

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ

*In the Name of Allah*

# ***HOW TO PREPARE AND WRITE A RESEARCH PROPOSAL?***

**Ali Meghdari, Ph.D., Professor**

**Email: [meghdari@sharif.edu](mailto:meghdari@sharif.edu)**

**Tel: (021) 6616-5541**

***School of Mechanical Engineering  
Sharif University of Technology  
Tehran, Iran***



Writing a proposal for a sponsored activity such as a Research Project is a problem of persuasion (Moteghaa'ed kardan). You should assume that your evaluator is a busy and impatient person who has no reason to give your proposal special consideration and who is faced with many more requests than he can support, or even read thoroughly.

Such a reader wants to find out quickly and easily the answers to the following questions:



- 1. What do you want to do, how much will it cost, and how much time will it take?***
- 2. How does the proposed project relate to the sponsor's background and interests?***
- 3. What difference will the project make to: your university, your discipline, your country, the world, or whatever the appropriate categories are?***
- 4. What has already been done in the area of your project? (background)***
- 5. How do you plan to do it?***
- 6. How will the results be evaluated?***
- 7. Why should you, rather than someone else, do this project?***

***These questions will be answered in different ways and receive different emphases depending on the nature of the proposed project and on the institution to which the proposal is being submitted.***



## **The Parts of a Research Proposal**

- **Title (or Cover) Page**
- **Abstract**
- **Table of Contents**
- **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**
- **List of References**
- **Personnel**
- **Budget**
- **The Appendices**



## The Title (or Cover) Page

Generally, the title page should include the following information:

- ❖ Tentative Title of the proposed research (not more than 10-12 words) (A good title is usually a compromise between conciseness and explicitness. Although titles should be comprehensive enough to indicate the nature of the proposed work, they should also be brief.)
- ❖ Full Name of the Principal Investigators
- ❖ Full Affiliations of the Principal Investigators
- ❖ Reference Number and Dates of submission
- ❖ The Name of Agency/Department the Proposal is being submitted. (if this is a *M.Sc. or Ph.D. Thesis Proposal*, you should indicate that here.)
- ❖ The proposed starting date, duration of research, budget period, and the total budget requested.



## The Abstract

- ❖ Every research proposal should have an abstract. Most referees rely on it initially to give them a quick overview of the main points in the proposal.
- ❖ Although 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
- ❖ To present the essential meaning of the proposal, the abstract should summarize the content, and certainly mention the major objectives of the project and the procedures to be followed in meeting these objectives.
- ❖ The abstract speaks for the proposal when it is separated from it, provides the reader with his first impression of the proposed work. Thus, it is the most important single element in the proposal.



## The Table of Contents

- ❖ **Very brief proposals with few sections ordinarily do not need a table of contents.**
- ❖ **Long and detailed proposals may require, in addition to a table of contents, a list of illustrations (or figures) and a list of tables.**
- ❖ **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.**





## The Introduction

- ❖ The introduction of a proposal should begin with a capsule statement of what is being proposed and then should proceed to introduce the subject to a stranger.
- ❖ The introduction should be comprehensible, and It should give enough background to enable one 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.
- ❖ You may also need to explain the underlying assumption of your research or the *hypotheses* you will be using.



## The Background Section

- ❖ A background and literature review of the subject must be performed.
- ❖ You should make it clear what the research problem is all about, and exactly what has been accomplished by you or others in the past in this field.
- ❖ You should provide evidence of your own background and competence in the field.
- ❖ Literature reviews should be selective and critical. You need to know the especially related works done by others and your evaluation of them.
- ❖ Discussions of work done by others should therefore lead to a clear impression of how you will be building upon what has already been done, and how your work differs from theirs.
- ❖ It is important to establish what is original in your approach, or what is unique about the proposed research.



## The Description of Proposed Research

This section, may need several subsections. It is the heart of the proposal and is the primary concern of the technical reviewers.

- ❖ Be realistic in designing the steps of your research work. The research plans should be scaled down to a more specific and more manageable project.
- ❖ Your proposal should distinguish clearly between long-range research goals and the short-range objectives.
- ❖ Begin this section with a series of explicit statements listing each objective, and split your proposal into several phases.

Phase 1: Developing an analytical method for....during the 1<sup>st</sup> six months.

Phase 2: Experimental verifications.....

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



## The Description of Proposed Research

- ❖ Be clear about the focus of the research, and defining the limits of the project.
- ❖ 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?
- ❖ For complex projects a calendar detailing the projected sequence and interrelationship of events often gives the sponsor assurance that the investigator is capable of careful step-by-step planning.
- ❖ 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.
- ❖ Be certain that the connection between the research objectives and the research method is evident.



## The Description of Relevant Institutional Resources

- ❖ The nature of this section depends on your project. In general this section details the resources available to the proposed project and, if possible, shows why the sponsor should wish to choose you for this particular research.
- ❖ Some relevant points may be you or your institution's demonstrated competence in the pertinent research area, its pool of experts in related areas that may indirectly benefit the project, its supportive services that will directly benefit the project, and its unique or unusual research facilities or instruments available to the project.



## References

- ❖ If a list of references is to be included, it is placed at the end of the full text and before the sections on personnel and budget.
- ❖ The reference items should be numbered and should be in the order in which they are first referred to in the text.
- ❖ The main consideration is consistency; whatever style is chosen should be followed throughout the proposal.



## 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.
- ❖ The Biographical data sheets or Resume should follow immediately after the explanatory text of the " personnel" section



## The Budget Section

The budget should be worked out with the appropriate tables and shall include the followings:

- ❖ **The Personnel salaries (Principal Investigators, Students, Employees, Technicians, etc)**
- ❖ **Cost estimates for Parts, Equipments, Tools, Fabrications**
- ❖ **Cost of Books, Publications, etc.**
- ❖ **Travel Costs to Conferences and Seminars**
- ❖ **Other costs**





## The Appendices

You may decide to append peripheral documents of various kinds to your Proposals. However, Appendices to proposals are occasionally used for 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.





# مفتشكريم