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GREAT GRANT WRITING: LEARN THE FUNDAMENTALS OF EFFECTIVE PROPOSAL DEVELOPMENT

Helpful Hints for Writing Grants

Information compiled from various sources including:

GWSW Grant Writers' Seminars and Workshops-The Grant Application Writer's Workbook-David C. Morrison and Stephen W. Russell

NIH website Important Writing Tips- http://grants.nih.gov/grants/writing_Application.htm#tips

NIH VIDEOS

- Peer review Revealed: http://www.youtube.com/watch?v=HMO3HoLJuJY&feature=relmfu
- Tips for Applicants: http://www.youtube.com/watch?v=lAOGtr0pM6Q&feature=relmfu

M J Murdock Charitable Trust-Great Grant Writing-www.murdock-trust.org

NSF website - Advice to Proposal Writers-www.nsf.gov-

How to Write a Successful R01- R. Todd Constable-
http://www.yale.edu/grants/training/How2WriteaSuccessfulR01.pdf

Health Research Associates Workshop- Anthony Coelho, JR., PhD and Israel Goldberg, PhD

http://ora.stanford.edu/ora/ratd/nih_04.asp

Contact Info:

Jill Morris
Morris.856@osu.edu
614-688-5423
Guidelines

1) Find the appropriate funding agency

- Make sure to check out their mission and align your proposal with it.
- **CALL them!** Establish a relationship with the Program Officer- they can help you in many ways! Their job is to get proposals and to help you to see if your ideas are in line with the funding agencies goals, they can help with study sections as well. Do not rely entirely on their advice; seek outside advice as well.
- Learn the study section you want-check out the roster lists for reviewers-request it on your cover letter-the wrong study section can be deadly! (Or let NIH assign and then if you don’t agree call the PO)
- Look at current funded projects-make sure they are in line with your proposal and NOT already being done.
- **READ!!** The proposal announcements and READ them again-- following all directions is very important-if not, your idea can be returned without review or arrive too late!
- A deadline is a DEADLINE!

2) Have a clear idea in mind of what you want to do—what are your goals or objectives?

- Can it be realistically approached in the time frame allotted? Is it feasible? Do you have the time, resources, and ability to carry this project out?
- Is this an area of interest to the funding agency? Look at their mission and incorporate this into your proposal.
- Has it been done before? Check current and past funding by the agency.
- Are you an EXPERT in this field? Choose collaborators who can supplement your knowledge or expertise and help in areas you are not so well versed in. Get letters of support from them.

3) Gather background information pertaining to this area-- analyze previous work by others

- **BE CAREFUL! DO NOT OFFEND ANYONE** who might be a reviewer. Instead of pointing out what wasn’t found or the flaws of past work, point out what the “valuable previous work” did identify and how your work will extend it through ...
- **Be thorough** and point out holes or areas needing more research. Relate your project to the “knowns and unknowns”. This might help you formulate your final ideas or help you to settle in on an area that needs more work-to help fill in the gaps in knowledge. It is critical that you are up to date in this field!

4) Have colleagues read your ideas and offer constructive criticism-have a mentor who has been funded read it and who will help you polish the project.

- What kind of impact is this going to have on your field?
- Will it move your field forward-ground breaking knowledge, major contribution to the future directions of your field?
Application Components

PROJECT OVERVIEW/SUMMARY/ABSTRACT

IMPORTANT!!!!! Why? This is what the reviewers read first! Capture their attention. Make them want to read more! This will be on display forever- make it count.

Follow guidelines some restrict up to 250 words.

Write it for the reviewers! Be concise and use lots of white space-proper spacing and **bolded highlights** only-- use *italics* or *underlines* sparingly--too hard to read-- think about old tired eyes reading this at 3 AM!

Answer these Questions- Never make reviewers guess what you are doing and why you are doing it!

What are you going to do, what do you want to do?

Why are you going to do this, why do you want to do this?

How are you going to accomplish this? What methods, experiments, etc do you plan on doing?

What do you expect your outcomes/results to be? (not hope)

Why is this important to the funding agency? What is the importance to your field?

NIH uses the summary to assign Study Section-reviewers

NSF-must address **Intellectual Merit** and **Broader Impacts**--proposals that do not specifically address these will be returned without review!--Reviewers are chosen based on the summary.

Write this first and show to colleagues-get valuable feedback and retool it to sharpen your focus.

Do not include too much unnecessary detail here--usually you do not include literature citations.

Speak to all the major areas of focus in your proposal and make it gripping!

Use excellent grantsmanship-writing skills here. Flow from one sentence to the next, logical progression.
SUMMARY/ABSTRACT SET UP

**INTRODUCTORY** paragraph

**GRAB REVIEWERS’ ATTENTION** in the first sentence!

Educate the reviewers on the knowns and unknowns –why this project is important, what is the problem or need that will be addressed by this project. You must show them there is a NEED--critical problem--missing knowledge that your project will fill.

**FOLLOWING** paragraphs

Start with your long term goals--this shows reviewers why you and your colleagues are highly dedicated and qualified to do this project.

State your project objectives--how you will address the problem, is your proposal a “statement of need or hypothesis driven”. Is there a need based on wholes in knowledge or are you hypothesizing your project will produce results or an answer? Provide your rationale for the project. What will be gleaned from this project that was not known before? Statements concerning your institutional support and environment show a commitment to the project and access to what is needed.

**FINAL** paragraph

End on a big note. Project outcomes--what will the funding agency get out of your project (rewards to be reaped)? Speak to the innovation, expected outcomes and the impact they will have and how they will benefit the agency/society.

**SIGNIFICANCE**

This is a review criterion so make it count! Highlight it! Have it follow the summary unless told to do otherwise in the directions. **Don’t make reviewers search for it.**

1/3-1/2 page

Relate it to the agency’s mission

Show how the completion of your project and the knowledge gained will be of high importance to the funding agency and society in general-what new and improved information will come out of this project that has a significant impact on society?

Restate the knowledge gap and how your research will fill this gap. What will be possible after your research that wasn’t before- a new direction, treatment, intervention, etc...?

Be obvious...**This project is significant because**...
SPECIFIC AIMS/OBJECTIVES/GOALS

Follow the guidelines here! (1 page for NIH)

Write it for the reviewers! Be concise and use lots of white space-proper spacing and bolded highlights

Use Bold type for Specific Aims/Objectives/Goals-restate each aim/goal/objective one at a time-briefly elaborate on them and follow the same outline for each one. Briefly discuss planned experiments/studies, expected outcomes, and anticipated problems-important to address these now because the reviewers will be thinking about them anyway.

DO NOT MAKE AIMS 2-4 DEPENDENT ON SUCCESS OF AIM 1 (what happens if Aim 1 fails-then what?)

1. Specific Aim #1: Title
   
   1.a) Intro
   
   1.b) Experiments/studies
      
      1.b.1) Study 1
      
      1.b.2) Study 2
   
   1.c) Expected outcomes-Results
   
   1.d) Possible problems- and solutions/strategies for handling them

2. Specific Aim #2: Title
   
   2.a) Intro
   
   2.b) Experiments/studies
      
      2.b.1) Study 3 (use consecutive numbers for experiments- easier for reviewers)
      
      2.b.2) Study 4
   
   ETC

RESEARCH PLAN/PROJECT DESIGN/RESEARCH STRATEGY

This is very in-depth detailed, designed to show what will be done (experiments/studies), what methods will you use, when it will be done (timetable), by who it will be done (PI, CO-I, Consultants, GRA etc.), and what will you do if unexpected outcomes occur? How will you address problems? How will you analyze results? How will you know if successful, how will the results be important to the funding agency--significance and impact it will have? How will results be disseminated? (This might be a whole separate section/requirement for some agencies- NSF Data Management Plan.)

Refer to the funding agency on page limits, fonts, and specifics...Ex. NIH-R01 has a 12 page limit

Introductory paragraph--restate overall objectives/goals to be detailed in the following paragraphs, reiterate why there is a need for this project to be done.
**Following paragraphs**--Expound on each specific aim/goal/objective and give very detailed descriptions about why it is important to do this experiment, the design of the experiments, methodologies, controls, analysis methods and timetables. Summarize expected outcomes and the benefit these will have to the agency/society, etc. Lastly, always address potential problems no matter how unlikely and the manner in which you plan to approach/deal with them.

**Final paragraph**--Always summarize the key points, where you expect to be at the conclusion of the project, the benefits to the funding agency-where they will be at the conclusion of the project, and how this project will effect the future research to come.

**BACKGROUND/NEEDS ASSESSMENT**

**NIH- No longer requires this section-Just incorporate a small amount into the Research Strategy**

This is a selective literature review that supports your statements in the summary about what is known and not known in your field and why your research is so important to fill in the knowledge gaps. This is a way to justify the need for your project, to back up what you stated in the summary.

**BE KIND!** Instead of pointing out what wasn’t found or the flaws of past work, point out what the “valuable previous work” did identify and how your work will extend it through ...

You never know who might be reading your proposal!

Make sure you are current in the literature review, check and double check any new publications that might have come out.

**PRELIMINARY STUDIES**

**NIH- No longer requires this section-Just incorporate a small amount into the Research Strategy**

This section is used to prove you have the ability and competence to carry out the specific aims/goals of the project. Look at all the results you have so far and how they support your claims.

Make sure you relate why you did the study in a certain way and specifically tell reviewers how you did it, the results and the meaning of those results. This is your chance to prove that you have **Been There, Done That and You got This!**

Help the reviewers to see that you have a firm grip on the methodologies/procedures/analysis methods or you have surrounded yourself with those who can help.

**FIGURES AND GRAPHS**-help to illustrate your point just make sure they are readable. Print it (from the NIH site once submitted, remember (NO MORE 2 DAY CORRECTION WINDOW!) And see if you can read it- -think like an older person looking for their “reader glasses”.
BIOSKETCH

Show reviewers you are an expert and have surrounded yourself with experts. Read agency guidelines—they are all different!

Tailor all Biosketches to the project.

NIH--personal statement on why your previous experience sets you apart from the others to do this project. You may address a lack of productivity here as well. Same for your collaborators. They will all look different from each collaborator so leave time for some formatting changes if this matters to you.

ENVIRONMENT/RESOURCES

NIH--You will receive a score for your environment/resources/institutional support.

The reviewers use this to determine whether you have the correct environment to carry out the project, equipment needed, lab space, administrative support, access to a support system, etc. Write up a detailed section on what your institution offers, what you will have access to and how much time (if appropriate) will be allotted for you to use this piece of equipment, lab space, personnel...etc...

Is your institution committed to the project? Have a letter of support stating what they will do for you, release time, access to people or facilities—such as libraries and centers for specialized research, etc...

For Early Stage Investigators, describe institutional investment in the success of the investigator, e.g., resources for classes, travel, training; collegial support such as career enrichment programs, assistance and guidance in the supervision of trainees involved with the ESI’s project, and availability of organized peer groups; logistical support such as administrative management and oversight and best practices training; and financial support such as protected time for research with salary support.

Be specific here about what your institution has to offer YOUR PROJECT!—personalize it.

BUDGETS AND BUDGET JUSTIFICATIONS

What is needed to successfully run your project? Be realistic, this is one of the most common reasons for return—unrealistic—not thought out—not clearly justified budget.

Personnel—Release time, % time devoted to project, summer months, GRA, post doc, consultants, fringe benefits, tuition.

Equipment—any single piece of equipment valued at $5,000 or more.

Travel—will you be going to conferences, seeking travel for consultants, participants, etc...

Other Expenses—publication charges, office supplies, participant payments, animal costs, servicing equipment or other expenses related to the project.

Justification— you will need to fully justify why you need each item; what the personnel will be doing and the costs associated with it; detailed travel costs—plane, hotels, mileage, food; participant costs, etc...

Contact me, I can help! Jill Morris morris.856@osu.edu 614-688-5423