

Writing Grants: Getting Help from the Experts

For some people the mention of the words "Grant Writing" is enough to automatically think thoughts like "I don't have the time", "It is way too hard", and "I can't find anyone that wants to fund my research project". Despite there being numerous grants available through federal and provincial governments, not-for-profit agencies, foundations, and the private sector, the competition for these funds has increased. To be successful in getting a grant award, it takes more than crossing the first hurdle of getting the application processed with the right selection or type of language, key words used, sentence framing and other tiny aspects; not to mention being devoid of grammatical, spelling and typing errors, staying within the word limit, and trying to convey the needed message in a crisp manner.

In order for a grant application to be complete and successful, there are three key points that need to be addressed:

- ❖ **Does the application convince the reader the importance of the work to be done:**
 - ✓ Is the research to be done outstanding and innovative and at the highest quality?
 - ✓ Is it a well designed project?
 - ✓ Will the outcome of the research have a major impact in the field or area of research and provide new insight (how important is the research)?
 - ✓ Is it a good research question and others in the field will appreciate or support the work accomplished?
 - ✓ Is the outcome of the research marketable or applicable in the industry or healthcare system of Canadians?

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- ❖ **Is the researcher team strong enough academically to meet eligibility:**
 - Are team members recognized nationally or internationally as leaders in their field?
 - ✓ Do they have a superior record of attracting and supervising undergraduate and graduate students, post-doctoral fellow, medical students: the minds of tomorrow?
 - ✓ What collaborations has the researchers done with other investigators within the institution, country or worldwide (*Are they willing to share knowledge*)?
 - ✓ What research contributions (past or present) have they made?
 - ✓ What peer-reviewed publications/articles/monographs/books, patents/copyrights, product/technology, significant presentations, awards/grants/honors (past and present), committee memberships has the researchers produced? Your track record, as judged by publications, is an important criterion in the assessment. Include research papers published, "in press" or "submitted manuscript";
 - ✓ (Junior researchers not meeting some of these criteria would be wise to affiliate themselves with a senior mentor who does).

- ❖ **Is the application well-constructed and compliant and is the budget supportive or realistic of the research to be completed? Has the researchers considered the following:**
 - ✓ Are all spelling mistakes in the grant application corrected? Is the proper format applied (i.e. all margins, font, spacing, type size meet the guidelines outlined by the granting agency)? Are all questions answered? Are all supporting documentation attached to the grant?

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- ✓ Do not go over the maximum number of pages allowed. Send the instructed number of copies. If attachments and/or appendices are not allowed, do not submit them.
- ✓ Submit the applications on time: grant agencies will not accept applications after the deadline.
- ✓ Does the budget support all foreseen costs? Has the researchers considered the following:
 - Salary and benefits for researcher to carry out research?
 - Salary and benefits for graduate students, post-doctoral fellows, research associates, technicians, administrative support, etc. to carry out the research?
 - Infrastructure costs (equipment, collection of data (computer software, databases), housing/installation, warranties, and contracts for servicing or training)?
 - Travel to conferences to present data?
 - Publication costs?
 - Overhead (utilities, phone/data, occupancy costs, building use, central administration, central computing services, library costs)?
 - Supplies for study?
 - Laboratory costs (i.e. imaging, laboratory analysis, and storage of samples)?

Here are seven (7) tips to help you out while writing your grant:

1. **Know the Funding Agency:** Funding agencies whether federal, provincial, not-for-profit or private support research studies that further their mission. Ensure that the grant application clearly demonstrates that your objectives match their mission explicitly.
2. **Know your Colleagues and Ask for Help:** Colleagues are essential for ideas, critiques, and guidance. If you are weak in certain areas of your project, collaborate with colleagues who are strong in these areas.

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3. ***Make Time:*** On average it takes ~100-120 hours to write a grant application. Give yourself more time that you think you need. It can not happen over night.
4. ***Read the Instructions:*** Clearly communicate the hypothesis, aims, methods, and significance of your research work. Demonstrate that your hypothesis is sound, your aims are logical and feasible, you understand and have prepared for potential problems, and you can analyze the data. Don't assume your reader knows what you mean: explain complex concepts or terms. Keep abbreviations, acronyms, and discipline-specific jargon to an absolute minimum. Write the abstract last, as an accurate summary as well as a preview of the grant. Get help from a scientific editor. The better the writing, the better your chances for success. Remember, your grant application should answer these questions:
 - Who is a part of this research study? Be sure to include biographical sketches of the researchers and list key personnel, contributors, as well as human subjects required. Sell yourself.
 - What are the hypothesis, specific aims, research design, methodology, timelines, and budget for your research study? Provide enough background information so that someone who is not an expert in the area can understand your project. Include preliminary data particularly for new techniques or rarely used techniques, especially if it supports your hypothesis. Include careful sample size calculations and the methods used to obtain them wherever possible, particularly for human studies. Include an honest discussion of the pitfalls and shortcomings of your techniques and how you will overcome these barriers. Make sure your budget is realistic: consider the options mentioned above. Your research plan should include:
 - hypothesis, long-term objectives, and specific aims;
 - background and significance: what is known, what is not known, and why is it essential to find out;
 - progress / preliminary studies;
 - research design and methods;
 - timetable;
 - strengths and weaknesses.

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- Why is the research project important? Clearly state why your project is important and stress its importance to health and/or disease. Include background and significant research studies completed to date and how your research project will enhance our understanding with your novel ideas.
- 5. ***Tell a Story:*** Make sure your proposed research is innovative, exciting, and worthy, and then tell that story in your application. Find and highlight your application's "Wow" factor and tell why your research is so important to science and how it will better our human knowledge. Remember, the research project is not about your needs but the needs and understanding of society.
- 6. ***Keep it Focused and Simple:*** Think like a reviewer. Reviewing stacks of proposals is a difficult job. Grant reviewers quickly learn to scan text, particularly proposal abstracts, in an attempt to get a quick overview of exactly what you expect to do, with whom, when, how, and toward what measurable outcome. Remember that the reviewers are doing the reviews as a task over and above their daily mandated activities, and are often unpaid. They may be overwhelmed with applications and manuscripts requiring reviews. Reviewers often do their reading in bits-and-pieces: have your application so organized so that it can be read in this way. Stay focus: a common mistake of new applicants is trying to put a lifetime's work into one application; this is unrealistically ambitious.
- 7. ***Edit and Revise:*** Allow 2-3 weeks for each draft revision, including time to toss it in a drawer and come back later with fresh eyes. Ask a colleague in your field, an intelligent non-expert, and a good scientific editor to review your application.

The following individuals have been extremely successful in being awarded grants from various agencies. If you want to see what a successful grant application looks like, these individuals have agreed to show you proposals of theirs that have been successful in being funded (by appointment only and availability). A brief biographical sketch of each individual has been included under this section on the research website:

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- Dr. Robert Brison
- Dr. Ian Gilron
- Dr. Daren Heyland
- Dr. Diane Lougheed
- Dr. William Pickett
- Dr. Robert Siemens
- Dr. Graeme Smith

Remember: Even if your first grant-writing effort doesn't get funded, the planning and writing process still allows you to resubmit your idea elsewhere. Take the summary statement critiques and use them to improve the grant so that it does better the second time it is reviewed. Seasoned grant writers are skilled recyclers reusing paragraphs from successful grants.