

Introduction to Grant Writing for Nurse Practitioners

Amy Perrin Ross APRN, MSN
CNRN, MSCN

Jennifer M. Smrtka RN, MSN, ANP-C,
MSCN

Financial Disclosures

Amy Perrin Ross

- Honoraria: Pfizer, Serono Inc., Biogen Idec., Teva Neuroscience, Genentech Inc., Berlex Laboratories
- Speaker's Bureau: Pfizer, Serono Inc., Biogen Idec., Teva Neuroscience, Genentech Inc.

Financial Disclosures

Jennifer M. Smrtka

- Honoraria: Teva Neuroscience, Serono Inc., Biogen Idec., Pfizer Inc., Berlex Laboratories.
- Speaker's Bureau: Teva Neuroscience, Serono Inc., Biogen Idec.

Introduction

- **Objectives**
- 1. To obtain better understanding of why grant writing is important skill
- 2. To gain step by step understanding of writing a grant proposal.
- 3. To have confidence to develop your research idea.



Why and When would I have
to Write a Grant Proposal?

Importance of Research

- High quality research is necessary to understanding disease and improving healthcare
- Research proposals should add to the existing body of knowledge, advance understanding and ultimately alleviate suffering from diseases.

Importance of Grant Writing

- Grant writing is an important fundamental skill for a clinical researcher.
- One is only able to conduct high quality clinical research if funding is awarded through a successfully written grant.

Importance of Grant Writing for Nurse Practitioners

- Generate independent research
- Base practice on evidence based outcomes
- Advance clinical tools
- Advance professional standards
- Contribute to body of science
- Validate practice

Differences in Grants

Types of Grants

I. Project Grants

- generally support a specific research project and usually include a portion of principle investigator's salary (typically 20-40% of annual income).
- Used for pilot work or preliminary studies, or if larger grant can be used for investigator initiated projects.

Types of Grants Con't

- II. Career Development Grants
 - Provide mostly salary support (75-100% annual income) and little project support.
 - Example: NIH K Awards and foundation based career development awards.

A blue sky with light clouds over a blue ocean with a sun reflection.

Okay, Where to Begin?

Funding Sources

- Federal Funding Institutions
 - National Institutes of Health (NIH)
 1. K08 (Mentored Clinical Scientist Development Award)
 2. K23 (Mentored Patient Oriented Research Career Development Award)
 3. RO1 (Investigator Initiated Research Grant)
 4. R03 (Small Grant)
 5. R21 (Exploratory/Development Research Grant)

Funding Sources Con't

- Other Federal Sources
 - Agency for Healthcare Research and Quality (AHRQ)
 - Centers for Disease Control and Prevention (CDC)
 - Department of Veteran Affairs (VA)

Funding Sources Con't

- Foundations/National Organizations
 - Specific to clinical or research area, i.e.:
 - National Multiple Sclerosis Society
 - National Multiple Sclerosis Foundation
 - American Cancer Society
 - March of Dimes
 - American Diabetes Association

Funding Sources Con't

- Industry/Pharmaceutical Companies
 - Unrestricted educational or research grants
 - Grants may be linked to specific drug or product

Funding Sources Con't

- Community or local funding bodies
 - Local organizations, hospital auxiliaries, community foundations.
 - Quality improvement initiatives, service delivery enhancements, clinical demonstration projects

Critical Points Before Starting:

- Timeline is essential!!!!!!
- Start early; Grant applications always take more time than you think
- Allocate enough time for intellectual process
- Allow yourself enough time to obtain signatures, additional copies, etc.
- Allocate enough time for preliminary review and proofing before submission

Critical Points Before Starting Con't

- Know your audience; obtain information that is available on composition of reviewers.
- For example, NIH membership of study sections (integrated review groups) is available on Centers for Scientific Review Web site (www.csr.nih.gov/committees/rosterindex.asp).
- Web sites of foundations or staff may provide composition of review committees
- Review successful grant applications

Critical Points Before Starting Con't

- Contact funding agency directly to learn about program's goals.
- Search sponsoring agency's web site
- For example, federally funded nursing programs can be found by searching the Bureau of Health Professions (BHPr) at <http://www.hrsa.dhhs.gov/bhpr>, clicking on "What's new" and follow links to nursing. Grant program application kits are also available by downloading Adobe Acrobat Reader.

Critical Points Before Starting Con't

- If possible, attend grant writing workshop
- If working in academic institute, check available resources
- Collaborate and set up mentorship with seasoned funded colleague.
- If possible discuss with research review committee as designated in your department

Most Importantly.....Critical Points Before Starting.....

- Grant proposal is a written contract that details what will be done, how it will be done, over what time period it will be done and how much it will cost.
- Grant proposals, if accepted, constitutes a bond of agreement between the proposed developers and funding agency and serves as contract and blueprint for the project.

Initial Thoughts on My Idea

Grant Writing Step by Step

I: Formulating Novel Idea

- A. Identify a provocative issue; clinical, practical, or academic that warrants further investigation.
- B. Research background information on your idea.
- C. Generate a preliminary idea based on your identified issue and background research.

Grant Writing Step by Step

I: Formulating Novel Idea

- D. Assess your idea's potential for success
 1. Are you able to pursue the idea
 2. What is your competition
 3. Assess the spectrum of funding potential for your idea.

Grant Writing Step by Step

I: Formulating Novel Idea

- E. Seek Constructive Feedback from Knowledgeable Colleagues
- F. Refine the idea to maximize impact in your field.



Essential Prep Work

II. Preparation Before Writing

- A. Read and Understand Review Process
 1. If using application kit; follow instructions explicitly.
 2. Review the following before starting application:
 - a. Significance: Does this study address an important problem?

II. Preparation Before Writing

- A. Read and Understand Review Process
 - 2b. Approach: Are the conceptual framework, design, methods, and analysis adequately developed, and compatible with the aims of the project?

II. Preparation Before Writing

- A. Read and Understand Review Process
 - 2c. Innovation: Does the project employ novel concepts, approaches, or methods? Does the project challenge existing paradigms or develop new strategies?

II. Preparation Before Writing

- A. Read and Understand Review Process
 - 2d. Investigator: Is the work proposed appropriate to the experience level of the principle investigator, is the investigator appropriately trained and well suited to carry out this work?

II. Preparation Before Writing

- A. Read and Understand Review Process
 - 2e. Environment: does the scientific environment where project will be completed conducive to success of project? Is there evidence of institutional support?

A blue sky with light clouds over a blue ocean with a sun reflection.

Now let's begin writing!!!

III. Writing the Grant Proposal

- A.1. Write with maximal clarity and precision
- 2. Want to ensure that reviewers will understand what you intend to do.
 - a. write in simple declarative sentences.
 - b. avoid use of generalities
 - c. proper grammar use throughout

III. Writing the Grant Proposal

- B. Abstract Paragraph
- 1. Abstract will describe essential elements of project in short, concise, clear statements.
- 2. Acts as guide and usually first portion reviewers will read
- 3. Should be engaging, highlight nature of problem, need for research, and hypothesis to be tested; with significant findings.

III. Writing the Grant Proposal

- C. Specific Aims

- Most important section of the grant, aims should include hypothesis, should be very focused, developed, and reasonably ambitious.

- Need to explain key elements of research questions and hypotheses.

III. Writing the Grant Proposal

- C. Specific Aims

1. Introductory Paragraph:

- a. Opening Sentence: highlight medical importance of area; need to get reviewers attention

- b. Important Known's: review current state of knowledge and set the scene to explain what is not known. Include background information and previous research, or pilot studies.

III. Writing the Grant Proposal

- C. Specific Aims

1. Introductory Paragraph:

- c. Statement of Unknowns: needs to identify gap in knowledge base that will be addressed with proposed research; will need to link to previous stated known's but show that proposed research will further advance field of knowledge.

III. Writing the Grant Proposal

- C. Specific Aims

1. Introductory Paragraph:

- d. Identifying Provocative Idea: the previous gap that was identified in the statement of the unknowns; always end the first introductory paragraph by conveying why the lack of unknown information is important, leading to why it is important to research and fill the gap.

III. Writing the Grant Proposal

- D. Methods

- This is the “what is going to be done and by whom” paragraph; and body of application.

- 1. Design and Setting: Explain study setup in detail; describe blinding procedures, randomization, controls, etc. Describe setting and potential patient base. How you plan to enroll subjects into study.

III. Writing the Grant Proposal

- D. Methods

2. Study Sample: should include inclusion criteria, describe and justify choice of study sample. Should also include exclusion criteria; reasons for exclusion based on feasibility and safety reasons.

III. Writing the Grant Proposal

- D. Methods

3. Availability of Participants: to the extent that is possible; reviewers want to be assured that the availability of participants is viable. Provide data such as pilot work in the proposed setting or previously related studies to substantiate availability of subjects and participants of research proposal.

III. Writing the Grant Proposal

- D. Methods

4. Data Collection: This section should describe procedure for collection and procurement of data to be analyzed. Describe all study procedures, variables, instruments, sensitivity, specificity, and reliability statistics.

III. Writing the Grant Proposal

- D. Methods

5. Outcomes: this section describes in detail the operational definition and specification of each study outcome. Also describes how outcome was obtained using validity, reliability, and performance characteristics.

III. Writing the Grant Proposal

- D. Methods

6. Interventions/Controls: describe intervention strategies and standardized protocols related to randomization or blinding procedures.

III. Writing the Grant Proposal

- D. Methods

7. Data Analysis: Use this section to describe data management procedures, analytic approach, and sample size with power calculations.

-Best to work with biostatistician to provide relevant sample size and power calculations for primary outcomes; may use pilot data for projections.

III. Writing the Grant Proposal

- E. Summary

1. Conclusions: This paragraph should summarize in detail strengths and weaknesses of grant presented; and describe how weaknesses affect the validity of the study results. Potential fatal flaws should be addressed. Lastly, describe implications of work proposed to the field.

III. Writing the Grant Proposal

- General Tips:

1. Be cognizant of language: avoid use of “weak words”. For example:

- If, try, believe, might, could/should, hope,

- Use “expect”, or “the extent to which”, use words that are positive and have certainty implied when writing to convey confidence in your work, and expected outcomes.

The background is a smooth blue gradient, transitioning from a lighter blue at the top to a darker blue at the bottom. A bright sun flare is visible on the left side, creating a white and yellow glow that fades into the blue. The overall effect is serene and calm.

Dealing with Rejection

Back to the drawing board.....

- Funding agencies currently support 15-25% of projects
- Most writers deal with rejection at some point in career
- Get feedback if possible from reviewers; extremely important and useful, may or may not be provided by different agencies.

Back to the drawing board.....

- Remember Grant writing is an acquired skill, and may take time and practice.
- Don't give up on your idea; may need to be reworked.
- Ask for help and tips from experienced colleagues.

Helpful Websites:

- www.csr.nih.gov/Welcome/Grant_Application.htm
- www.csr.nih.gov/REVIEW/peerrev.htm
- www.niaid.nih.gov/ncn/grants/basics/index.htm
- The Department of Health and Human Services homepage.

References

- Dahlen, R. Fundamentals of Grant Writing: Lessons Learned from the Process. *Nurse Educator*. 2001: 26(2), 54-56.
- Korin, G. How to Increase Your Funding Chances: Common Pitfalls in Medical Grant Applications. *Canadian Journal of Clinical Pharmacology*. 2005:12(2), 182-185.
- Inouye, S., & Fiellin, D. An Evidence Based Guide to Writing Grant Proposals for Clinical Research. *Annals of Internal Medicine*. 2005: 142:274-282.
- Goldblatt, D. How to Get a Grant Funded. *British Medical Journal*. 1998:317:1647-1648.

References Con't.

- Richards, D. Ten Steps to Successful Grant Writing. Journal of Nursing Administration. 1990: 20(1):20-23.
- Centers for Scientific Review Web site (www.csr.nih.gov/committees/rosterindex.asp).
- Bureau of Health Professions (BHPr) <http://www.hrsa.dhhs.gov/bhpr>
- Russell, S., Morrison, D., National Institutes of Health; Grant Writers Workshop; April 1999.

Questions?????