Survival strategies for scientists - Tim Clutton-Brock, June 2000

Grants and fellowship applications

1 Attitude

- No-one owes you anything. This is your own independent attempt to get blood out of a stone.
- Be optimistic – but imagine your worst critic is leaning over your shoulder. He/she will be pedantic, cynical, mean, small-minded, sceptical and unimaginative – but very acute. Think of someone who fits this bill while you write.
- Go for quality not quantity of applications. You will probably be facing odds of at least 1/10. Think how to beat the other nine.
- Be very clear and minimise jargon. Assume that members of the committee have less than ten minutes to read your application so make it easy for them. But make sure it still holds up if they spend three hours on it.
- Loosen up and try to sparkle. Avoid being worthy and dull. Committee members probably have 50-100 applications to read. Another long, detailed, dense block of verbiage will not turn them on.

2 Writing

General

- Be clear and avoid jargon whenever possible.
- Be consistent. Use exactly the same words for the same variables or terms in different places.
- Be concise; go over your draft and see how many words you can lose.

Sentences

- Must have a subject, verb and object.
- Should be technically correct if taken out of context.
- Should be correctly punctuated.

Avoid

- Starting a sentence with an adverb or a dependent clause. Put the main point first.
- Misuse of conjunctions e.g. only use but or however where there is a real contrast; avoid using however twice in the same paragraph.

Paragraphs

- Usually one main point per paragraph. Be sure you know what it is.
- The first sentence should encapsulate the paragraph and subsequent sentences should support, justify, modify or extend it.
- Paragraphs should never consist of single sentences. Conversely, they should rarely be more than half a page long.
- There should be obvious logical connection between paragraphs.

Headings

- Two categories (heads and subheads) are usually enough. Multi-level headings are tedious to read. In addition, too many headings encourage lazy writing and lack of logical connection between paragraphs.

Captions to figures, tables

- Should be self-supporting wherever possible. Make sure that your terms for particular measures describe them precisely and without ambiguity. Where a measure is a percentage, ensure the reader can tell what it is a percentage of. The precise nature and size of the sample must also be clear.

3 Organisation

1. Title
2. Abstract
3. General aim
4. General background
5. Specific background
6. Specific aims
7. Methodology and programme of work
8. Budget
9. Justification of budget
10. General justification

1. Title

- Keep it short and general

2. Abstract

- Should be a combination of your general aim (one or two sentences) plus your specific aims.
- Ensure the same order and words are used to describe your specific aims here as are used in 5.

3. General aim

- The initial description of the general aim should be around five lines long, consisting of not more than three sentences.
- Almost all good grant applications are based on a new idea or technique which can be described in a single sentence.
- The idea/application should be immediately recognisable as novel. It should not be the nth application of a question or technique even if to a new species. Committees find this tedious.
- It should also be immediately recognisable as sensible and feasible.

4. General background

- This should provide a stripped-down introduction to the general conceptual area of the grant. The reader should come out of this thinking that it is a really exciting area and that, if only question X could be solved (or questions X-Z), major advances might be made.
- Be stimulating: if this part is not interesting, the detail is likely to be a real yawn.

- Be concise. Go rapidly to the heart of the relevant issues – avoid block coverage of results.
- Be critical. Focus, in particular, on the important issues that are not fully understood – and on the importance of understanding these to the wider field.

5. Specific background

- This is the opportunity to convince the reader that you have the means to solve question X. Say so at the start.
- Explain the background to previous work on the organism.
- Show why answering question X in your particular species is important to explaining question X in other contexts.
- Review the unusual attributes of your set up that will allow you to answer question X and to produce results that are generalisable to other circumstances.

6. Specific aims

- If you have got 1-3 right, you are on the home stretch by now.
- Like Professor Higgins, your reader should come out of this section saying "By God, he/she can do it".
- Identify 4-6 specific questions and explain in detail (one para per question) how you will answer them; what the sample size will be; what the likely result will be.
- If you have identified specific questions that need answering in the Abstract, General background or Specific background, make sure your specific aims are in the same order and that the wording matches as closely as possible.

7. Methodology and programme of work

- This should show how you will answer the questions listed under 6; what the sample sizes will be; in what order you will do the work.
- Your aim here is to convince your reader that you will be able to achieve your goals in the time available and that you have thought through the programme in detail.
- If you have covered part of this in 6, refer back to it rather than repeat yourself.

8. and 9. Budget and budget justification

- Strip it down. Make sure nothing appears excessive.
- Justify each item tersely but precisely, making clear why you will not be able to do the work if it is removed.
- Find out from previous applicants whether there are specific items that committees react against.
- Avoid excessive subsistence costs: referees are suspicious of these even if they are technically allowed.

10. General justification

- Explain the benefits of doing the work in more general terms.
- Ensure that this is comprehensible by someone who knows relatively little about the field.
- Be ambitious but avoid excessive claims

Finally

- Do not leave it to the last minute and then try to write an application swiftly.

- Do give your application to several people to read before submitting it.

And afterwards

- Do not be paranoid if you do not get it.
- Do your best to understand/find out why not.
- Try to make it better next time.
- Do not resubmit the same application.