RESEARCH AND PUBLICATIONS COMMITTEE

GUIDELINES FOR WRITERS OF

DENTAL RESEARCH PROPOSALS

RESEARCH AND PUBLICATIONS COMMITTEE

SCHOOL OF DENTISTRY

UNIVERSITY OF PUERTO RICO

FEBRUARY 1979
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I. INTRODUCTION

Writing a research proposal, like writing any other request, is a problem of persuasion. It is well to assume that your reader is a busy, impatient, skeptical person who has no reason to give your proposal special consideration and who is probably faced with many more requests than he can grant, or even read thoroughly. Such a reader wants to find out quickly and easily the answers to these questions:

What do you want to do, how much will it cost, and how much time will it take?
How does the proposed project relate to the dental school's interest? What difference will the project make to your university, your fellow students, your discipline, the state, the nation, the world, or whatever the appropriate categories are?
What has already been done in the area of your project?
How do you plan to do it?
How will the results be evaluated?
Why should you, rather than someone else, do this research?

The RPO chairman, whom you will eventually be asking to approve the proposal and thereby endorse your plans for student and faculty commitment, should be informed of your intentions and especially of any aspect of the proposed research that might conceivably affect departmental administration or your classroom duties. Early discussion of potential problems will smooth the way for the proposal later.

II. THE PROPOSAL

Typical parts of a proposal are:

Title Page
Table of Contents
Abstract

- Introduction (including Statement of Problem, Purpose of Research, and Significance of Research)
- Background (including Literature Survey)
- Description of Proposed Research (including Method or Approach)
- Description of Relevant Institutional Resources (including personnel and proposed budget)
- List of References
- Appendix (including Informed Consent)

The Title Page - A good title is usually a compromise between conciseness and explicitness. Our requirement limits proposal titles to fifty units (counting all characters and spaces), yet investigators are expected to make their titles clear and comprehensive enough to indicate the nature of the proposed work. This dilemma can usually be solved with a few minutes' deliberation. One good way to cut the length of titles is to avoid words that add nothing to a reader's
Title Page

Title of Research Proposal

Date Submitted -

Date Proposed Research will Commence -

Estimated Duration of Project -

Name (s) of Author (s) and their research functions

Name of Advisor

Whether or not this project involves human experimentation
understanding, such as "Studies on...", "Investigations in...", or "Research on some problems in..."

A sample illustration of a title page is included on the next page.

The Table of Contents. Very brief proposals with few sections ordinarily do not need a table of contents; the guiding consideration in this is the reader's convenience. Long and detailed proposals may require, in addition to a table of contents, a list of illustrations (or figures) and a list of tables. If all of these are included, they should follow the order mentioned, and each should be numbered with lower-case Roman numerals. If they are brief, more than one can be put on a single page.

The table of contents should list all major parts and divisions (including the abstract, even though it precedes the table of contents). Subdivisions usually need not be listed. Again, the convenience of the reader should be the guiding consideration.

The Abstract. Every proposal, even very brief ones, should have an abstract. Readers often use the abstract alone in their compilations of research projects funded or in disseminating information about successful projects. Though it appears first, the abstract should be written last, as a concise summary (approximately 200 words) of the proposal. It should appear on a page by itself numbered with a small Roman numeral if the proposal has a table of contents and with an Arabic number if it does not.

To present the essential meaning of the proposal, the abstract should summarize or at least suggest the answers to all the questions mentioned above, except the one about cost (which is excluded on the grounds that the abstract is subject to a wider public distribution that the rest of the proposal). Certainly the major objectives of the project and the procedures to be followed in meeting these objectives should be mentioned. Some readers read only the abstract, and most readers rely on it initially to give them a quick overview of the proposal and later to refresh their memory of its main points. The abstract speaks for the proposal when it is separated from it, provides the reader with his first impression of the request, and by acting as a summary, frequently provides him also with his last. Thus it is the most important single element in the proposal.

The Introduction. The introduction of a proposal should nearly always begin with a capsule statement of what is being proposed. Some authors believe that the hard facts of time and money should be buried under a cushion of soft sell. They are afraid that the reviewer will stop reading at the sight of a dollar sign. Actually, the reviewer is much more likely to stop reading if he cannot quickly find out what he is to consider.

The main objective of the introduction obviously is to introduce the subject to a stranger. You should not assume that your reader is familiar with your subject. Administrators in sponsoring agencies want to get a general idea of the proposed work before passing the proposal to reviewers who can judge its technical merit. Thus the introduction should be clear to an informed layman. It should give enough background to enable him to place your particular
research problem in a context of common knowledge and should show how its solution will advance the field or be important for some other work. Be careful not to overstate, but do not neglect to state very specifically what the importance of your research is.

In introducing the research problem, it is sometimes helpful to say what it is not, especially if it could easily be confused with related work. You may also need to explain the underlying assumption of your research or the hypothesis you will be using.

The general tone of the introduction should reflect a sober self-confidence. A touch of enthusiasm is not out of place, but extravagant promises are anathema to most reviewers.

The Background Section. This section may not be necessary if the proposal is relatively simple and if the introduction can present the relevant background in a few sentences. If previous or related work must be discussed in some detail, however, or if the literature of the subject must be reviewed, a background or literature-review section is desirable. Sufficient details should be given in this discussion (1) to make clear what the research problem is and exactly what has been accomplished; (2) to give evidence of your own competence in the field; and (3) to show why the previous work needs to be continued. Some sponsors want to know also who has funded the previous work.

Discussions of work done by others should lead the reader to a clear impression of how you will be building up what has already been done, and how your work differs from theirs. It is important to establish what is original in your approach, what circumstances have changed since related work was done, or what is unique about the time and place of the proposed research.

Literature reviews should be selective and critical. Reviewers do not want to read through a voluminous working bibliography; they want to know the especially pertinent works and your evaluation of them. A simple list of works with no clear evidence that you have studied them and have opinions about them contributes almost nothing to the proposal.

The Methods and Materials

A. Description of Proposed Research. The comprehensive explanation of the proposed research is addressed not to laymen but to other specialists in your field. This section, which may need several subsections, is of course the heart of the proposal and is the primary concern of the technical reviewers. Research design is a large subject and cannot be covered here, but a few reminders concerning frequently mishandled aspects of proposals may be helpful.

1. Be realistic in designing the program of work. Overly optimistic notions of what the project can accomplish in one, two, or three years or of its effects on the world will only detract from the proposal's chances of being approved. Probably the comment most frequently made by reviewers is that the research plans should be scaled down to a more specific and more manageable project that will permit the approach to be evaluated and that, if successful, will form a sound basis for further work. In other words, your proposal should
distinguish clearly between long-range research goals and the short-range goals for which funding is being sought. If your first year must be spent developing an analytical method or laying ground-work, spell that out as Phase 1. Then at the end of the year you will be able to report that you have accomplished something and are ready to undertake Phase 2.

2. Be explicit about any assumptions or hypotheses the research method rests upon.

3. Be clear about the focus of the research. In defining the limits of the project, especially in exploratory or experimental work, it is helpful to pose the specific question or questions the project is intended to answer.

4. Be as detailed as possible about the schedule of the proposed work. When will the first step be completed? When can subsequent steps be started? What must be done before what else, and what can be done at the same time? Sponsors appreciate the evidence that the investigator knows how to proceed in a step-by-step fashion.

5. Be specific about the means of evaluating the data or the conclusions. Try to imagine the questions or objections of a hostile critic and show that the research plan anticipates them.

6. Be certain that the connection between the research objectives and the research method is evident. If a reviewer fails to see this connection, he will probably not give your proposal any further consideration. It is better here to risk stating the obvious than to risk the charge that you have not thought carefully enough about what your particular methods or approach can be expected to demonstrate.

B. Description of Relevant Institutional Resources. The nature of this section depends on your project, of course, but in general this section details the resources available to the proposed project.

1. The Personnel Section. This section usually consists of two parts: an explanation of the proposed personnel arrangements and the biographical data sheets for each of the main contributors to the project. The explanation should specify how many persons at what percentage of time and in what academic categories will be participating in the project. Any student participation, paid or unpaid, should be mentioned, and the nature of the proposed contribution detailed. If any persons must be hired for the project, say so, and explain why, unless the need for persons not already available within the University is self-evident.

   The biographical data sheets should immediately follow the explanatory text of the "personnel section. For extremely large program proposals with eight or more participants, the data sheets may be given separately in an appendix. All biographical data sheets within the proposal should be in a common format. A convenient, easily read format is illustrated in the sample on the next page. These sheets should be confined to relevant information. Data on marital status, children, hobbies, civic activities, etc., should not be included. The list of publications must be selective, either on the basis of pertinence to the proposed work or of intrinsic importance. All books written and a selection of recent or
Ernesto I. Torres Zapater
47 Street S.O. #806
Las Lomas
Rio Piedras, P.R. 00926
Tel.: 782-3941

33 years Old

Education

University of Puerto Rico, School of Dentistry - Class of 1979
Rio Piedras, Puerto Rico - 1975 to Present -

University of Iowa, Iowa City, Iowa - 1973 - 1975
Bachelor in Science

University of Puerto Rico - Rio Piedras, P.R. 1963-1968
Bachelor in Business Administration

Past Research Experience

University of Iowa Hospital, Iowa City, Iowa. Internal Medicine Department. 1973-75 Part-time Research Assistant

University of Puerto Rico, Rio Piedras, Puerto Rico School of Medicine. 1968-69 Research Assistant - Interviews on Heart Research Survey.

Membership

American Student Dental Association

Research and Publication Committee - Department of Ecological Sciences
University of Puerto Rico, Rio Piedras, Puerto Rico

Publication

Christensen, J., and Torres, E.I.

Three Layers of the Opossum Stomach:
Responses to Nerve Stimulation, Gastroenterology, 69:641-48, 1975
important journal articles written may well be listed, but there is no need to fill several pages with a bibliography. The list can be labeled "Selected Publications," "Recent Publications," or "Pertinent Publications," whichever best fits the facts.

2. The Budget Section. Typical divisions of the tabular budget are personnel, equipment, materials and supplies, travel, and other costs. Other categories, of course, can be added as needed.

The budget section may require not only the tabular budget but also an explanation or "budget justification" if the budget is complicated or if all its details are not made completely clear by the text of the proposal. The need for consultants, for example, or the unavailability within the University of an item of equipment proposed for purchase may need to be explained.

The budget should make clear how the totals for each category of expense are reached. Salary information, for example, often needs to be specified in detail: principal investigator (1/2 time for 3 months at $24,000 [9-month appointment]) = $4,000. If salary totals involve two different rates (because of an anticipated increase in salary during the budget period), this should be made clear.

The List of References. This list is desirable only if the proposal contains six or more references. Otherwise, the references can be inserted in the text within parenthesis, like this (A.N.Author, "An Article," A Professional Journal, volume pages, year.)

If a list of references is to be included, it is placed at the end of the text proper and before the sections on personnel and budget. The items should be numbered and should be in the order in which they are first referred to in the text. In contrast to an alphabetical bibliography, authors' names in a list of references should be reversed.

In the text, references to the list can be made in various ways; a simple way is to use a raised number at the appropriate place, like this: 1 Such numbers should be placed outside any contiguous marks of punctuation.

The style of the bibliographical item itself depends on the disciplinary field of the proposal. Authors should consult a style guide for their particular field. The main consideration is consistency; whatever style is chosen should be followed scrupulously throughout.

The Appendices. Some writers are prone to append peripheral documents of various kinds to their proposals on the theory that the bulk will buttress their case. Reviewers almost never read such appendices, and may resent the padding. The best rule of thumb is: When in doubt, leave it out.

Apendices to proposals are occasionally used for project forms, letters of endorsement or promises of participation, biographical data sheets (when there are too many—say, eight or more—to be conveniently placed in the "personnel" section), and reprints of relevant articles.
If two or more appendices are included in a proposal, they should be designated Appendix A, Appendix B, etc.

A. Informed Consent

Those research projects which will involve human experimentation must include an informed consent form written according to institutional guidelines.

Informed consent is the agreement obtained from a subject, or from his authorized representative, to the subject's participation in an activity.

The basic elements of informed consent are:

1. A fair explanation of the procedures to be followed, including an identification of those which are experimental;
2. A description of the attendant discomforts and risks;
3. A description of the benefits to be expected;
4. A disclosure of appropriate alternative procedures that would be advantageous for the subject;
5. An offer to answer any inquiries concerning the procedures;
6. An instruction that the subject is free to withdraw his consent and discontinue participation in the project or activity at any time.

In addition, the agreement, written or oral, entered into by the subject, should include no exculpatory language through which the subject is made to waive, or to appear to waive, any of his legal rights, or to release the institution or its agents from liability for negligence.

Informed consent must be documented. Consent should be obtained, whenever practicable, from the subject's themselves. When the subject group will include individuals who are not legally or physically capable of giving informed consent, because of age, mental incapacity, or inability to communicate, the review committee should consider the validity of consent by next of kin, legal guardians, or by other qualified third parties representative of the subjects' interests.

Where an activity involves therapy, diagnosis, or management, and a professional/patient relationship exists, it is necessary "to recognize that each patient's mental and emotional condition is important....and that in discussing the element of risk, a certain amount of discretion must be employed consistent with full disclosure of fact necessary to any informed consent."

Where an activity does not involve therapy, diagnosis, or management, and a professional/subject rather than a professional/patient relationship exists, "the subject is entitled to a full and frank disclosure of all the facts, probabilities, and opinions which a reasonable man might be expected to consider before giving his consent."
Front Sheet

Title of Research Proposal -

Date Submitted -

Date Proposed Research will start -

Estimated Duration of Project -

Name Authors and their research functions

Name of Advisor

Whether project involves human experimentation or not

Check List -

Date Proposal approved -

Date Progress Reports -

Date Final Report approved -

Amount Total Budget -

Date Budget Approved -