FOR FACULTY
Proposal Tips

CONTENTS:

- **Sample Proposal Templates**
- **Additional NIH and NSF Resources**
- **Proposal Development/Pre-Award Basics**
- **Proposal Tips**
  - **Getting Started - Before You Write**
  - **Writing The Proposal**
  - **Budget Bits**
  - **Evaluation and Assessment**
  - **Before Submitting Your Proposal**
  - **Not Funded This Time?**

SAMPLE PROPOSAL TEMPLATES

Below are two basic proposal templates to get you started for NSF and NIH proposals. Be sure to check the specific guidelines for your proposal in order to include required information differs from the general guideline.

Also provided are the standard budget categories and a NSF CV outline which is needed for NSF proposals.

NSF Proposal Template

NIH Proposal Template

Budget Categories

NSF CV Outline

Quad Charts for use with DoD - **generic** and from **funded projects**

Learn about Logic Models via guides from the **W. K. Kellogg Foundation** and the **University of Wisconsin Extension** service.

ADDITIONAL NIH AND NSF RESOURCES

NIH

NIH New Investigators Website

NIH offers a website directed at new investigators as part of they on-going efforts to assist new investigators in obtaining independent research funding.

NIH Grant Tutorials & Basics

Check out this informative site offer several tutorials on grant applications, managing grants, planning, and writing grants.

NIH Checklist for Applicants and Grantees

An Insider's View of the NIH Review Process

NSF

NSF Publication: A Guide for Proposal Writing

NSF Guide to Programs

NSF Grant Proposal Guide (GPG) – keep current with any changes to the guidelines for NSF proposals, learn the format needed for fonts, margins, CVs, etc. NSF RFPs defer regularly to the "GPG" and will provide details only for deviations from this document.

NSF Award Data

The NSF Federal Review

*Read **review comments** on CAREER proposals provided by a recent NSF CAREER review team member.*

PROPOSAL DEVELOPMENT/PRE-AWARD BASICS

Having trouble getting started? Have a case of writer's block? Check out this great Medical College of Ohio site for links to Grantsmanship, Grant Writing Tutorials, Helpful Hints, NIH-Specific Resources for new investigators, and Hints for proposals to any agency. Tons of **useful information** is presented from a number of websites.

Not sure how much time to plan on for your proposal? More than you think! See **Time Management 101 for Grant Applicants**

Check out **"The Buck Stops Here"** - an excellent *Chronicle of Higher Education* article on the do's and don'ts of proposal writing.

PROPOSAL TIPS

Proposals are submitted for funding to agency programs that are increasingly competitive. For your proposal to be awarded it must stand above other submissions. Clearly it is extremely important that you understand the proposal guidelines and create your grant in order to meet those guidelines. Requests for proposals will vary significantly between agencies and will vary year to year for the same program.

You will need PASSION, ATTITUDE and a COMMITMENT of your TIME for a solid proposal to be developed!

Remember, you must **start with a good idea**. It must have strength within the field of science to which it pertains. You must present your expertise, commitment and the capability to do what you propose. And you need to have solid and well-written grant that out-competes others for funding. Do your homework and put the time in to develop a solid proposal, and present your idea in a manner that conveys your enthusiasm so you **get reviewers excited about your idea!** Listed below are suggested tips developed through the experiences gained from successful submissions.

Several sections are listed below covering the proposal development process. **Getting Started** identifies some steps you need to consider before you ever begin writing. **Writing The Proposal** provides basic tips and guidance on producing a high-quality, competitive proposal. **Budget Bits** gives advice on creating your budget and the budget process. And **Before Submitting Your Proposal** lists a quick final check before everything goes in. Finally, check out what to do if you are **Not Funded** this time, including **some common mistakes** to avoid.

GETTING STARTED - BEFORE YOU WRITE

Think all you need to do is start writing? Quality proposals required considerable effort before you write your first word. Submitting a poor quality proposal may provide reviewers with a memory of your effort you'd rather they not have. Proposals established your career record along with your research and publications.

- **Start early!** Competitive grants are not best produced through last minute efforts. You'll need time to research, reflect, rewrite and to get others to critique your proposal. It is critical to identify funding opportunities as early as possible to allow the maximum amount of time to prepare the proposal.

- **Get Registered with FASTLANE for NSF proposals.** See the **TRS department** for registration assistance.

- **First, read and re-read the proposal guidelines.** Failing to use the acceptable font size or missing required sections will make it more likely your proposal is rejected without a thorough review. Reviews are important as they provide you with competitive information

for future rounds, and allow you to more strategically align your proposal to a program's funding goals.

- **Is the proposal a limited submission?** It is very important that you identify any requirement which limits submissions from a single institution as these must be coordinated for the entire campus. Typically this involves a pre-selection process. **Contact SRD for further information if you see an institutional limit in the guidelines. Also, identify any eligibility and PI or Co-PI restrictions.**

- ***Research the program you are submitting to. Your first step is to decide where and how to pitch your proposal.***

1. Understand the success rate. Would you be better pursuing this one or one with higher rates of awards funded?

2. Make sure you understand the review process and criteria. Will this be peer review? Will it include professionals outside your field? Will education or diversity aspects weigh heavily in the competition? What will the broader impacts be?

3. Know the review criterion! For example, NIH isn't as critical of broader impacts and diversity in the same way as NSF is. Click on this link to check out the **NSF Merit Review Criterion** for details and examples of broader impacts. A complete understanding of the review process, and who will do the evaluation, is critical to your success. NIH lists Integrated Review Groups and Study Section Rosters at **http://www.csr.nih.gov/refrev.htm**.

4. Reviewers will look for Significance, Approach, Innovation, Investigator, and the Environment. These are discussed in more detail under the "Writing The Proposal" section below.

5. Consider your target audience of the grant. Clearly explain them in terms of demographics, size, problems or challenges faced. NSF seeks to increase participation of women and underrepresented minorities in science, technology and engineering.

- **Gather background information. It is critical you know where your field is in relation to your proposed research.** Analyze what already exists. Show thorough knowledge of your field and don't overlook relevant pubs potential reviewers have authored. Seek constructive criticism from knowledgeable peers. If you state your idea is novel or innovative, it had better not already have happened elsewhere in your field! Know your competition.

- **Check for winning proposals.** Do a thorough search of the agency website; contact colleagues in that field who have been awarded grants and see if any will share information or even a proposal with you.

- **Build Coalitions** among departments, institutions, industries and constituencies. They can contribute letters of endorsement/commitment to the project.

- **Work out the overall research plan. Everything must relate to one fundamental question.**

- **Have a brainstorming session.** Write down every idea and connect ideas and words to develop a visual flow.

- **Select your co-PIs and partners strategically!** Establishing your co-PIs for specific effective and competitive reasons is **extremely important**. Don't just consider who is easiest to ask or who happens to work down the hall, especially if that person isn't as qualified as another that you could include. Consider whether or not diversity is important to the funding agency. How will reviewers view the expertise the PIs present? Choosing co-PIs by consensus or the *"Who wants to be?"* method is not the best approach.

- **Finally, create a realistic timeline for you to accomplish specific proposal components and stay on track.**

WRITING THE PROPOSAL

A good proposal is always readable, well-organized, grammatically correct, and understandable. You should address: **(1) What do you intend to do? (2) Why is the work important? (3) What has already been done? And (4) How are you going to do the work?** You must be explicit about how the program will make an improvement. Provide enough details to give the reviewers a clear idea of exactly what you plan to do and why your plan is a good one. Demonstrate broad knowledge of your field. Include a time frame. Your proposal needs to address ***who, what, why, how, where, and when.*** You need to **be clear, organized and detailed**. *The more effort a reviewer takes to figure out your message the less effort they have to review your proposal.*

Your chances of getting a favorable proposal review increase when reviewers perceive precisely what you want to convey about your research. If your writing is problematical and complex structurally, reviewers may not only misinterpret your research, they may give up entirely on reading your proposal.

Reader interpretation is influenced more by writing structure than by the meanings of individual words, according to the authors of "The Science of Scientific Writing." Clarity in scientific writing can be achieved without simplifying or "watering down" research. What's more, improving the quality of writing actually improves the quality of thought, say authors George D. Gopen and Judith A. Swan. Gopen. Their article, which originally appeared in 1990 in the Sigma Xi publication American Scientist , provides practical, step-by-step applications of their structural principles applied to technical writing examples.

Tips to better structure and clarify your writing, selected from Gopen and Swan:

- Follow a grammatical subject as soon as possible with its verb.
- Use verbs that articulate the action of a sentence.
- Have each sentence serve a single function or make a single point.
- Provide context for the reader before introducing anything new.
- Place new information you want readers to emphasize at the end of a sentence – the "stress position."

Where to Start:

Create an outline based on proposal requirements presented in the guidelines. Use the same headings for your outline as used in the Request for Proposal. **Be sure to address all sections! Don't provide the reviewers an easy way to reject your proposal.**

Be sure to clearly state your overall goal and objectives, evaluation, and expected outcomes. NSF now promotes Logic Models as means to do this. **Learn about Logic Models** via guides from the **W. K. Kellogg Foundation** and the **University of Wisconsin Extension** service. Be sure you anticipate problems and consider alternative approaches.

Know the scope of the program so your proposal is appropriate. This is a question you could ask of the program officer. Have you proposed an unrealistic amount of work to be accomplished? Have you balanced the research and education components according to importance? Avoid weakening your proposal by trying to do too much.

Contact the program officer to present your proposed idea. Formulate and ask a list of questions! Does this align with the program and division to which you plan to submit? Most program officers willingly provide information and insight which enables you to produce a better proposal.

The Writing Process:

Try to put goals on the first page. Proposals must be convincing and should not be written with the same style as a dissertation. Your message should be clear and persuasive and well prepared.

Write clearly, concisely, and accurately. Define your acronyms and avoid abbreviations. Don't make it hard for readers to understand or follow. Guide your reviewers through your proposal. Unclear and vague narratives do not score well. Make sure the underlying science and experiments/methods behind your plan are sound, feasible and complete.

Be sure to include how your project will be evaluated. There is a climate of accountability today. How will you measure progress and outcomes/impacts of the project? What is the difference between evaluation and assessment? Will your evaluations be internal and/or external? Formative and summative? Quantitative and qualitative? Learn more about this topic through the Evaluation workshop slides.

WOW vs So What. Wows win. Remember you have to *sell your idea*. Convey your enthusiasm throughout the text. It should be credible and have appropriate endorsements. **Start with an interesting title – it's the reviewers' first impression.** And titles can determine where a proposal is assigned for review. Be sure your title fits the appropriate review panel so it isn't steered to another.

What Reviewers Want:

The Purpose and Significance of your idea. This is the "So-What?" Factor. You *don't* want a reviewer to say that after reading your grant proposal. Does this address an important problem? How will scientific knowledge be advanced? What is the significance of your work in the larger context of science knowledge?

Your Approach. Are the conceptual framework, design, methods, and analyses adequately developed and well-integrated? Do you identify potential problem areas and consider alternative tactics? Whether your ideas and talent are worth funding hinges upon your ability to write a research plan that clearly and simply gives the reviewers everything they need to know. Reviewers want to understand the rationale behind your proposed idea. Address the questions reviewers will have about your project and methods.

Identify the Innovation in your proposal. Do you employ novel concepts, approaches or methods? Are your objectives or aims original and innovative? Does the challenge existing paradigms or develop new methodologies or technologies? Do you have inherent weaknesses in the project design and what are your alternative plans? How will this fit with the "Big Picture"?

Spell out the Investigator and team qualifications. What is the quality of the PI and teams' background, training, and accomplishments as they pertain to this project? Are you appropriately trained and capable to carry out the work? Is the work proposed an appropriate level for the PI and researchers' experience? Are established scientists on the project?

Finally, detail the Environment. Does the scientific environment in which the work will be done promote the likelihood of success? Are there unique aspects of the environment such as equipment, labs, or collaborative arrangements? What evidence exists of institutional support? Is space or time or equipment provided to support the success of the project?

The Finishing Touches:

Once you have a near-final draft which should be several weeks before the proposal is due, have a person outside of your field read your proposal for clarity and flow. This will allow you time to re-write and polish your proposal – *an important competitive step*. Write a clear proposal that is not so technical you'd need a doctorate in your field to understand it. Not all reviewers will be experts in your particular areas yet all of them vote!

Make sure **figures and graphs are all labeled and readable** and you have followed the required font size and margins and line spacing. **Increased competition has resulted in more submissions and proposals that have not followed the guidelines are less likely to be reviewed.** ***Put yourself in the reviewer's place! What can you improve?***

So you are over the page limit? DON'T reduce the font size, rather edit your text to get down to the page limit. A too-small font is less readable and, frankly, irritating to reviewers, and therefore it is not in your favor. Less is best. **Stick to 1" margins, 12 pt font, and keep clear spaces between paragraphs. Use bold and italicized text judiciously. Use clear headings and subheadings. Avoid awkward or run-on sentences. Read aloud what you write. Drive home your message by repeating words or concepts in the title throughout the text.**

Don't overlook the proposal summary. This is the single most important item you will write. It must tell who, what, and why in a manner that creates interest from the reviewers. If it is a proposal to NSF, it must include separate paragraphs on intellectual merit and broader impacts.

Seek letters of endorsement that clearly state the person/organization/institution commitment to the project.

Submitting Your Proposal:

If submitting electronically via Fastlane, LOAD EARLY AND OFTEN! Get vitas, cover sheets, references, current and pending, etc completed as early as possible and get it out of the way. Also waiting until the last day to load is a mistake. Internet traffic, equipment/network problems can affect your ability to meet that deadline.

BUDGET BITS

The Budget is very important and should not be constructed casually. It tells the reviewers what you are going to do based on how you have aligned the dollars available.

- **Check out typical Budget Categories to get started.** Don't overlook dollars needed for external evaluators.

- **It is very important to get with the TEES Research Services budget personnel early in the proposal process. Budgets must be routed before the proposal is submitted. Be sure to indicate if there will be a sub-award to another institution.** The budget and its justification should be complete and unambiguous. If you are not sure of whom you should contact in TRS, check the **TRS Proposal Administrator list** for your department or institution's.

- **Don't decide to divide the budgeted amounts by the number of participants. Instead be sure you are aligning budget allocations with effort and cost, including salary.** Too little or too much money budgeted for the PIs can raise a flag. Reviewers identify this as a common and basic mistake, which makes proposals receive a lower score.

- **Make sure your department head is aware of your proposal.** It can be awkward for them to find out for the first time about your proposal when paperwork routes to them for signature.

- **NSF and cost share or matching. NSF does not require cost share (matching) on the majority of its proposals. Do not include cost s**hare (Budget Line M) unless it is specifically required.

EVALUATION AND ASSESSMENT

Confused about evaluation and Assessment? Here are some helpful resources to check out:

The **Evaluation Center at Western Michigan University** provides resources to guide you through the complex process of evaluation.

The **Online Evaluation Resource Library (OERL)** has evaluation plans, instruments, and reports for NSF projects that can be used as examples for proposals.

Program Development and Evaluation Extension at the University of Wisconsin contains information on situational analysis, priority setting, program action (using a logic model) and evaluation.

BEFORE SUBMITTING YOUR PROPOSAL

- **Print out a final copy,** especially if you are submitting electronically, and double check that all sections of the proposal are readable.

- **Review the grant guidelines one more time to ensure you followed the rules.** Have you overlooked anything?

- **Consider if additional graphics would help make your point stronger and clearer.**

- **Check your budget numbers for consistency between text and budget spreadsheets.**

NOT FUNDED THIS TIME?

It happens to most everyone. Don't be afraid to take reviews, consult program officers, and re-submit in the next competition. Proposal writing and grantsmanship is a learning process that is honed with experience and includes not only good science, but understanding the psychology of the reviewers. Reviews help you better position for the next submission. It is important to **stay in touch with the program officer** to learn as

much as you can for the next attempt. It is perfectly legitimate to tailor your research proposal to fit within the goals of a funding agency, however, if your research isn't a good fit for a particular program, don't try to force it to be. NSF and NIH receive over 70,000 proposals per year. Did yours have what it takes to stand out?

In today's competitive funding enviornment it is very common not to succeed on your first attempt. Resubmitting your proposal does increase your success rate provided you take into account the review information. NIH offers **practical advice for resubmitting your grant**.

Consider taking advantage of the SRD office! We offer valuable assessments and critical reviews of your grant ideas and development process and can improve you competitive advantage on your next submission.

Be aware of common mistakes, errors, and oversights:

- Did you fail to support hypotheses?
- Did you fail to explain how data will be analyzed or how results will be interpreted?
- Did you fail to cite pertinent research findings? Did you include preliminary data you may have generated?
- Did you include too much technical jargon or write clearly for all reviewers? Avoid writing as if audiences are intimately familiar with your field of research.
- Did you make sweeping generalities?
- Did you SELL your idea? Did you have a "Wow!" factor or would the reviewer have said "so-what" after reading your proposal?
- Did you explain how your research will fit with your long-term goals and how it aligns with other research being conducted in your field?
- Did you fail to read and follow the guidelines?
- Did your summary or abstract clearly address the funding agency's agenda? Was it concise? What did it lack?

Need additional information? Here's a basic 6-part series on **Grant and Grant Writing**.

Don't write a grant only you want. Write the grant the agency wants to fund.

The trick is to find the agency and funding mechanism that fits your idea.