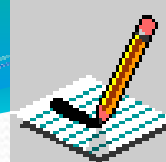


How to Write a Research Proposal

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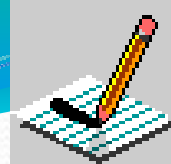
Why a research proposal ?

- Generate funds to sustain the research project and unit.
- Convince others the project you have designed is important, worth the effort.

- ✓ What you plan to accomplish
- ✓ Why you want to do it and
- ✓ How you are going to do it



- Convince others that you have the ability to carry out the research design and report the findings.



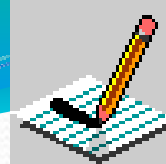
Getting started

- **Know your subject:** up-to-date knowledge of the research area.
- **Know your funder:** the priorities and interests of the funder you approach.
Fundors are unlikely to support the same idea twice.
- **Consult your colleagues:** Don't be afraid to discuss your proposal with colleagues. Early discussions can ensure that your proposal is targeted appropriately.



Be prepared for

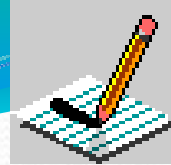
- To make mistakes and to learn.
- To write and rewrite many times.
- To spend many hours looking for information.
- To have your writing criticized.
- To feel confuse and hopeless some times.



What makes a good proposal ?

- A well-prepared application should require **minimal effort on the part of the reviewer.**
- Demonstrate **high scientific quality.**
- Show the **gap** in scientific literature that you want to fill out and why there is the **need.**
- **Cost-effectiveness:** the requested funds must be in proportion to the proposed project.

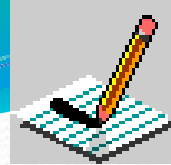
Allow plenty of time to prepare your proposal.



Important for writing



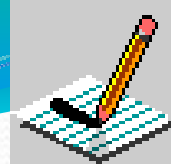
- Structure your work in advance;
- Know that you want to say before writing;
- Each sentence = one idea only;
- Logical chain of ideas;
- Write in a way that is easy to read;
- Simple language;
- Check spelling and grammar;
- Do not cut and paste from articles.



Before You Write

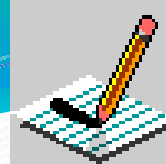
- **Think....don't write...**
- Start with a novel strong idea





Before You Write

- Think....don't write...
- Start with a novel strong idea
- **Begin writing only when you can summarize what you want to do in one sentence**
(Single thought per sentence).



Writing the Proposal

- Background
- Specific Aims
- Methods
- Preliminary Results
- Expected Results
- Significance and Innovation
- Conclusions and Feasibility
- Budget/Estimated cost
- Abstract/Title



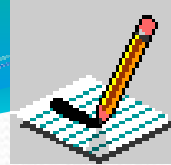
Background



...is format and **detailed statement of intent** of the researcher
...**presents and justifies** a plan of action and shows the investigation plan

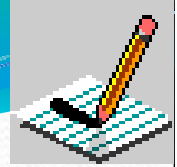
- You need to provide a brief but appropriate **historical and contemporary backdrop** in which your proposed research question occupies the central stage (Selective, update and critical evaluation of literature).
- Demonstrate **your knowledge** of the topic and its importance.
- Discuss any relevant **controversies** and **gap to be filled**.

- CREATE THE PROBLEM and HYPOTHESIS !!!



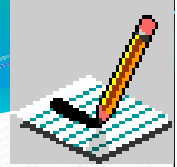
Specific Aims

- **What is the goal of this project?** It's to fill that gap in knowledge you identified and why do you need to fill this gap!
 - Realistic and contextual/consistent to the background
 - Concise, focused, clear-cut
 - self-explanatory
 - Distinctive, quantifiable, measurable
- AVOID INTERLINK OF AIMS (to be independent)



Methods

- Describe **how** you will carry out the research;
- It will **provide your work plan** and describe the **activities** necessary for the completion of your project:
 - ✓ Approach and Data needs (sampling techniques, inclusion and exclusion criteria, measurement instruments)
 - ✓ Analytic techniques (Data collection procedures, Data analysis process)
- Method section should contain sufficient information for the reader to determine whether methodology is **sound**.
- **INNOVATION**
- **FEASIBILITY**



Methods

- Must **relate closely to your specific aims**
- Include **details** for specific methodology: never assume that the reviewer knows the technique!
- Demonstrate **your knowledge on the methods** you used and explain how they benefit your research.
- If your own experience of a methodology is limited, consider working with collaborators.
- Explain **why** the chosen method is the best to accomplish your goals (knowledge of alternative methods).

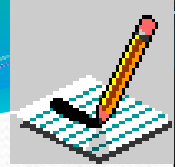
- Troubleshoot: How will you avoid or handle potential problems?
Alternatives? **WIN-WIN EXPERIMENT**

Even your method does not reach the aim you can use the obtained result for other aim and plan an alternative method.

Statistical Tests

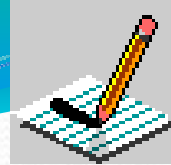


- You need to have some idea about **what kind of data** you will collect, and **what statistical procedures** will be used in order to answer your research question.
- Ensure that the overall strategy, methods, and analyses are **well-reasoned** and **appropriate** to accomplish the aims.
- Statistical strategy: **justify** use of specific analytic techniques, power analysis.
- Discuss potential problems and alternative strategies!



Preliminary Results

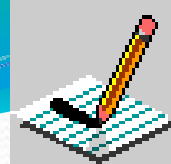
- Provide **sufficient preliminary data**, that derive from your preliminary work/experience on the topic.
 - Establish **your (and your team's) competence & expertise**
 - They support your hypotheses
 - Include figures (and/or tables) BUT do not overdo!
- AVOID FIGURES CLOSELY RELATED TO THE USE OF COLORS



Expected Results

- It is suggested that you have **some idea** about the results.
- Explain how you plan to interpret the different results even in the case that not work

- **PROBLEMS and PITFALLS: all experiments have problems!**
Explain and describe alternatives to use.
- If an expected result does not happen what do you do?

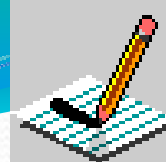


Significance and Innovation

- **3 QUESTIONS:**
- What is the help to the advancement of scientific knowledge?
- How, when, and how much this project will return to public health?
- As my project will help the development in technology?

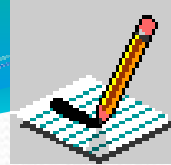


Discuss the **potential impact** of your results. Readers will want to know the **benefits** and possible drawbacks of your research.



Conclusions or Feasibility

- It is important to **convince your reader of the potential impact** of your proposed research.
- Communicate a sense of **enthusiasm and confidence** without exaggerating.
- Mention the **limitations and weaknesses** of the proposed research.
- Demonstrate how **your institution(s) will support** the proposed program.
- Demonstrate that there is **adequate equipment**, space, and support staff to conduct the research.



Budget/Estimated cost

- **Detailed Cost built up** – resource personnel, support staff, stationery, transport, utilities, house rents, miscellaneous, etc
- Budgets should be **realistic** in terms of the work to be completed, level of effort, and methodology.

Key point: Justify everything!



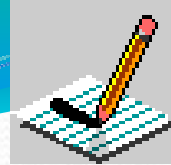


Abstract

- It is a brief and clear summary of your research question, the hypothesis, the used methods and the main findings.

● THE MOST IMPORTANT PART!

- TIP: Ask a colleague to read your abstract: if the abstract is well written they should be able to understand the essence of the project from the abstract alone!



Title

- It should be concise and clear as possible.
- Think of an informative **but catchy title!**
- ✓ Reflect the theme of the research
- ✓ Be self-explanatory
- ✓ Be brief
- ✓ Language be simple and unambiguous
- ✓ Be specific to a particular domain
- ✓ Bracket; arithmetic figures, etc be avoided
- ✓ Avoid confusing meaning
- An effective title not only pricks the reader's interest, but also predisposes him/her favorably towards the proposal.





Writing Timeline

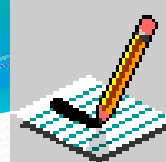
- Create a writing timeline of the assigned tasks/aims
- **Be realistic** with the deadline of each milestones!
- Are you teaching? Editing? Mentoring graduate students?

General Advice about Grant Writing



I'll finish all of this today and then write the whole grant proposal tomorrow.

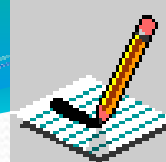
Keep time to write but also to **edit** your proposal!



General Advice about Grant Writing

- Much of grant writing is simply good writing
 - CLEAR simple, direct language (avoid jargon)
 - CONNECTED
 - CONCISE
 - CORRECT
- Read the Funding Opportunity Announcement **carefully!** Each Institute/Center has specific instructions for program project & center grants. So you need to know if your proposal is appropriate.



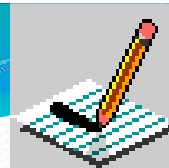


Be clear

- Define abbreviations.
- Use transitions from paragraph to paragraph and section to section.
- Read, read and read a lot of time your proposal and rewrite ambiguous sentences.

Bad: Prior to leaving the hospital, the nurse will review each prescribed medication. [sounds like the nurse is leaving]

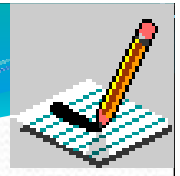
Good: Prior to patient discharge, the floor nurse will review each prescribed medication.



Be correct (in content & details)

- Pay attention on the **instructions** (formatting, page limits, font, margins)
- Keep always time to:
- Proofread – eliminate typos, grammatical errors, etc.
- Proofread again...and again

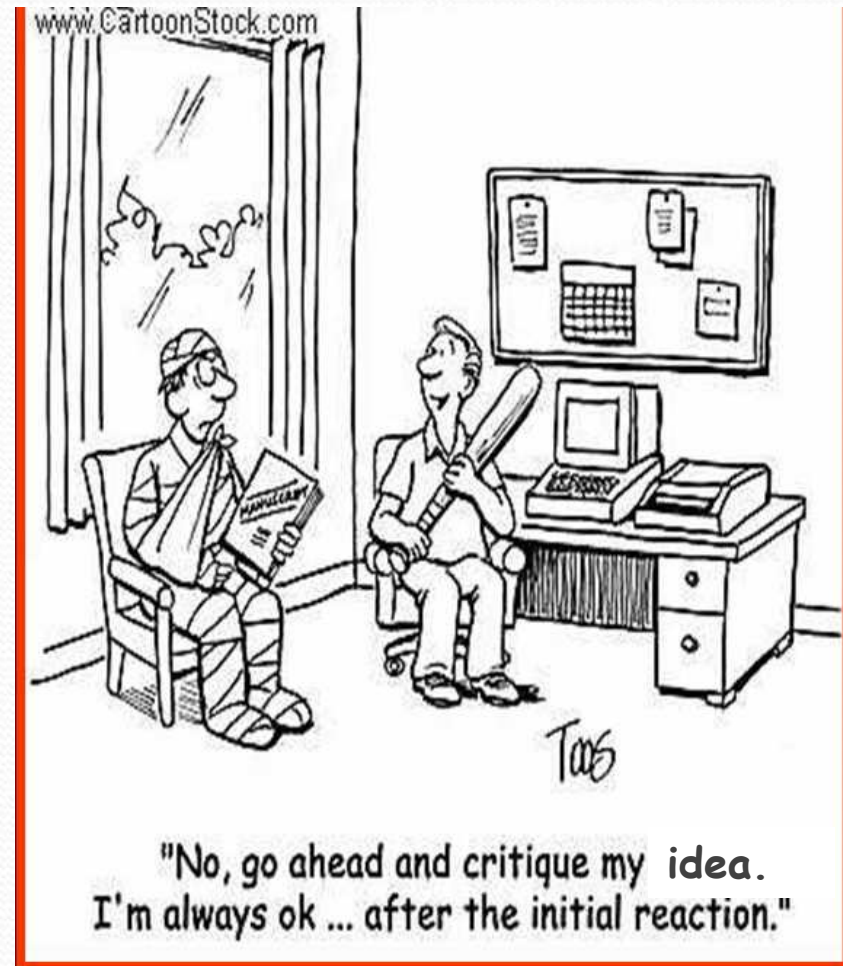




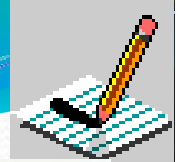
Solicit Comments

- Colleagues (2)
- Revise

- Anticipate reviewers' comments



Common Mistakes

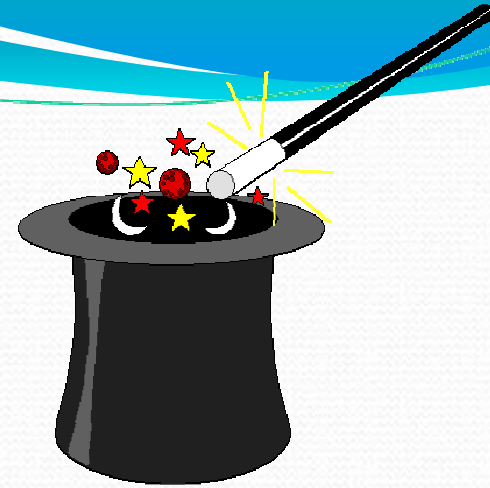


- Because much of this text has been collected from previously submitted proposals, it must be updated and customized for your particular proposal!

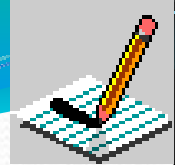
- NOT RECYCLE THE PROPOSALS !

- Consult the funders website and read clearly the call for research proposals and guidelines as well as the criteria against which your proposal will be judged.

Tips and Tricks



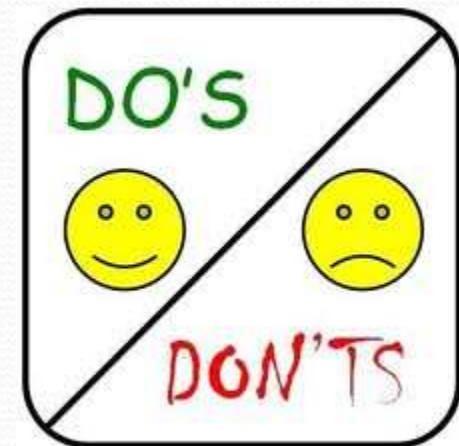
- Read, read and read
- Talk to supervisors, experts, fellows
- Anticipate questions that may arise, before they arise
- Be sure to thoroughly understand the structure and functions of each part of your research paper proposal.
- Be **confident** in your potential results to improve the credibility of your paper
- Be enthusiastic about your idea – if you don't sound interested, why should anyone else be?

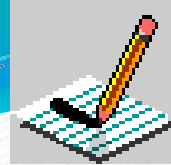


DOs and DO NOTs

- **DO:**

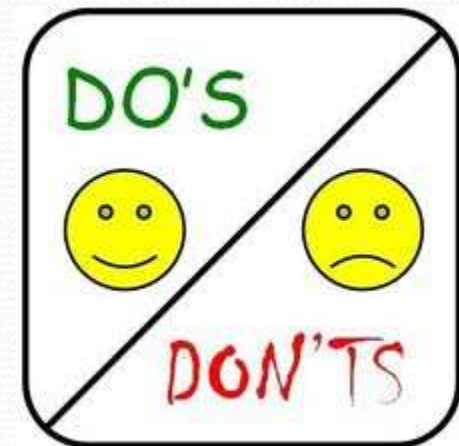
- ✓ Produce a **professional looking proposal**
- ✓ Make it interesting
- ✓ Make it informative, meaningful
- ✓ Write easy way to read
- ✓ Be concise, precise
- ✓ Check spelling, grammar
- ✓ Present in accurate/acceptable format
- ✓ Demonstrate an up-to-date knowledge of your field
- ✓ **Read your work loud:** a sentence that is difficult to say will be difficult to read!

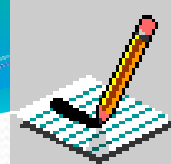




DOs and DO NOTs

- **DO NOTs:**
 - ✓ Use words which you do not understand
 - ✓ Use pretentious language, unnecessary jargon, and double speak by cutting down every unnecessary word.



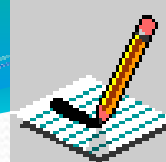


The review process

- Expert assessment: Traditionally applications will be assessed by 2 to 3 reviewers from the pool of experts.
- Reviewers will make an independent assessment of the scientific quality of the proposal: least 2 of the 3 reviewers should provide a positive assessment.

- What are reviewers looking for ?
 - – High scientific quality;
 - – Proposals that meet the funder's priorities or fill a knowledge gap;
 - – Novelty;
 - – Value for money;

- – An interesting idea – catch their attention!



What next ?

- If the project is retained for funding → OK!
- If invited for resubmission → revise proposal feedback from the reviewers panel.

- If rejected



Can be very frustrating → do not give up, try to get feedback
→ remember it is a learning process !

It will be better next time!



Thank you!