

Preparing Grants for Basic Sciences & Engineering

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Sponsored Programs

Outline

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 - Types
 - Finding
- Grant Writing
 - Before you begin
 - The Parts of a Proposal
 - General Guidelines
 - Submission
- Post Funding
 - You should be so lucky, but keep trying!

Funding Sources – Types

- Types of funding sources
 - Government (Federal and State)
 - National Science Foundation – Science & Education
 - National Institutes of Health – Biomedical
 - Foundations
 - Bill and Melinda Gates Foundation – Various
 - Whitaker Foundation
 - ❖ International Fellows and Scholars Program
 - Organizations
 - March of Dimes
 - American Institute of Ultrasound in Medicine
 - Industry – Engineering

Funding Sources – Finding One

- The Office of Research and Sponsored Programs
- J. D. Williams Library
 - Foundation Center resource publications
- Chronicle of Higher Education
 - Advertisements
- The Internet

Searching for funding sources

- Web resources
 - Community of Science (COS)
 - Federal, non-federal and corporate funding opportunities
 - Mainly for researchers and student fellowships and scholarships
 - Profile your research and expertise
 - Search profiles to find collaborators
 - <http://www.cos.com/>

Searching for funding sources (Continued)

- Web Resources (continued)
 - The Foundation Center
 - Private foundations
 - www.foundationcenter.org
 - Catalog of Federal Domestic Assistance
 - Listing of all federal government grant programs
 - www.cfda.gov

Grant Writing – Before Writing

- Develop a GOOD idea
- Contact prospective Sponsors
 - Discuss what you'd like to do
 - Ask for help & advice
 - Pay attention to what they say
- Read the RFA/RFP, PA, BAA Carefully
 - Be Responsive
- Don't propose something easy or obvious

Grant Writing – The Parts

- Organize your proposal according to the RFP
- Typical grants.gov format (NIH, NSF, NIST)
 - Introduction (for resubmissions)
 - Project Summary & Narrative
 - Specific Aims
 - Background and Significance
 - Preliminary Studies
 - Research Plan (Evaluation & Dissemination)
 - Biosketch, Budget & Justification, Bibliography

Grant Writing (Continued)

- **Project Summary & Narrative (<1 page)**
 - Suitable for public presentation or dissemination
 - Written so your grandmother can understand it
 - Assuming she's scientifically literate
 - Include objectives and methods
 - Do not include proprietary information
 - Discuss the relevance of the proposed research to public health (NIH)

Grant Writing (Continued)

- **Specific Aims (1 page)**
 - Provides a roadmap for the proposal
 - First paragraph
 - Give the overall goal of the project
 - Tell why it's important
 - Then itemize the detailed objectives
 1. Measure something or other
 2. Determine the values of some other things
 3. Model the relevant parameters
 - Not always required, but consider doing it anyway

Grant Writing (Continued)

- **Background and Significance (3 pages)**
 - Background (\approx Literature review)
 - People on the review panel don't have your background, so you have to provide the basics
 - Expand on why the proposed research is important
 - Use bullets or numbers to highlight what's important

Grant Writing (Continued)

- **Preliminary Studies (2-6 pages)**
 - Provide information and results to support the proposed approach
 - Especially important if the approach is new or unusual
 - Number each item
 - Final paragraph ties them all together
 - Not necessary (or desirable) for some proposals

Grant Writing (Continued)

- **Research Plan (6-12 pages)**
 - Provide details of how you'll attack the problem
 - Abbreviated version of Materials & Methods
 - Justify use of animals, humans
 - Vivarium, IACUC, IRB
 - Be innovative (but not TOO innovative)
 - Discuss potential problems AND how you will deal with them (VERY important)
 - Give a Timeline
 - highlight various milestones

Grant Writing (Continued)

- **Biosketch** (scientific biography 2-4 pages)
 - Education
 - Where, When, What degrees
 - Personal statement (often not required)
 - Emphasize strengths of yourself and of your collaborators
 - Positions and Honors
 - Other Experience and Professional Memberships
 - Publications
 - Peer-reviewed
 - Others

Grant Writing (Continued)

- **Budget & Justification (2 pages or more)**
 - Provide realistic cost estimates
 - Use a Professional format
 - often standardized by the organization
 - Explain why high-cost items are necessary
 - Make sure the costs are justifiable
 - Usually this is not a criterion for scoring
 - but if it's bad, reviewers will not be happy!

Grant Writing (Continued)

- **The Cover Letter** (if required, 1 page)
 - Application title
 - Funding Opportunity Announcement Number
 - Please assign this application to the following
 - Institute
 - Scientific Review Group
 - The reason for this request is...

Dear Sir or Madam:

Application title: Data acquisition and analyses for the development of diagnostic ultrasound safety standards

Funding Opportunity Announcement number: PA-10-069

Please assign this application to the following:

Institute

National Institute of Biomedical Imaging and Bioengineering – NIBIB

Scientific Review Group

Biomedical Imaging Technology – BMIT

The reason for this request is that it was suggested by my Program Director, Dr. Hector Lopez of NIBIB, following his review of the Specific Aims of the proposal. Dr. Lopez agreed that NIBIB would be the funding institute should the application receive a good score. Dr. Lee Rosen, SRO for BMIT, has also reviewed the Specific Aims, and he is expecting to receive the application.

Thank you for your consideration.

Grant Writing (Continued)

- General Guidelines

- Ask other people for a technical review
- Ask other people for a review of your language, particularly grammar
- Make use of **The Writing Center**
 - English Language Learners **only**
- Define all acronyms on first use
- Number individual parts of each section
- Do whatever you can to make the reviewers' job easier

Submission Process

- What **You** do prior to submission
 - Write and technically review all the pieces
 - Send to ORSP for administrative review
 - Fix what they tell you to fix
- ORSP does the actual submitting
 - If the grant will be through the University
 - Give them plenty of time for this!!
- What **You** do following submission
 - Wait
 - Wait some more

An Eternity Passes...

- Then the summary statement arrives!
 - Page 1 is a Summary
 - Pages 2-3
 - Resume and Description of Discussion
 - Description (Project Summary that you wrote)
 - Relevance (health, education, science, etc.)
 - Individual Critiques
 - Significance, Investigators, Innovation, Approach, Environment
 - Overall Impact
 - Assessment of Budget

PROGRAM CONTACT:
Hector Lopez
301-451-4775
lopezh@mail.nih.gov

SUMMARY STATEMENT
(Privileged Communication)

Release Date: 03/06/2011

Application Number: 1 R21 EB013763-01

Principal Investigator

CHURCH, CHARLES CLAIR PHD

Applicant Organization: UNIVERSITY OF MISSISSIPPI

Review Group: ZRG1 SBIB-J (80)

Center for Scientific Review Special Emphasis Panel
Development Methods of In Vivo Imaging and Bioengineering Research

Meeting Date: 02/07/2011

RFA/PA: PA10-069

Council: MAY 2011

PCC: DUSQ

Requested Start: 07/01/2011

Project Title: Data acquisition and analyses for the development of diagnostic ultrasound safety

SRG Action: Impact/Priority Score: 20 Percentile: 8 #

Human Subjects: 10-No human subjects involved

Animal Subjects: 10-No live vertebrate animals involved for competing appl.

Project Year	Direct Costs Requested	Estimated Total Cost
1	125,000	176,413
2	125,000	176,413
<hr/> TOTAL	<hr/> 250,000	<hr/> 352,826

Considerations Post Funding

- Ethical practices in grant administration
- Your responsibility to the University
 - Ethical use of grant funds
 - Ethical use of University affiliation
- Your responsibility to the Sponsor
 - Reporting
- Your responsibility to Yourself
 - Lay the foundation for the next proposal!

Conclusions

- Choose a topic for which you have a passion
- Choose the best potential funding source
 - There may be more than one!
- Read the RFP carefully
 - And be responsive to it!
- Work with the Office of Research and Sponsored Programs
 - They're your best friends!
- If at first you don't succeed...
 - Reread the Summary Statement!