

## Proposal Writing

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"GUIDE FOR WRITING A FUNDING PROPOSAL"

by

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## What is a Proposal?

## Proposal

- A document that presents the case for
  1. An idea
  2. An action one takes to materialize the idea
- The proposal is a request for support to pursue the idea
  - Support the investigator financially so they can free their time to work on the idea
  - To provide support for other staff while working on the project
  - To provide support for equipment and supplies directly used to perform the research
  - To provide support for travel to attend technical meetings related to the research project

## Investigator

- Each proposal has at least one principal investigator (PI) and may include one or more co-principal investigator (co-PI).
- PI is the main person conducting the research
- Co-PI is the supporting researchers on the project

## Funding Agencies

- Foundations investing in future technologies and improving societal wellbeing
- Industry seeking solutions to their own manufacturing and business problems
- Industry seeking new products and technologies to maintain competitiveness in world market
- ....

## Why would anyone pay someone to do research?

- Almost all the comfort and technologies we enjoy today are the results of funded research
- The developed nations are rich mainly because of their investment in research and their effective technology transfer.
  - The main difference between underdeveloped and developed countries is the quality of research they support.
- Try living without things such as internet, vaccines, modern medicine, airplanes, televisions, automobiles, etc.

## Facts to Keep in Mind Before Writing a Proposal

### Fact 1: Reviewers

- Your proposal is often read by one or two experts in your field. However, the program manager, and perhaps other reviewers are not experts.
- **Remedy:**
  - You must write your proposal for their benefit too.

### Fact 2: Overwhelmed Managers

- The program managers and panel members often see a large number of proposals
- **Remedy:**
  - You have to grab your reader's attention from the beginning.

### Fact 3: Perfection

- Your proposal may not be perfect
- **Remedy:**
  - **Keep a humble attitude**
  - Ask people to suggest ways to improve your proposal. Don't be defensive
    - If they misunderstand what you were trying to say, rewrite it to clear the misunderstanding
    - If they don't immediately see the merit of your proposal, rewrite it until they do.

### Fact 4: First Page-First Impression

- It is safe to assume that many readers will get no further than the first page.
- **Remedy:**
  - Make sure that the first page is a good summary of the entire proposal.
  - Don't fill it up with technical background.
  - Instead, address the following:
    - what you want to do
    - whether the idea is new
    - why it is important
    - why the proposed solution is sound
    - why you should succeed
    - how much it will cost
    - ... ..

What are the Reviewers Looking for in a Good Proposal?

### Technical Criteria

- The proposal should articulate a new idea
- The proposal should address a well-formulated problem
- The proposed work should be research, not just a routine application of known techniques
- The problem should be important to the society

### Technical Criteria

- The scale of the problem is large enough to require a special funding to solve it
  - if the problem can be solve quickly, or could be solved using the normal resources of a well-found laboratory, it is not a good proposal

### Technical Criteria

- The proposal must explain the idea in sufficient detail to convince the reader that the idea has some substance
  - The proposal should explain why there is reason to believe that it is indeed a good idea.
  - It is a mistake to merely identify a wish-list of desirable goals (a very common fault). There must be significant technical substance to the proposal.

### Technical Criteria

- The proposal must explain clearly what work will be done
  - What results are expected
  - How they will be evaluated
  - How would it be possible to judge whether the work was successful
- The PIs much show evidence that they know about the work that others have done on the problem
- The PIs should have a good track record, both of doing good research and of publishing it
  - A representative selection of relevant publications by the PIs should be cited.
  - Consistent failure to publish raises questions.
  - Absence of a track record is not necessarily damaging for young researchers

### Non-technical Criteria

- A PI with little existing research money could 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.

### Non-technical Criteria

- Evidence of industrial interest in the proposed work is an indication for potential success.
  - Especially if the research is expected to produce a product
    - should usually include some industrial contribution to the project.
  - The case for support should include some marketing ideas
    - some thoughts about how the research will eventually become a product
    - identifying an industrial partner
- Among the best proposals are the ones that address technology foresight of well established national entities.
  - including supporting quotes in your proposal

## Common Mistakes

## Common Mistakes

- The proposal is vague in key areas
  - The question addressed by the proposal
  - The outcome of the research
  - The measure of success or failure
  - The contribution to human knowledge
- The proposal lacks evidence of clear thinking
  - The formulation of the problem is poor
  - The planned solution is unclear or illogical

## Common Mistakes

- The proposal doesn't address the importance of the problem being addressed
- The proposal is just a routine application of known techniques
  - The research funding agencies prefer sponsoring research instead of development works
  - Industry or venture capital are expected to fund development work
    - *If no industry is interested then the question of the proposal has no commercial value.*

## Common Mistakes

- Other researchers have addressed the same problem and failed
  - There is no evidence that the PIs will succeed this time.
  - The goals must be substantiated by solid evidence of potential success
- The proposal is written in such a way that gives the impression of "*give us the money and we will figure out how to do the work*"
  - Clearly state all of your ideas
  - Describe your preliminary work that shows evidence that the idea is good.
- The proposal is heavy on showing off your good track record
  - Include a relevant list of publications in the appendix.

## Common Mistakes

- Sufficient technical details of the idea are not given
  - The reviewers are underwhelmed
- The proposal is comprehensible to only expert in the field.
  - Some of the evaluators are not experts in all areas of the proposal.
  - A good proposal should be comprehensible to non-experts, while also convincing experts that you know your subject.
  - Keep highly-technical material in specially marketed section
  - Avoid highly technical material in the introduction

## Common Mistakes

- The proposal did not address related research, even if you are dismissing it
  - The reviewers will think that the PIs are unaware of the state-of-the-art
  - A common mistake is to give references only to your own work
- The proposed research appears to have been done.
  - competitor solutions must be discussed and their inadequacies identified.
- The PIs seem to be attempting too much for the funding requested and project time.
  - It is perceived as a lack of realism, poor understanding of the problem, or poor research methodology.

## Common Mistakes

- The proposal is too expensive for the probable gain.
  - Expensive proposals are more likely to be rejected.
- The proposal sounds like it might be done by a graduate student on the departmental computer.
  - These type of works should be funded by own institutions.
  - If the research institutions are not adequate, then this is taken to be a weak points against the PIs and the institution.

## Quiz

- Mention 5 technical criteria for a well written proposal
- Mention 4 non-technical criteria for a well written proposal
- Mention 5 mistakes you should avoid

## Main Parts of a Proposal

## Main Parts of a Proposal

1. **TITLE**
2. **PROJECT OVERVIEW**
3. **BACKGROUND INFORMATION/STATEMENT OF THE PROBLEM**
4. **PROJECT DETAIL**
  - Goals & Objectives
  - Clientele
  - Methods
  - Staff/Administration
5. **AVAILABLE RESOURCES/NEEDED RESOURCES**
  - Personnel
  - Facilities
  - Equipment/Supplies/Communication
  - Budget
6. **EVALUATION PLAN**
7. **APPENDICES**

## Title/Cover Page

- Funding agencies often have specifications for the Title Page
  - Signatures of key people in your organization such as the Department chair, Dean, and Contracts Officer
  - Collaborators from other organizations should be identified names on the Title/Cover Page
- Your cover page should look professional and neat.
  - However, fancy report covers and expensive binding may send the wrong message that you do things rather expensively!
- The title should be clear and unambiguous (do not make it cute)
- The best titles are the ones that reads like micro abstracts.

## Title/Cover Page

- The title should gives a quick image of the key ideas of your proposal
  - The words used in your title should clearly reflect the focus of your proposal.
  - The most important words should come first, then the less important words.
  - Remove words that are not necessary for understanding the merit of the proposal
  - Major word in the title should be in capital letters.
  - Try and use only a single sentence for your title.
    - Two part title can be used if a single sentence is not possible.
    - The two parts should be separated by a colon (use only as a last resort!)

## Titles: Example

### Example 1: Arrangement of the title

- Title 1 – **Neural Networks and their use for Power Grid Stability**
- **Analysis of Title 1:**
  - The focus is on Neural Network
  - Too many words connecting the two main clauses
- Title 2 – **Power Grid Stability using Neural Networks**
- **Analysis of Title 2:**
  - The focus is on Power Grid Stability
  - Less words are used to connect the two main clauses
- **Main Lessons:**
  - Arrange the title so that the clause with the main idea is written before the others
  - Remove words from your title that really are not necessary for understanding the project ideas.

## Titles: Example

### Example 2: Simplicity

Title 1 – **Observing the Ocean Intrinsic Actions by Local Initiative to Create a Cable-based Underwater Power System**

Title 2 - **Power System for Ocean Observatories**

Analysis:

- Title 1 is too complex with unnecessary clauses
- Title 2 is as informative as Title 1

## Project Overview

- The Project Overview should be an Executive Summary of the ideas
  - **Executives** are busy and they often have enough time to read just the overview
- The Project Overview should be specific and concise.
  - Detail should be clarified at a later point in your proposal.
- The Project Overview should give the correct information on your proposal in the mind of the **reader, not the writer**

## Project Overview

- The Project Overview is the framework of the rest of the proposal
- The Project Overview should show your knowledge of the funding agency.
  - Your research project should address key concerns of the funding organization (community benefit, national strategic directions, etc.)
  - If you are collaborating with other organizations, their interests should also be highlighted in the Project Overview.

## Project Overview

- The Project Overview should be written after you have completed the entire proposal.
  - Only then you understand all aspects of your proposal
- The Project Overview form a strong impression on your ideas. Do not give any of the following negative impressions:
  - Idea is not original
  - Proposal is unfocused
  - Rationale is weak
  - Writing is vague
  - Uncertain outcomes
  - Does not have relevant experience
  - Problem is not important
  - Project is too large for the PIs
  - ....

## Project Overview: Exercise

- Using the attached Proposal, identify the main elements of the Overview.
- Is the overview sufficiently informative?
- What are missing?

### Background Information/Statement of the Problem

- It is a review of relevant previous work
  - Cite previous work similar to what you are proposing.
  - Show that you know what you are proposing because you are knowledgeable of the-state-of-the-art.
- Show how your project
  - extends the previous work
  - avoids the mistakes or shortcomings of earlier work
  - is unique
- Be careful in your use of language. Minimizes the use of
  - Jargons
  - Confusing language
  - Trendy words
  - Abbreviations
  - Colloquial expressions
  - Redundant phrase

### Background Information/Statement of the Problem

- Show that your proposed work is definitely needed and should be funded
  - You will need to substantiate your claims
- You should address the following questions
  - What are the pressing problems that you want to address?
  - How do you know these problems are important?
  - What other sources/programs similarly consider these needs as major?
- Check to see that the potential funding agency is committed to the same problems that your proposal is addressing

### Background Information/Statement of the Problem

- Show how the problems you are addressing will help the potential funding agency in fulfilling their own goals and objectives.
  - As you write, keep the funding agency in your mind as a "cooperating partner" committed to the same concerns that you are.
- Show any special reason that your organization is uniquely suited to conduct the project
  - Geographic location, expertise, prior involvements in this area, close relationship to the project clientele, etc.

### Background Information/Statement of the Problem

- In the following sections of the proposal, it is important to refer back to the needs you've identified in this section
  - show how your methods will respond to these needs.
- It is advantageous to show that you have already taken some small steps to begin your project
  - An excellent small step that can occur prior to requesting funding is a need assessment that you conduct (survey, interviews, focus groups, etc.).
  - Write up your need assessment as a short report, cite the report in your proposal, and include a copy with the proposal.

### Background Information/Statement of the Problem: Exercise

- Using the attached proposal, identify the main elements in the background section.
- Is the background section sufficiently informative?
- State any idea to improve on the background section?

### Projects Details: Goals and Objectives

- **Goals** are the large statements of what you hope to accomplish
  - usually aren't very measurable
  - create the setting for what you are proposing.
- **Objectives** are operational
  - gives specific things you will be accomplishing in your project
  - are measurable.
  - form the basis for the activates of your project
  - serve as the basis for the evaluation of your project

## Projects Details: Goals and Objectives

- Try and differentiate between your goals and your objectives - and include both.
- Present measurable objectives for your project
  - If you are dealing with engineering problems, it is easier for the objectives to be measured
  - Abstract ideas are hard to measure.
- Show that there is considerable overlap between the goals and objectives for your proposal and the goals and objectives of the funding organization.
  - If there is not a strong overlap, find another funding agency

## Projects Details: Examples of Goals and Objectives

- **Goal:**
  - To build underwater observatory
- **Objectives:**
  - Build underwater power network
  - Feed the power network from two shore stations
  - Provide interface between power network and science equipment

## Goals and Objectives: Exercise

- Identify the goals and objectives in the attached proposal.
- Identify the weaknesses and strength in the text and provide your own opinion on how to improve on it.

## Projects Details: Clientele

- Identify your clientele (beneficiaries of your work)
  - Who are they?
  - Who is included in the clientele group?
- Show your relationship with the clientele group
- Show that you have the support of the clientele group to move ahead with the project
- If members of the clientele group were involved in the preparation of the proposal, state that
- Show why it is important for the funding agency to be supportive of your clientele.
  - How assisting your clientele is in the best interests of the funding agency.

## Projects Details: Methods

- There should be a very clear link between the methods you describe in this section and the objectives you have previously defined.
  - Be explicit and state exactly how the methods you have chosen will fulfill your project's objectives
- The funding agency will examine your methods looking for
  - what is new in your proposal
  - what is unique or innovative.
  - the importance of the proposed method to the solution
- Clearly indicate how the methods allow the outcomes of your project to have value beyond your own project.

## Projects Details : Exercise

- What are the weaknesses and strength of the project details in the attached proposal?

### Projects Details: Staff/Administration

- Describe the roles of the different people associated with your project and the importance of each.
  - The validity for what you are proposing is directly related to the people who will work with the project.
  - how each of the roles are essential to the success of the project
- So what do you say about your key people?
  - Include their name, title, experience, and qualifications.
  - The descriptions of your personnel should let the funding agency know that you have excellent people who are committed to the project.
- Funding agencies often like to see team work

### Projects Details: Staff/Administration

- If you will be using a Steering Committee (Advisory Committee, Governing Board, etc.) to assist in your project, describe how it will be organized and who will be included
  - A Steering Committee can be politically very helpful to you and your project.
  - You can enlist the support of a variety of other agencies/organizations by placing a representative of these agencies/organizations on your Steering Committee.
  - Define the length of service for the members of the Steering Committee to minimize the length of service of someone who may not be helpful!
  - A viable Steering Committee can suggest to a funding agency that
    - the project has strong links to the community
    - the project has a good chance of continuing after the funding period is over

### Staff : Exercise

- Evaluate the staff section in the attached proposal.

### Available Resources

- Collaborative efforts are considered very favorably!
  - Many funding agencies like to see cooperative ventures as the basis for community interest.
  - Project funding is coming from different sources which minimizes the risk taken by any one agency
  - Local resources could be hidden (in-kind)
    - time that volunteers donate to your project
    - materials that local merchants may provide
    - local experts who can provide help/advise when needed
    - a friend who is willing to do some word processing, etc.
  - in-kind resources can show the funding agency that you are strongly rooted in your community.

### Available Resources

- It is very impressive to the funding agency if local resources have already been contacted and plans to include them in the project have already been made.
  - Letters from local resources supporting the project (included in the Appendix) are an excellent addition to the proposal.

### Available Resources

- Provide a brief description of the facilities that will be used for the project.
  - Lab space
  - Equipment
  - Technical support
- Consider describing existing facilities as in-kind contributions to the project.
  - free access to classrooms
  - meeting space at a libraries
  - project room in a local office building
- It can be helpful to indicate how much additional money the funding agency would have to provide if these facilities were not donated

### Available Resources : **Exercise**

- Evaluate the available resources in the attached proposal.

### Needed Resources: **Personnel**

- Identify the people who will be paid from the grant
  - Include short descriptions of each of them
  - Make sure that the people are ideally suited to conduct the research
- Instead of having all full-time staff on the project, consider having a number of part-time staff
  - especially if the part-time staff currently work with other cooperating organizations.
- Make sure you notify people who you identify in your Personnel section and receive their approval **before** you send in your proposal.

### Needed Resources: **Facilities**

- Identify any facility that you need for the project
- Show why it is not reasonable to assume that these facilities should exist in your research institute
- Justify the cost of the new facilities
  - Long term use
  - Broader use
  - Cost centers
  - .....

### Needed Resources: **Equipment/Supplies/Communication**

- List the equipment needed for your project.
  - Be aware that funding agencies are usually much more willing to provide funds for the support of personnel than they are to support the purchase of equipment
- Types of equipment that may be needed for a funded project:
  - computer/monitor/printer (for general project support)
  - tape recorder (for recording interviews, dictating reports, etc.)
  - video cassette recorder and television monitor (for recording project activities, documenting change, etc.)
  - desks/chairs/tables
  - telephone conferencing equipment
  - photocopy machine

### Needed Resources: **Equipment/Supplies/Communication**

- Whatever you purchase on the project, should be solely used in the project
- Find the actual cost of the equipment you need.
  - Guessing the cost can be challenged by the funding agency
- Be sure to include supplies such as stationery, postage, word processing software, and pencils/pens
- Coffee, cups, cakes or other "supplies" for morning and afternoon breaks are usually not funded

### Needed Resources: **Equipment/Supplies/Communication**

- Cost of sharing information with others should be included.
  - Newsletter, website, video conferencing, workshops, etc.
- **The more open you are and willing to help others learn from your experiences the more likely a funding agency will be interested in your proposal.**
  - Hosting some form of workshop on the area of research is a good way to publicly recognize your funding organization.
  - Invite someone from the funding organization to attend the workshop so they can hear what others think about the investment they have made.

## Needed Resources : **Exercise**

- Evaluate the needed resources in the attached proposal

## Evaluation Plan

- Describe how you will decide whether or not your project has been successful and has achieved its objectives
- The Evaluation Plan will tell the prospective funding agency how you will be going about showing them at the end of the project that their investment in you was a good one.
- If you plan to use a survey or questionnaire to help in evaluating the success of your project, you may want to include in the Appendices a draft of what you are considering for the questionnaire/survey.

## Evaluation Plan

- Include **formative evaluation** and **summative evaluation**
  - **Formative evaluation:** feedback on the project while it is being conducted
  - **Summative evaluation:** whether the project fulfilled its proposed objectives

## Evaluation Plan

- Create a summative evaluation plan if you have done a good job of clearly stating your project objectives or expected outcomes.
  - Make direct reference to your objectives in your evaluation plan.
  - The reader of your proposal will now be hearing the same message repeated in different sections of your proposal
- A good evaluation plan should include some sense for what goes on following the conclusion of the funding period.
  - How will the initiatives that have been started under the project be sustained?
  - Have new things occurred that will be continued in the future?
  - How will other cooperating agencies assist in continuing the project after the conclusion of the funding period?

## Evaluation Plan : **Exercise**

- Access the evaluation plan of the attached proposal

## Needed Resources: **Budget**

- Make your budget **realistic**.
  - Request what you exactly need to carry out the project
  - Funding agencies can easily tell when someone has inflated a budget
- Have a fiscal specialist in your organization review your budget to see how realistic you are.

### Needed Resources: **Budget**

- Phase-up the project
  - It is not realistic to expect a new project to spend large amounts of money during the first 6 months of operation
  - Ask for a small amount of funding for the first phase of the project
    - Specify in your proposal what you expect to achieve during this "minimal funding" phase
    - Return to the funding agency and ask for funds for the next phase.
      - The funding agency will be able to assess your success
      - It is essential for you to make sure the first phase **IS** successful

### Needed Resources: **Budget**

- Check with the agency to see if they have suggested/required budget categories that they want you to use
- If the potential funding agency doesn't have any budget requirements, organize your budget around a set of meaningful categories that work for the project you are proposing.

### Needed Resources: **Budget**

- Categories that you may want to consider for itemizing your budget are:
  - Personnel (salary and benefits)
  - Consultants (salary)
  - Equipment
  - Supplies
  - Materials preparation
  - Travel
  - Rental of facilities
  - Evaluation
  - Other expenses
  - Indirect costs (costs that your organization requires that you include)

### Needed Resources: **Budget**

	Year 1	Year 2	Year 3
<b>PERSONNEL</b>	.	.	.
Person #1	.	.	.
Person #1	.	.	.
Person #3	.	.	.
<b>Sub-Total</b>	.	.	.
<b>SUM TOTAL</b>			.

### Needed Resources: **Budget**

	Year 1	Year 2	Year 3
<b>FACILITIES</b> (list)	.	.	.
<b>Sub-Total</b>	.	.	.
<b>EQUIPMENT</b> (list)	.	.	.
<b>Sub-Total</b>	.	.	.
<b>SUPPLIES</b> (list)	.	.	.
<b>Sub-Total</b>	.	.	.

### Needed Resources: **Budget**

	Year 1	Year 2	Year 3
<b>COMMUNICATION</b> (list)	.	.	.
Telephone	.	.	.
Postage	.	.	.
<b>Sub-Total</b>	.	.	.
<b>TRAVEL</b> (list)	.	.	.
Fuel	.	.	.
Vehicle Rental	.	.	.
Rail Tickets	.	.	.
<b>Sub-Total</b>	.	.	.
.	Year 1	Year 2	Year 3
<b>TOTAL</b>	.	.	.
<b>SUM TOTAL</b>			.

## Budget : Exercise

- Write a budget for a project with a total amount not exceeding LE150,000.

## Appendices

- Appendices should be devoted to those aspects of your project that are of secondary interest to the reader.
- Examples of Appendices Items:
  - **Dissemination Plan** - An important aspect of your proposal is your plan for disseminating information *of/from* the project to others
  - **Time Line** - A clear indication of the time frame for the project and the times when each aspect of the project will be implemented. Try creating the time line as a graphic representation
  - **Letters of Support** - Funding agencies would like to know that others feel strongly enough about your project that they are willing to write a letter in support of the project.
    - Do not write the letters for the agencies - they will all sound alike and will probably defeat your purpose of using them.
    - The letters must be substantive. If not, do not use them!
    - Have the letters addressed directly to the funding agency. (Do not use a general "To Whom It May Concern" letter

## Appendices

- Examples of Appendices Items:
  - **Cooperating Agency Descriptions** –
    - Provide a more detailed description of each of these agencies
    - Give the name/address of the agency, names of key personnel, and brief descriptions of the major services provided is sufficient.
  - **Evaluation Instrument** - Include a draft copy of the actual evaluation instrument you plan to use (survey, questionnaire, interview guide, etc.).
    - Indicate DRAFT at the top of the instrument and then make it look as real as possible.
    - Never say things like, "I think I may have a question that deals with...", or "Four or five questions will be included that examine the concern of...".
    - If you will be using an interview procedure or a focus group discussion, include a draft copy of the specific questions that will actually be used for the interview/discussion.