for funding for an instructional project that personally interests you or your proposal team, but the project must also be of value to and have impact on the campus. To that end, it is an important part of the granting process that you explicitly detail how you will make your findings known. Grant recipients will be expected to participate in sharing the results of their project in a public forum, including but not limited to a poster session or a presentation during UNC Charlotte’s Teaching Week (or similar campus symposium or event arranged through the Center for Teaching and Learning), professional journals, and professional conferences.

Suggested Areas of Focus

We suggest that proposals be focused on one or more of the following areas of current needs:

- Increasing student retention, progression, and graduation rates
- Improving access for specific groups of students or to specific programs
- Enhancing student professional development
- Restructuring large courses across multiple sections
- Increasing student engagement through curricular innovation
- Using formative and summative assessment for instructional improvement
- Distributed learning
- Diversity
- Reaching non-traditional students
- Increasing faculty-student interaction
- Increasing cooperation among students
- Encouraging active learning
- Giving prompt feedback
• Emphasizing time on task
• Communicating high expectations
• Respecting diverse talents and ways of learning
• Improving learning outcomes
• Developing new programs of study

Other areas which have direct linkage to Academic and Institutional Plans

The projects may use qualitative, quantitative, or mixed methods, but the focus should be on systematic inquiry with the obligation to publish and share the measurable outcomes with peers both within and beyond UNC Charlotte. The SOTL Grants Committee strongly recommends that you look at the abstracts and proposals of past winners that were funded.

Format of the Proposal

Each proposal must be typed and include the following components, in order:

i. **Title Page**, stating title of project and the faculty members and unit(s) involved, centered on the page.

ii. An **Abstract** of the project, not to exceed 250 words. What pedagogical issue or teaching innovation would you like to investigate? The abstract should be a concise summary of the project and must include your intended outcomes/objectives, explain why they are valuable to the university and the unit, and highlight the plans and methods for achieving the project goals.

iii. A completed **Budget Request Form for SOTL Grants [Word 18 KB]**, including a required **Budget Narrative**, which must describe how you will use the funds requested. Matching funds from department or college sources should be listed, if provided. (Please refer to the **Special Requirements** listed above when creating your budget.)

iv. A **Letter of Support** that has been signed by the administrator responsible for the unit submitting the proposal (e.g., your college dean). If it is a joint proposal that involves more than one college, you must include a letter of support from each.

v. The **Project Narrative**, typed and double-spaced and not to exceed 2500 words (excluding references/citations, the abstract, and the budget worksheet), which must describe the project explicitly and address each of the following areas:

vi. **Specific Aims**

This section should contain the following elements:

A. The overall purpose of the project

B. The specific objectives to be achieved

C. A statement of the specific research questions to be answered as a result of the project

D. The rationale for the proposed project, plainly illustrating why it should be funded. This section should put the project in context: identify the problem to be addressed and the relation of the project to applicant’s unit’s mission, objectives, and priorities. Any planning, pilot work, or prior observations that support the project should be included.
E. The impact of the study on undergraduate or graduate teaching and learning (e.g., the benefits to student learning and success, the number of students to be served, etc.).

vii. Literature Review
A brief review of the relevant literature should illustrate that your project is grounded in research and will demonstrate your knowledge of the issues involved in your problem. It will also indicate your ability to synthesize recent literature in your project area and will provide a conceptual framework for your project. The literature review will also help convince the Grant Committee of the need and/or novelty of the project and that the results of the project have the potential to be published or presented in a relevant forum.

The literature review should be well organized and engaging to read. We suggest using subheadings to make the literature review coherent and easy to follow.

A. Methods
The methods section must explain your overall project plan and all the activities required to complete the project. Be sure to explain why you have selected this approach and how it will support your project.

Your proposal must persuade the Faculty SOTL Grants Committee that the project is well planned. The methods should be presented in sufficient detail to allow the Grants Committee to understand the steps that will be required to complete the project. The Committee is concerned that your methodological approach is valid and reliable and will, in fact, address the stated needs of the project. Be sure to include any potential limitations that may occur with the proposed methodology and what steps you will take to rectify any potential problems.

B. Evaluation
The expected outcomes and impact of your project are extremely important. Your proposal must describe to the committee how you will assess the success of your project. Your proposal must detail what you will measure, how you will measure it, and why the measures are appropriate. Include a description of the data collection, instrumentation, and/or statistical methods you will use.

The evaluation section must clearly indicate how your evaluation methods are directly linked to your intended outcomes and project objectives. Both formative and summative evaluations should be included, as appropriate.

C. Knowledge Dissemination
This grant program is a professional development opportunity. Grants must describe how the results of the project will be communicated to the UNC Charlotte community, and if applicable, how the results will be communicated to the field. You should list the target audiences with which you plan to share your results, such as the specific journals and conferences and so forth. (See Requirements for Grant Recipients below.)
D. **Human Subjects**
While much of SOTL research may be considered exempt research, "in accordance with federal regulations and UNC Charlotte policy, ALL University research projects involving the use of human subjects or the use of human subjects data must be reviewed and approved in advance by the Institutional Review Board (IRB) for Research with Human Subjects. This requirement applies to all research projects regardless of the granting agency or the institution to which they are being submitted for funding, and includes those supported by University funds or those without funding." (See more information at the UNC Charlotte Human Subjects in Research website).

Your grant proposal must explain the steps you have taken (and/or plan to take) in the IRB process (e.g., including but not limited to completing and submitting the Human Subjects Protocol Form, receiving IRB review status, having been assigned a protocol number, etc.).

E. **Extramural Funding**
If you will be seeking extramural funding for this project, please list the programs and agencies and specify how SOTL funds will be leveraged to enhance the overall project. For example, a SOTL project could serve as a pilot test for a larger, externally funded project.

F. **Timeline**
Provide a timeline of proposed project activities, from start to finish. An annotated list of dates and activities is the preferred format.
Proposal writing Reports

http://www.add.devry.edu/PDFs/Proposal_Guide.pdf

ABSTRACT
INTRODUCTION
Purpose
Problem
Scope

TECHNICAL SECTION

MANAGEMENT REQUIREMENTS
COST SECTION
CONCLUSION

RECOMMENDATIONS
LIST OF ILLUSTRATIONS

Table 1. Cost Estimates

Another acceptable variation of the Introduction section is Purpose, Scope, Procedure.
GRANT PROPOSALS: Assessment Criteria

Most funding agencies apply similar criteria to the evaluation of proposals. We discuss these below. It is important to address these criteria directly in your case for support. A proposal which fails to meet them will be rejected regardless of the quality of its source. Otherwise, there is a danger of discriminating unfairly in favour of well-known applicants.

Major criteria

Here are the major criteria against which your proposal will be judged. Read through your case for support repeatedly, and ask whether the answers to the questions below are clear, even to a non-expert.

- Does the proposal address a well-formulated problem?
- Is it a research problem, or is it just a routine application of known techniques?
- Is it an important problem, whose solution will have useful effects?
- Is special funding necessary to solve the problem, or to solve it quickly enough, or could it be solved using the normal resources of a well-found laboratory?
- Do the proposers have a good idea on which to base their work? The proposal must explain the idea in sufficient detail to convince the reader that the idea has some substance, and should explain why there is reason to believe that it is indeed a good idea. It is absolutely not enough merely to identify a wish-list of desirable goals (a very common fault). There must be significant technical substance to the proposal.
- Does the proposal explain clearly what work will be done? Does it explain what results are expected and how they will be evaluated? How would it be possible to judge whether the work was successful?
- Is there evidence that the proposers know about the work that others have done on the problem? This evidence may take the form of a short review as well as representative references.
- Do the proposers have a good track record, both of doing good research and of publishing it? A representative selection of relevant publications by the proposers should be cited. Absence of a track record is clearly not a disqualifying characteristic, especially in the case of young researchers, but a consistent failure to publish raises question marks.

Secondary criteria

Some secondary criteria may be applied to separate closely-matched proposals. It is often essentially impossible to distinguish in a truly objective manner among such proposals and it is sad that it is necessary to do so. The criteria are ambiguous and conflict with each other, so the committee simply has to use its best judgement in making its recommendations.

- An applicant with little existing funding may deserve to be placed ahead of a well-funded one. On the other hand, existing funding provides evidence of a good track record.
- There is merit in funding a proposal to keep a strong research team together; but it is also important to give priority to new researchers in the field.
• An attempt is made to maintain a reasonable balance between different research areas, where this is possible.
• Evidence of industrial interest in a proposal, and of its potential for future exploitation will usually count in its favour. The closer the research is to producing a product, the more industrial involvement is required, and this should usually include some industrial contribution to the project. The case for support should include some 'route to market' plan, i.e., you should have thought about how the research will eventually become a product --- identifying an industrial partner is usually part of such a plan.
• A proposal will benefit if it is seen to address recommendations of Technology Foresight. It is worth looking at the relevant Foresight Panel reports and including quotes in your case for support that relate to your proposal.

Cost-effectiveness

Finally, the programme manager tries to ensure that his or her budget is used in a cost-effective manner. Each proposal which has some chance of being funded is examined, and the programme manager may lop costs off an apparently over-expensive project. Such cost reduction is likely to happen if the major costs of staff and equipment are not given clear, individual justification.

COMMON SHORTCOMINGS

Here are some of the ways in which proposals often fail to meet these criteria.

• It is not clear what question is being addressed by the proposal. In particular, it is not clear what the outcome of the research might be, or what would constitute success or failure. It is vital to discuss what contribution to human knowledge would be made by the research.
• The question being addressed is woolly or ill-formed. The committee are looking for evidence of clear thinking both in the formulation of the problem and in the planned attack on it.
• It is not clear why the question is worth addressing. The proposal must be well motivated.
• The proposal is just a routine application of known techniques. Research funding agencies are interested in funding research rather than development. Industry is expected to fund development work. The LINK scheme is appropriate for proposals which combine both research and development. If the development would benefit another research field, rather than industry, then look to the funding agencies of that field.
• Industry ought to be doing it instead. If the work is 'near market' then it should be done by industry or industry or venture capital should be funding you to do it. If no industry is interested then the prima facie assumption is that the product has no commercial value.
• There is no evidence that the proposers will succeed where others have failed. It is easy enough to write a proposal with an exciting-sounding wish-list of hoped-for achievements, but you must substantiate your goals with solid evidence of why you have a good chance of achieving them.
This evidence generally takes two main forms:

- "We have an idea". In this case, you should sketch the idea, and describe preliminary work you have done which shows that it is indeed a good idea. You are unlikely to get funding without such evidence. It is not good saying "give us the money and we will start thinking about this problem".
- "We have a good track record". Include a selective list of publications, and perhaps include a short paper (preferably a published one) which gives more background, as an appendix. If you make it clear that it is an appendix, you won't usually fall foul of any length limits.

- **A new idea is claimed but insufficient technical details of the idea are given for the committee to be able to judge whether it looks promising.** Since the committee cannot be expert in all areas there is a danger of overwhelming them with technical details, but it is better to err by overwhelming them than by underwhelming them. They will usually get an expert referee to evaluate your idea.
- **The proposers seem unaware of related research.** Related work must be mentioned, if only to be dismissed. Otherwise, the committee will think that the proposers are ignorant and, therefore, not the best group to fund. The case for support should have a list of references like any paper, and you should look at it to check it has a balanced feel - your referee will do so. Do not make the mistake of giving references only to your own work!
- **The proposed research has already been done - or appears to have been done.** Rival solutions must be discussed and their inadequacies revealed.
- **The proposal is badly presented, or incomprehensible to all but an expert in the field.** Remember that your proposal will be read by non-experts as well as (hopefully) experts. A good proposal is simultaneously comprehensible to non-experts, while also convincing experts that you know your subject. Keep highly-technical material in well-signposted section(s); avoid it in the introduction.
- **The proposers seem to be attempting too much for the funding requested and time-scale envisaged.** Such lack of realism may reflect a poor understanding of the problem or poor research methodology.
- **The proposal is too expensive for the probable gain.** If it is easy to see how to cut the request for people/equipment/travel, etc. to something more reasonable then it might be awarded in reduced form. More likely, it will be rejected.
- **The proposers institution should be funding it.** Research agencies will usually only fund research that requires resources beyond that which might be expected in a "well-found laboratory" --- indeed, this is part of the charter of the research councils. If it looks like your proposal might be done by a PhD student on the departmental computer then that is what should happen. If the proposer's laboratory is not "well-found" then this is taken to be a vote of no-confidence in the proposer by his/her institution.

Doubtless there are other common grounds for failure that have been omitted. If you know of any please let us know!

Often, one can tell from independent knowledge of the proposers or by reading between the lines of the proposal, that the criteria could have been met if a little bit more thought had gone into the proposal. There is a clear question being addressed by the research, but the proposers failed to
clarify what it was. The proposers are aware of related research, but they failed to discuss it in the proposal. The proposers do have some clear technical ideas, but they thought it inappropriate to go into such detail in the proposal. Unfortunately, there is a limit to which a funding agencies can give such cases the benefit of the doubt. It is not fair for referees to overlook shortcomings in proposals of which they have personal knowledge if similar shortcomings are not overlooked in proposals which they have not encountered before. In any case, proposals which do meet the criteria deserve precedence.