

How to write a proposal: a primer

MariaElena Zavala
Professor of Biology CSUN
HSISTEM Resource Hub
February 2019

A successful proposal

- Will “fill-in” a knowledge gap or a needs gap
- Will convince the readers that the work is important and that you can do the work (or that the team that you have assembled can)
- Includes the following components
 - Objectives and specific aims
 - Background and rationale
 - Experimental Design including methods
 - Limits and pitfalls in the proposed work
 - Evaluation Plan

General thoughts on preparing a proposal

- Find an agency that supports the activity that you want funded
 - Research
 - Institutional
 - Equipment
- Ask friends that have an award that you want to get how they got it.
- Once you determine which program you think will entertain your proposal call the Program Officer to share your specific aims page.

Finding program announcements

- The Internet
 - Sciencecareers.sciencemag.org/funding
 - Foundation Center
- Research Office on your Campus
- Sign up for notices from the NSF, NIH, USDA, DOE, etc.
- Professional Societies

Program Announcements

- Tell you what the agency will fund
- What you must include in your proposal and
- How much money you can request
- How those funds can be used
- Deadlines (they are FIRM)

Program Announcement

- **Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI Program)**

- Full Proposal Deadline Date: March 6, 2019

Program Guidelines: NSF 19-540

- The Improving Undergraduate STEM Education: Hispanic-Serving Institutions (HSI Program) seeks to enhance the quality of undergraduate STEM education at HSIs and to increase retention and graduation rates of undergraduate students pursuing degrees in science, technology, engineering, and mathematics (STEM) at HSIs. In addition, the HSI Program seeks to build capacity in undergraduate STEM education at HSIs that typically do not receive high levels of NSF grant funding. The National Science ...

More at

https://www.nsf.gov/funding/pgm_summ.jsp?pims_id=505512&WT.mc_id=USNSF_43&WT.mc_ev=click

Before and as you start write

- Read the announcement carefully
- Re-read the program announcement
- Do you need baseline data?
- How much preliminary data do you need?
- Re-re-read the program announcement
- Setup a timeline for yourself and your team to complete the tasks
- Keep the goals of the announcement and your project goals aligned

Objectives and Specific Aims

- The **objectives** is a carefully crafted statement of the overall goal of your proposed project.
- The **specific aims** tell the readers how you will achieve your goal. They are short and sweet.
- **Specific aims** are realistic and ambitious but not naïve.

Background and rationale

- Introduces the problem
 - Includes relevant literature review describing what is known and shows the gaps and limits of what is known.
- The last paragraph emphasizes what you will achieve if the project is funded, including the impact on the field and for the NSF broader impacts.
 - For the NSF be sure that you clearly label intellectual merit and broader impacts sections

Experimental Design

- Describe with enough detail but not too much detail what you are going to do.
- The sub-sections should relate to the specific aims.
- Preliminary data
 - You will need to show that you have some results indicating that your idea is feasible.
- Progress report
 - If you have been funded in the past you will have to show that you were productive

Other items

- Data Sharing Plan
 - How will you store your data?
 - How will you make your data available to others?
- IRB approval
 - Are you using human subjects?
 - Inclusion (who will you be studying)
 - Protection of special populations
- IACUC approval
 - Are you using animals in research?
- Collaborations
- References
- Letters of Support
 - What or how will the letters writers be providing the project?

THREE WEEKS Before you send it

- Re-read the announcement
 - They can be updated!
 - Be sure that you have all of the tables in the correct format
- Give the proposal to someone who can read it for the science or program.
- Give the proposal to someone who can read it for its flow of ideas and English.
- Use the comments from your readers to improve your proposal

BUDGET

- Ask for what you need to do the work
- Write the budget justification carefully
 - You budget will be cut if you don't provide an adequate justification
- Check that you have requested support for what is allowed.
- Ask for help from your sponsored project office to help you with
 - Staff salaries, benefits, fringes
 - Overhead (indirect costs)

Submitting the Proposal

- NIH and NSF require on-line grant submission
 - Be sure that the your grants officer has registered your institution on the grants systems.
 - Be sure that you and your team are registered too!
- Put the various sections in the right places!
- Work off-line then upload the document.
- Check each part as you upload it so that it is exactly as you want it or thought it would be.
- Uploading takes longer than expected especially if you wait until the last day or two before the deadline.

General Writing Tips

- Be concise
- Avoid jargon
- Write enthusiastically
- Your readers may not be experts in your specific field of research. Help them understand the importance of your proposed work.

Summary

- Read the program announcement
- Your proposal will fill-in knowledge or meet a need at your institution
- Your proposal must follow the guidelines of the program announcement
- If at first you don't succeed (and most people don't) try again!!!