Proposal Writing

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Material in the following sections are obtained and modified from
"GUIDE FOR WRITING A FUNDING PROPOSAL" by
S. Joseph Levine
Michigan State University
http://www.LearnerAssociates.net

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

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.

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
• … …
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

- 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

- 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

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.

**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

- 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.

- 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 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.
- 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.

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**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.

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**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
  - ... ...

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**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

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**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.

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**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

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**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.

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**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

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**Evaluation Plan: Exercise**

- Access the evaluation plan of the attached proposal

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**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?

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**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

- 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.

- 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)

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**Budget: Exercise**

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

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**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)

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**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.