How to Write a Research Proposal

Suzanne Sarfaty, M.D.

[content of presentation created by Peter Merkel, M.D. and David Hamer M.D.]
Objectives

• Describe major components of a proposal
• Understand importance of a clearly written hypothesis and specific objectives
• Appreciate importance of carefully adhering to proposal submission guidelines of the potential funding organization
• Additional tips to help your proposal submission succeed
Goals of Writing a Research Proposal

• Get the money
• Get the prestige/recognition
• Make the research better
  • Improve science
  • Improve logistics
  • Reality check
• Get buy-in by co-investigators
The Evolution of a Research Application

Time spent on application

Quality of application

- Initial surge
- Near final ramp-up
- Procrastination/waiting on others
- Final details
Relevant Importance of Components of Applications for Trainees
Qualities of a Successful Proposal Writer

• Good research skills
• Good communication skills (ability to write clearly)
• Salesmanship
• Ingenuity and flexibility
• Ability to collaborate on proposal development
• Persistence
Study Question

• Need to start with a good idea
  • Innovative
  • Feasible
  • Conceptually significant (will benefit the scientific community or public)
• Be ambitious, but focused—select one or two single important questions, not too many!
• Begin with a hypothesis statement
Hypothesis/Project Goal

• Have one
• Descriptive data alone is not good science
• State it clearly
• Readdress in methods
• Less is almost always better
  • Overly ambitious projects are common
• Be realistic!
Body of Application

• Clarity, clarity, clarity
• Structure the text
  • Aims/goals
  • Introduction/background
  • Preliminary data
• Methods
  • Analysis
• Timeline
Specific Aims

• Develop clearly defined, feasible specific aims (objectives)
• 1st paragraph: why is this study idea important?
• Follow with rationale for your hypotheses
• Link specific aims to hypotheses
• Consider secondary aims for substudies or questions for which you may not have enough power to adequately address
Background

- Does not need to be a comprehensive literature review
- Describe what is known relevant to hypotheses
- Then tell what is NOT known and how you will determine the answer
- Also describe relevance of the study question to public health or the scientific community
Methods (Experimental Design)

• Start with a paragraph providing overview of study design
• ‘The devil is in the details’
• Continue the same themes throughout your proposal
  • Restate specific aims and hypotheses verbatim in methods section
  • Outline how you will address specific aims and hypotheses in the analysis section
• Be consistent with terminology and abbreviations throughout the proposal
Methods: Key Components

• Study site
• Study population
  • Eligibility criteria
• Recruitment, screening, enrollment
• Baseline procedures
• Follow-up procedures
• End of study procedures
• Sample size estimates and rationale
• Data management and analysis
Follow Instructions

• Follow ALL of the instructions
  • Not just the ones you like
• If you don’t understand an instruction...
  • Ask the funding agency/office
  • Don’t make up the rules yourself
• Common mistakes
  • Exceed page limits
  • Missing information
  • Wrong electronic files/formatting
  • Absent signatures
• Make/use checklist
Deadlines are not suggestions.
Use the application process to improve your project.
Be enthusiastic.
Abstracts/summaries are disproportionately important. So spend real time on them.
Proofreading is critical.
Letters of recommendation/support

• Get them from people who really know you
  • Substance over stature
• Help the writer
  • Give them all the details they need
    • Addresses, envelopes, etc.
    • Title of project
    • Your CV
    • Instructions
  • Sometimes write draft/text
• Ensure the letters are done on time
  • You may need to be a pest
  • Get to know the secretary/assistant!
Recycle Your Proposal

• Apply for more than one grant
  • BUSM
  • Specialty organization
  • Private foundations
  • Other

• Reusing text is acceptable for grants/applications
Ethical Issues

• Describe plan for ethical clearance at BU and at international collaborator’s site
• Briefly describe plans for informed consent process
• Briefly describe risks/benefits of proposed study procedures
• Describe what measures you will take to reduce study-associated risks
Additional Tips

• Write clearly
  • Use acronyms & abbreviations sparingly
  • Avoid passive voice
  • Don’t make paragraphs too long
  • Avoid obvious, trite phrases
  • Avoid spelling, grammatical and punctuation errors!
• Follow the specific guidelines of the funding organization
• Have your mentor and collaborators review and edit your proposal
• Multiple rounds of revision may be necessary
Where to Submit?

- Submit to agencies which offer the highest likelihood of success
- Search out private charitable organizations interested in funding your kind of research
- Ask your mentor and international collaborators for suggestions!
- If one granting agency does not fund your project, another might
Typical Application Example
[MSSRP Scholarship]

- Student name and contact information
- Preceptor/site information
- Project Description:
  - Title
  - Description/goals of the project
  - Hypothesis
  - Is IRB approval required?
- Your role—what you plan to accomplish
Typical Application Example
[IDSFA Medical Scholars Program]

• Application deadline: Feb. 3, 2014
• Application consists of form with:
  • Background information on applicant
  • Mentor/preceptor information
  • Cover letter (2 pages) describing reasons for applying for scholarship and explanation of planned work
  • Letter (2 pages) from mentor
• More information at:
  http://www.idsoceity.org/Medical_Scholars_Program/