

# Writing a Grant Proposal

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# Proposal Content

All proposals must address the following key questions:

- (i) what do you want to do?
- (ii) why do you want to do it?
- (iii) how are you going to do it?

...and should mention:

- (iv) why it will succeed
- (v) how much it will cost

# Proposal Content

The proposal needs to convince the reviewers that:

- (i) you have an important research idea
- (ii) you have a good grasp of the relevant literature in your field, or current developments, etc.
- (iii) your proposed methodology is sound
- (iv) there is a good chance of a successful outcome

# Proposal Content

The success of a proposal depends not just on the quality of the proposed project, but also on the quality of your proposal writing

- good proposals are often rejected because they are badly written
- ensure your writing is coherent, clear and compelling

# Criteria for a Good Grant Proposal

- Does the proposal address a well-formulated problem?
- Is it a research problem, or just a routine application of known techniques?
- Is it important, whose solution will have useful effects?
- Is special funding necessary (or could it be done using standard lab equipment....) ?
- Does the applicant have a good idea on which to base their work? If so, you must convince the reviewers that it IS a good idea, include technical details. Cannot simply identify a 'wish-list' of desirable goals.

# Criteria for a Good Grant Proposal

- Does the proposal explain clearly what work will be done? What results are expected, how will they be evaluated?
- Is there evidence that the applicant knows about the work others have done in the area? e.g. a short literature review with representative references.

# Content of Proposal

- Summary (...sometimes requested....)
- Introduction
- Overview of previous work in the area
- Explanation of work you plan to do, proposed methodology
- Itemised budget, including justification
- Timetable outlining how you plan to accomplish the work
- Reference list

Typically accompanied by:

- CV of applicant (plus any collaborators, etc.)
- Letters of support from Head of Dept / Research office, etc.

# Title

- Concise and descriptive
- May help if its 'catchy'

# Abstract

- Usually between 200-300 words long
- Written for lay and/or expert audience
- Typically includes:
  - The research question in the first sentence
  - The rationale for the study – why its interesting / useful
  - The hypothesis (if any)
  - The proposed methodology



# Introduction

- Provides the necessary background and/or context for the research question
- This can often be the hardest part to get right
  - If it's a long, rambling intro, the research question may appear trivial and uninteresting
  - If placed in the context of a very focussed and current research area, its significance will become evident
- No hard-and-fast rules for writing this, depends on an individual's creativity, writing ability, clarity of thought, and depth of understanding of the subject area

# Introduction

## Outline:

- State the research problem a.k.a. the purpose of the study
- What recent or current developments are there in the field?  
Need to put your project in this context....
- What is new about the project (why is it worth doing)?
- To what extent does it build on previous work by you or others?
- Briefly describe the major issues and sub-problems to be addressed by your research
- Identify 'key players' and only refer to the most relevant and representative publications in your area

# Literature Review

Sometimes included in Introduction, but may also appear as a separate section:

- Ensures that your research is novel, i.e. you're not simply 'reinventing the wheel'
- Acknowledges work already carried out in the area by other individuals or research groups
- Demonstrates your knowledge of the research problem and understanding of the theoretical and research issues related to your research question
- Shows your ability to critically evaluate relevant literature information
- Indicates your ability to integrate and synthesize the existing literature
- Convinces your reader that your proposed research will make a significant and substantial contribution to the literature (e.g. resolving an important theoretical issue or filling a major gap in the literature).

# Literature Review

Badly written literature reviews suffer from the following problems:

- Lacking organization and structure
- Lacking focus, unity and coherence
- Being repetitive and verbose
- Failing to cite influential papers
- Failing to keep up with recent developments
- Failing to critically evaluate cited papers
- Citing irrelevant or trivial references
- Depending too much on secondary sources

NB: keep it focussed and relevant to the current proposal

# Outcomes

- What are the objectives of the project?
- What will be the outcomes?
- What are the implications for policy and practice?
- How timely is the project?
- How will you measure success or failure of your project?

# Methodology

- Should contain sufficient information for the reviewer to determine whether your methodology is sound (.... “I have an idea.....”)
- Need to demonstrate your knowledge of any alternative methods and make the case that your proposed approach is the better to tackle the research question in hand
- May include details of any statistical analyses you plan to use on the resulting data

# Other Features of Proposal

- It is important to convince your reader of the potential impact of your proposed research.
- You need to communicate a sense of enthusiasm and confidence without exaggerating the merits of your proposal.
- → should also mention the limitations and weaknesses of the proposed research  
e.g. which may be justified by time and financial constraints, or by the early developmental stage of your research area, etc.

# Timeline - Gantt Chart

- Include a Gant chart or similar to chart out the proposed progress for the duration of the grant
- Quite an important feature, as it indicates that you have thought through the steps required to achieve your goals
- Danger in allocating too little (or too much) time to specific tasks / phases of the project – a careful appraisal of the required time is required, which often only comes with prior experience.



Months	2	4	6	8	10	12	14	16	18	20	22	24
Literature Search												
Ethics Application												
Development of computer software program												
Development of test device												
Clinical Trial												
Project / Thesis Write-up												
Project Management and Coordination												

# Budget Submission

Must convince the reviewing panel that the requested funds are justifiable. Specifically, they must be:

- (i) required to carry out the work
  - (ii) sufficient to carry out the work
  - (iii) within the budget limits
- Do your homework - get accurate quotes for equipment, software, travel expenses, etc., rather than estimates.
  - Don't forget 'hidden' costs such as consumables, small pieces of lab equipment (tools, oscilloscope, etc.)

# Budget Submission

Typical costs for which funding can be sought:

- Major and minor equipment purchases
- Consumables (lab bits and pieces, hand tools, etc.)
- Computer software, data acquisition boards, etc.
- Travel money – for attendance at conferences or workshops, visiting or working in a collaborator lab overseas, etc.
- Purchasing time on large-scale installations, e.g. MRI scanner time,
- Staff costs (postgrad student, postdoc, research assistant, etc.)
- Buy your time out

# Dissemination

- Should address dissemination of the results
- What is the appropriate audience?
- How best to reach this audience?
- Conference presentations, peer-reviewed publications, non-peer reviewed publications, annual / final report, etc.
- Generally, any output from the project must acknowledge funding from the source

# Common Pitfalls

- Its not clear what question is being addressed by the proposal - the likely outcome is unclear, or what would constitute success or failure. The contribution to human knowledge must be clear.
- The question is woolly or ill-formed – need evidence of clear thinking both in the formulation of the problem and in the planned attack on it
- Its not clear why the question is worth addressing – need good motivation for the study
- The proposal is a routine application of known techniques (development work carried out by industry....)

# Common Pitfalls

- There is no evidence that the applicant will succeed where others have failed – must include evidence of why you have a good chance of achieving your goals, not simply a wish-list of hoped-for achievements  
The evidence can be:
  - “I have an idea” – sketch the idea, describe preliminary data that proves it’s a good idea.
  - “I have a good track record” – include list of publications relevant to the proposal, perhaps also a paper which includes more technical detail in an Appendix
- Not enough technical detail to substantiate the claim of a ‘good idea’ by applicant – usually to give more rather than less detail....

# Common Pitfalls

- The applicant seems unaware of related research – emphasises importance of literature review. Mention related work, if only to dismiss it.
- The proposed research has already been done or appears to have been done – must discuss inadequacies in rival work
- The proposal is badly presented or incomprehensible to all but an expert in the field - simultaneously comprehensible to non-expert while convincing to expert. Keep highly-technical bits in well-signposted sections (and not in the Introduction)
- Too much attempted for funding requested or timescale envisaged – can reflect lack of realism and poor understanding of the problem

# Common Reasons for Failure

- “Poorly written” “Unfocussed”
- “Descriptive and no clear hypothesis”
- “Experimental plan not well thought through”
- “Too much of a fishing exercise”
- “No clear plan of next steps”
- “No link between aims, methods analysis plan and proposed outcomes)”
- “Work already been done”
- “Important publications not cited” (poor literature review)
- “Scientific basis for hypothesis is unsound”
- “Poor/lack of analysis plan”
- “Pilot data unconvincing”
- “Too ambitious”



# Common Reasons for Failure

- “No contingency plans”
- “Appropriate controls missing”
- “Not a worthy aim”
- “No relevance to cancer”
- “Not clear what impact the findings will have on the field/policy or practice”
- “Not enough samples included in the study make meaningful conclusions”
- “Better model/methodology available to address the question”
- “Expensive and long-winded way of addressing question”
- “Lacking appropriate expertise”
- “Is the research feasible and acceptable”
- “Not ethical”

# Tips

- Ensure the proposed research project is achievable within the stated timeframe. It must be specific, focussed, manageable, and interesting to you.
- Give yourself plenty of time to write the proposal – it will take more than one revision
- Ask a colleague or friend to read your proposal for 10 minutes
  - if they don't understand something, or immediately see the value in what you want to achieve, re-write it until they can see it
- Never make spelling or grammatical mistakes, proofread carefully – don't rely on spell checkers e.g. in MS Word.....
- Avoid abbreviations. e.g. use laboratory, not lab and mathematics, not maths
- Acronyms OK – if defined first

# Tips

- Make sure you adhere to the grant bodies specific rules, regulations and timescales, also requirements for content, length, format, etc. of proposal itself. Applications will be rejected on the basis of not adhering to specific guidelines.
- A picture tells a thousand words.... (e.g. graph of preliminary results, photo of prototype system, Gantt chart, etc.)
- At least one expert will assess the proposal, so don't try to waffle
- Include details of collaborators, where appropriate

# How decisions are made

Criteria may include:

- Feasibility
- Timeliness
- Originality
- Significance of the topic
- Value for money (provide good justification for the fund requested)
- Standing and track record of the applicant
- Environment
  - how will your work place facilitate and support the research proposal?
  - How will your research benefit from any facilities or resources?
  - Has your host institution demonstrated a commitment to your research?

The background of the slide is dark blue and features three sets of concentric circles. Each set consists of four circles of increasing size, centered at different points on the slide. The circles are light blue and overlap each other, creating a pattern of intersecting rings.

If rejected....

Feedback – can be used to refine future applications to that or other funding bodies

# Example – APSM Young Investigator Award

One Step application process - €1500

Full Proposal – (1000 words)

- Background and Purpose of Project
- Plan of investigation (including timeframe) and proposed methodology
- Breakdown of all costings (there must be clear identification of how the applicant would propose to spend the money)

(...plus Abstract, CV, letter of support)

# Example – APSM Young Investigator Award

Applicants will be judged against the following criteria:

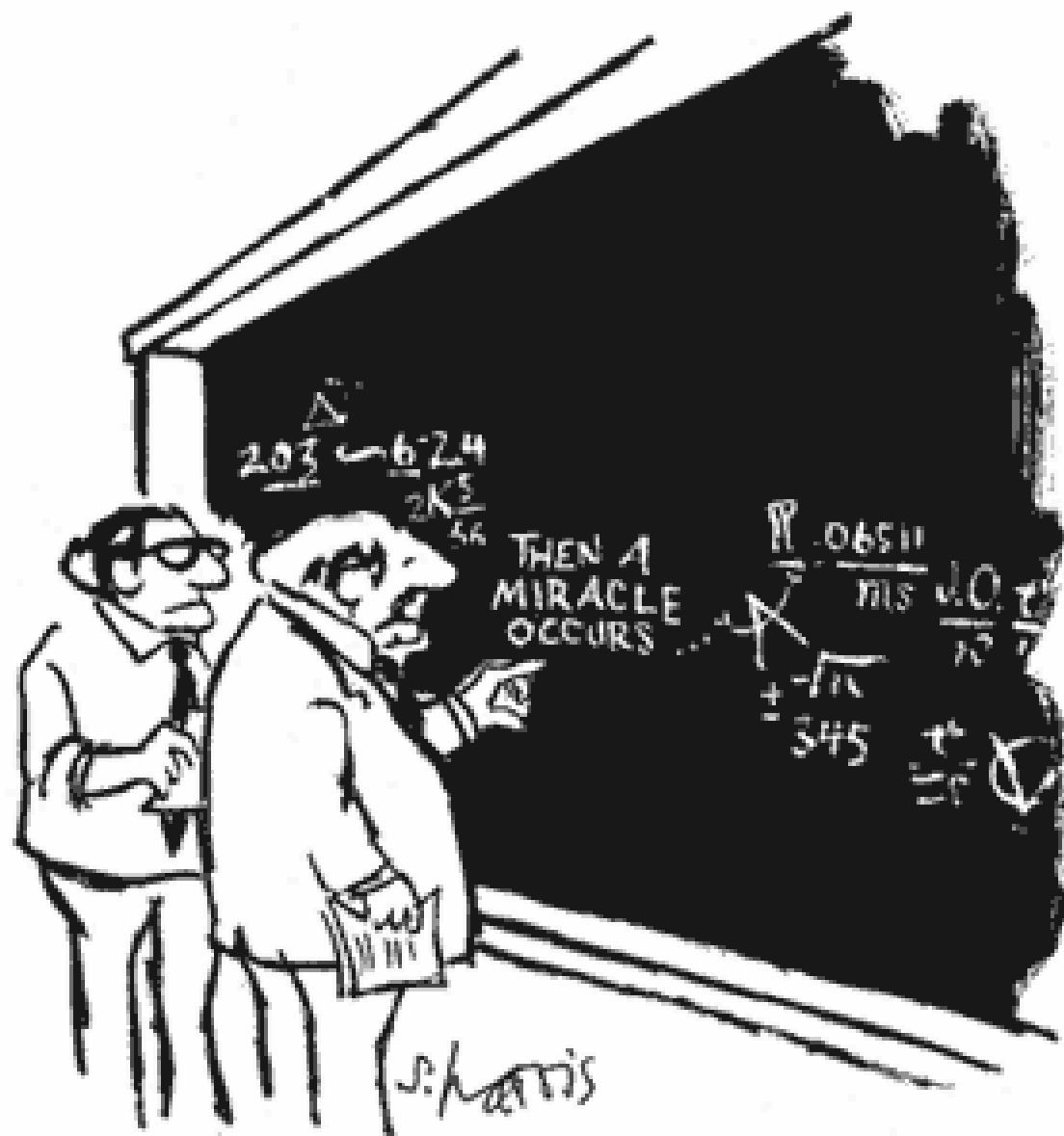
- Academic background of applicant
- Strength of proposed project
- Clarity of proposal, with defined, achievable goals
- Feasibility to complete proposed work within stated timescale

Take the plunge.....



R&E SIG, July 2007





"I THINK YOU SHOULD BE MORE EXPLICIT HERE IN STEP TWO."