Evidence Based Library and Information Practice

Feature Article

Navigating the Road to Success: A Systematic Approach to Preparing Competitive Grant Proposals

Lynn Langille
Research Consultant
Atlantic Health Promotion Research Centre
Dalhousie University
Halifax, Nova Scotia, Canada
Email: lynn.langille@dal.ca

Theresa Mackenzie
Manager, Knowledge Exchange and Research Capacity Development
Newfoundland and Labrador Centre for Applied Health Research
Memorial University
St. John's, Newfoundland and Labrador, Canada
Email: tmackenz@mun.ca

Received: 29 November 2006 **Accepted:** 13 January 2007

© 2007 Langille and Mackenzie. This is an Open Access article distributed under the terms of the Creative Commons Attribution License (http://creativecommons.org/licenses/by/2.0), which permits unrestricted use, distribution, and reproduction in any medium, provided the original work is properly cited.

Abstract

Purpose - Difficulty in securing research funding has been cited as one barrier to the involvement of more librarians and information professionals in conducting original research. This article seeks to support the work of librarians who wish to secure research funding by describing a systematic approach to the creation of successful grant applications.

Approach - The authors draw on more than fifteen years collective experience in supporting the development of successful research grant proposals. Eleven grant-writing best practices or 'key approaches' are described, and a planning timeline is suggested.

Conclusions: Use of these best practices can assist researchers in creating successful research grant proposals that will also help streamline the research process once it is underway. It is important to recognize the competitive nature of research grant

competitions, obtain feedback from an internal review panel, and use feedback from funding agencies to strengthen future grant applications.

Introduction

It is clear from reports in this and other research journals that librarians and information professionals are active researchers who value the use of evidence in their work. Recent studies have pointed to the need for more research in the field, but barriers exist that may hinder librarians' ability to conduct research (Powell et al). One such barrier may be the inability of researchers to secure funding for this work (McNicol, Koufogiannakis and Crumley).

The guidelines in this article draw on the authors' more than fifteen collective years of experience in writing, and supporting others to write, collaborative research grants (Atlantic Health Promotion Research Centre, Newfoundland and Labrador Centre for Applied Health Research). The purpose of the article is to distill from these experiences the key aspects of a successful grant proposal, and to suggest a systematic approach to grant-writing, that will help librarians to secure research funding.

Whether a researcher is applying for research grants from his/her employing organization or from a national or international granting body, the qualities of a successful grant proposal are similar. Some of the most important approaches to writing successful grant proposals are summarized in Table 1 and outlined in the sections that follow.

1. Address a specific audience

There are two main audiences for a grant proposal – the funding agency, with its specific mandate and priorities, and a committee of reviewers who may or may not be experts in your field or discipline.

Researchers can learn more about funding agencies by studying the organization's websites and publications. Additionally, researchers can obtain information by contacting a program officer within the agency to confirm that the proposal fits with the program objectives of the funding agency.

A SYSTEMATIC APPROACH TO WRITING A SUCCESSFUL GRANT PROPOSAL
1. Address a specific audience
2. Be persuasive
3. Be innovative
4. Involve stakeholders
5. Define your objectives and outcomes
6. Include a detailed research plan
7. Address ethical issues
8. Describe the use of research results
9. Describe required human and material resources
10. Be focused and write clearly
11. Tell a story

Table 1. A systematic approach to writing a successful grant proposal.

The agency's website will often provide direct contact information for a program officer in its request for proposals. When this information is not provided, contact the agency and request this information. It is helpful to establish a contact person for information as you navigate through the application process.

Members of review committees are typically busy researchers who are in demand for their expertise and may have many proposals to review. Successful grant proposals capture the attention of the reviewers and stand out from other submissions in their clarity and focus.

To begin, determine your eligibility for the granting initiative, e.g., does the agency have citizenship or academic requirements that you must meet? Then, explicitly follow the application instructions provided by the funding agency. If a proposal is not complete, or does not adhere to the specified format, it may be rejected by the agency in their preliminary review before it even reaches the review committee. Funding agencies often provide assessment criteria within the application instructions. Use this information to assess your own proposal and to ensure that it meets the agency's requirements.

Other useful tools for critically appraising grant proposals are available for clinical research (Inouye and Fiellin) and community based research (Ontario Healthy Communities Coalition).

The Summary

Funding agencies often require a one-page summary of the proposed project. The summary distills the essential components of the proposal into a concise, clear description of the project (Innouye and Fiellin). It should contain a few sentences on each of the following: the problem, the credibility of the applicants, the general and specific objectives, methods to achieve the objectives, and anticipated outcomes. The summary will make an important first impression in the minds of the reviewers assigned to your proposal. It is often the only section of the proposal that will be read by all members of the review committee. A well-crafted summary is a critical component of a successful grant application.

2. Be persuasive

In competitive funding contexts, there are likely to be many proposals that are technically sound. In these cases, persuasion will be the deciding factor in success. Applicants must provide evidence to explain the need for research in a particular area and demonstrate their ability to carry it out. Explain who will benefit from the research and how. Spark the interest and imagination of reviewers by using a variety of types of information and formats including statistics, stories, quotes, frameworks and tables.

Soliciting feedback from experienced researchers, both internal and external to your field or discipline, will improve the persuasiveness of your proposal. Look for researchers within your institution who have had funding success, or approach specialists in your subject area who work at other institutions. Inouye & Fiellin recommend a structured internal review process in which the proposal is distributed about 3 weeks before the deadline to an internal review panel consisting of three members (2 in the same field and 1 outside the field). The panel meets with the Principal Investigator(s) about 2 weeks before the deadline to provide feedback on the overall grant and quality of presentation and to address specific issues within each section. An internal review process can improve the presentation and scientific content of a grant proposal, give members of the panel experience in reviewing grants,

increase collegiality, and help applicants meet their deadlines (Inouye and Fiellin).

3. Be innovative

Innovation is an assessment criterion in most funding initiatives. Funding agencies are not interested in funding the same research repeatedly. They want to produce new knowledge that builds on what is already known. The current push toward applied research through knowledge translation includes innovation in partnerships and collaborations as well as in knowledge development. Successful grant-writers indicate clearly how their proposal is unique, responds to an identified need, builds on previous work, avoids previous errors, creates stronger collaborations, and makes an important contribution to their field.

4. Involve stakeholders

Increasingly, funding agencies want to know that the research they are supporting is going to be applied to real-world problems and challenges. Including a range of stakeholders for whom your research is relevant increases the likelihood that the research results will be used. Stakeholders may participate in the design of the research question, in the development of the proposal, or in the application or dissemination of results. A good proposal describes the role of stakeholders at each stage of the project.

SELECTED GRANT WRITING TERMS AND ACRONYMS	
Stakeholder	A person, group, or organization that has an interest in the outcomes of the research project
Principal Investigator (PI)	Generally, the main applicant in a research proposal; the person who will lead the research project and be accountable for the conduct of the research and reporting to the funding agency.
Co-Investigator (CI)	An individual who works with the principal investigator in the development or implementation of a research project.
KT/KTE	Knowledge Transfer or Knowledge Translation and Exchange: sharing of information in the process of conducting a research project or in dissemination of results. Implies two-way exchange with stakeholders.
LOI	Letter of Intent: a letter that registers your intent to apply to a funding opportunity or agency. Not all agencies or programs require an LOI. Check with the funding agency for specific requirements.
REB/IRB	Research Ethics Board or Institutional Review Board: the committee or board of an institution or jurisdiction that is responsible for ensuring that research proposals meet ethical standards. The name of the REB/IRB varies by institution and jurisdiction.
CFA/RFA/RFP	Call for Applications/ Request for Applications/ Request for Proposals: an announcement from a funding agency that indicates the start of a new grant competition. It contains specific instructions for applying to the initiative.

Table 2. Selected grant writing terms and acronyms.

5. Define your objectives and outcomes

Research proposals usually describe a general objective, specific objectives, and expected outcomes. General objectives describe the larger problem or the motivation behind the research. They are goals that cannot be achieved by a single project or organization and typically require long-term efforts. Specific objectives can be achieved within the timeframe of the project or program described in the proposal. Outcomes are the products of the research or the contribution towards resolving the general and specific objectives.

Strong proposals strike a balance between ambition and achievability. Grant reviewers want to know what the outcome of your research is expected to be. Will it be a new theory, a better explanation or understanding of a social or technical problem, a new method or approach? In the proposal, outcomes should be linked to the specific objectives and detailed in the research plan.

In addition to clarifying why the research is important and where it fits in the larger scheme of things, the process of developing objectives and describing outcomes for the proposal also helps the researcher provide a framework for the selection of research methods and knowledge exchange strategies.

6. Include a detailed research plan

A comprehensive research plan is one of the most important factors determining the success of a proposal. About half of the pages in the proposal should be dedicated to the research plan, which provides a detailed description of how the researchers will achieve their specific objectives. Explicitly state the connection between the objectives and methods, call attention to potential challenges that may be encountered, and provide possible strategies for addressing them. The research plan will include information on the sample or population, sample recruitment, data collection and data analysis. Describe what will be done, how it will be done, and by whom and when. Clarify the roles and contributions of the research team and partners. Include a timeline showing when each of the components of the research plan will take place and when the outcomes will be realized. Displaying the key components of the research plan in table format is a useful way to provide a 'snapshot' of the research and related activities for the reviewers, and can help improve the internal consistency of the plan as it is being developed.

Components of a Research Plan
Description of objectives
General description of methods and how they will achieve objectives
Specific methodology: sample or population; recruitment; data collection and analysis
Potential challenges and strategies for addressing them
Roles of research team members and partners
Timeline

Table 3. Components of a research plan.

7. Address ethical issues

All research involving human subjects requires ethical approval from institutional or government ethics review boards. In some cases, ethical approval for research is required before an application is accepted by a funding agency. More often, ethical approval is sought after a grant is funded but before any aspects of the research are initiated. Even if formal ethics approval is not required by the funding agency to which you are applying, your proposal should broadly describe the ethical dimensions of the proposed research (e.g., informed consent, confidentiality) and the approaches that will be taken to ensure that the research meets ethical standards.

8. Describe the use of research results

Funding agencies often suggest that at least 10% of the total project budget be devoted to the dissemination and application of research results. Over the past decade, the application of research results in health and social sciences has become a field of study in itself, framed within concepts such as knowledge translation, knowledge exchange, and knowledge mobilization. The Canadian Health Services Research Foundation has developed a 1:3:25 format (a one-page summary, a three-page description and a 25-page report) for the dissemination of research to policy makers in the health services field (www.chsrf.ca). The Provincial Centre of Excellence for Child and Youth Mental Health at the Children's Hospital of Eastern Ontario has produced a toolkit called *Doing More with What You Know* which includes a wide range of tools and processes for knowledge exchange (www.alafinepointe.ca). These tools can be easily adapted for librarian researchers and can be used to identify multiple target audiences for research results and to promote creativity in developing content and formats.

9. Describe required human and material resources

The project budget outlines the human and material resources needed to carry out the project. A well-planned budget reflects attention to detail. Align the budget with the proposed activities, current costs, and the expenditures allowed by the funding agency. Link the required personnel to the specific aims of the project. Many funding agencies will require that dollar figures are attached to 'in-kind' contributions such as the time contributions of existing staff, the use of existing equipment, and the value of office and meeting space. Carefully calculate both the resources that are being contributed by partners in the project and those you are requesting from the funding agency. Keep in mind that there are often guidelines for salaries and other costs within your institution, or within the funding agency, that must be followed. Funding agencies and your employing institution may provide guidance in this area; check with them for sample budgets and other useful information. Make sure the budget figures add up correctly.

10. Be focused and write clearly

Proposals are likely to be viewed in a positive light if they are pleasurable to read and easy to assess according to the criteria set out by the funding agency. Proposals that are vague and unfocused will not be well received by reviewers. Begin each section and paragraph in the proposal with a strong lead sentence that boosts the readers' interest and tells them what the paragraph is about (McInnes et al.). Define key concepts and use the same information and terms consistently throughout the proposal. Write generally for all members of the review committee but with enough specificity to satisfy the reviewers who are knowledgeable in your field.

Write in the active voice using short, clear sentences. Writing clearly means avoiding jargon and acronyms as much as possible, paying close attention to good grammar and spelling, and practicing good formatting (e.g., using the exact margins and font sizes specified by the funding agency). Additional strategies for improving grant-writing skills include asking colleagues who have been successful in obtaining grant funding for copies of their proposals and becoming a member of a peer review committee.

11. Tell a story

A grant proposal is a narrative. Like any good narrative, it has a beginning that draws the reader in, a middle that provides vivid detail to sustain interest and provide the kinds of information the reader is seeking, and an ending that draws the threads together. A strong beginning is imperative to set the stage for what follows. The middle of the proposal succinctly reviews the research context and provides details of the research plan. The ending re-states the importance of the work being proposed, assures the reader of the researchers' credibility and preparedness to take on the tasks outlined, and reiterates how the outcomes of the project will contribute to research and broader social goals.

Grant Writing Timeline

Grant writing generally consists of three phases: pre-writing, writing and submission. In Phase I, the pre-writing phase, the general and specific objectives for the research are drafted, links are established with research users, preliminary work (e.g., pilot testing, needs assessment) is conducted, and contact is made with the program officer in the funding agency. Phase II, the writing phase, starts about 3 months before the application deadline

GRANT WRITING TIMELINE		
	Period of Time Before the Deadline	**Activities**
Phase 1	6 months to 1 year	Survey funding opportunities and decide which funding programs you will target. Draft the general and specific objectives for your research. Establish links with research users/ stakeholders. Conduct pilot tests, needs assessments and other preliminary work as required. Contact the program officer in the funding agency.
Phase 2	12 weeks	Assemble your multidisciplinary team (if applicable). Write the general and specific objectives. Start gathering materials.
	6 weeks	Start writing, some every day.
	4 weeks	Finish gathering materials. Solicit letters of support, as appropriate.
	3 weeks	Distribute draft to internal review panel.
Phase 3	2 weeks	Meet with internal review panel. Submit for institutional processing and signatures.
	1 week	Make final revisions, carefully proofread, and submit.
Adapted from McInnes, Andrews & Rachubinski (2005)		

Table 4. Grant writing timeline.

It includes gathering relevant materials, writing the background and research plan, preparing the budget, completing the various forms required by the funding agency, and carrying out an internal review of the proposal. In Phase III, the submission phase, the grant is revised and submitted to the funding agency according to the requirements set out in the Request for Applications. A typical schedule for the three phases is outlined in Table 4.

Conclusion

The preparation of a grant proposal is time consuming, but the time is well spent if it enables researchers to carry out meaningful research and contribute to their field. Attention to detail in the preparation stage also streamlines the research process.

Some common errors made by new grant-writers include failure to carefully follow the funding guidelines and process, failure to demonstrate understanding of the funding agency's priorities, omission of required information, or failure to think through the implementation of the project. These mistakes can be easily avoided by paying careful attention to the details outlined in the request for proposals.

If funded, a comprehensive, well-written grant proposal can be used to help clarify partner roles and responsibilities, to provide the basis for the preparation of ethics submission(s) to relevant institutional or research ethics boards, and to establish a framework for the management of the project. If a proposal is not funded, try not to take it personally (rejection is more common than acceptance), read the reviews carefully, use constructive criticism to revise, and re-submit the proposal at the next opportunity. Grant-writing skills improve with time and effort, and each attempt builds on the learning process.

Acknowledgements

"The authors would like to thank Sandra Crowell, Managing Director of the Atlantic Health Promotion Research Centre, for her editorial assistance, and Nancy Dawe for her research assistance. The article has also benefited from helpful comments from EBLIP reviewers."

Works Cited

Atlantic Health Promotion Research Centre. Guidelines for Preparing Research Proposals: Navigating the Road to Success. (1999). 14 Nov. 2006 <http://www.ahprc.dal.ca/GUIDELINES.PDF>.

Canadian Health Services Research Foundation. Communication Notes, Reader-Friendly Writing – 1:3:25 (2004). 3 Nov. 2006 <http://www.chsrf.ca/knowledge_transfer/pdf/cn-1325_e.pdf>

Inouye, Sharon, and David Fiellin. "An evidence-based guide to writing grant proposals for clinical research." Annals of Internal Medicine. 142 (2005): 274-282.

Koufogiannakis, Denise and Ellen Crumley. "Research in librarianship: issues to consider." Library Hi Tech. 24 (2006): 324-340.

McInnes, Roderick, Brenda Andrews, and Richard Rachubinski. Guidebook for New Principal Investigators. Canadians Institutes of Health Research, Institute of Genetics (2005). 15 Nov. 2006 <http://www.cihr-irsc.gc.ca/e/documents/ig_guide_for_new_pis_e.pdf>

McNicol, Sarah. "Is Research an Untapped Resource in the Library and Information Profession?" Journal of

Librarianship and Information Science, 6.3 (2004):119-26.

Newfoundland and Labrador Centre for Applied Health Research. Grantsmanship Resources (2004). 14 Nov. 2006 <www.nlcahr.mun.ca/resources_team/writing_tools.php>

Ontario Healthy Communities Coalition. Strategies for Effective Proposal Writing. (2nd ed.) (no date). 7 Nov. 2006 <http://www.healthycommunities.on.ca/publications/misc/fundproposal.pdf>

Powell, Ronald, Lynda Baker, and Joseph Mika. "Library and information science practitioners and research." Library & information science research. 24 (2002): 49-72.

Provincial Centre of Excellence for Child and Youth Mental Health at CHEO. Doing More with What You Know: A Tool Kit on Knowledge Exchange. (2005). 7 Nov. 2006 <http://www.alafinepointe.ca/kec/documents/KEtoolkit.pdf>

Additional Resources

Society of Research Administrators, International Grant Resources
http://www.srainternational.org/newweb/grantsweb/index.cfm

Special Libraries Association Research Statement
http://www.sla.org/content/resources/research/rsrchstatement.cfm

Online Computer Library Centre Research Resources
http://www.oclc.org/research/default.htm

Library Research Services
http://www.lrs.org/