



CENTER FOR ADVANCING FACULTY EXCELLENCE

Proposal Tricks of the TRADE

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The Larger Context





Before You Begin the Proposal

- CLEARLY READ THE SOLICITATION
- Understand the Review Criteria
- Understand the Review Process
- LEARN THE CURRENT NATIONAL/INTERNATIONAL LANDSCAPE
- IDENTIFY WHICH TOPICS ARE THE MOST SIGNIFICANT for the AGENCY
- INVESTIGATE WHAT THEY HAVE FUNDED IN THE FUTURE
- Peruse the Scholarly Literature and know the relevant & important research gaps
- Have a conversation with the Program Officer at the very least an email exchange of content specific ideas
- Identify your likelihood of success



Proposal Basics

- Write to the reviewers (not to me and not to yourself)
- Your proposal will be judged by the reviewers
- Reviewers want to know four things:
 - What is it about (the research objective)?
 - How will you do it (accomplish the objective)?
 - Can you do it (you and your facilities)?
 - Is it worth doing?
- This is, basically, all the proposal needs to convey – but it needs to convey this



Getting Started



A Good Proposal

- A good proposal is a good idea, well expressed, with a clear indication of methods for pursuing the idea, evaluating the findings, making them known to all who need to know, and indicating the broader impacts of the activity.



Getting Started

- Key Questions
 1. What do you intend to do?
 2. Why is the work important?
 3. What has already been done?
 4. How are you going to do the work?



Getting Started

- **Develop your bright idea**
 - Survey the literature
 - Contact Investigators working on topic
 - Prepare a brief concept paper
 - Discuss with colleagues/mentors
 - Develop preliminary data



DOs

- Have a strategic plan
- Build on your strengths
- Differentiate this proposal from your other sponsored work
- Select Strong Collaborators, Partners, Determine Collaboration specifics
- Establish and keep your contacts



Your Proposal

- Should advance you toward your life goals
 - Should be a stepping stone to the next thing
- Should be compatible with your institution's goals
- Should represent a contribution to society at large

Test: If you accomplish your research objectives, are you better off for the effort?



You

- Who are you?
 - Your expertise/interests
 - Your career/life goals
 - Your position/resources
- Your proposal should fit into your life plan

What is your life plan?
Do you need to develop a
strategic plan?



Your Strategic Plan

- A strategic plan has three parts:
 - Where are you today?
 - Where do you want to be in the future (5, 10, 20 years from now)?
 - How do you get from here to there?

A strategic plan is a
roadmap for your life



The Research Topic

- It must be research(ie. Discovery based addressing unanswered questions, uncertainties, how? What? When? Where? Quantities? Frequencies? Mixture?
- It must not have been done before
- It must be significant
- There must be higher than probability zero that you can do it
- It must lend itself to a viable research plan
- You must have the facilities to accomplish the research
- It should fit into your strategic plan



Initiatives

- Research versus an Initiative
- An initiative is right for you if:
 - It's your topic
 - You are already working in the field
 - It fits with your strategic plan
 - You contribute through your collaboration

Be sure to read the
announcement for what it says,
not what you want it to say



DON'Ts

- Rush
- Wait until last minute (1 month) to contact program directors
- Make the proposed work (research and education) too broad
- Make the proposed work too narrow
- Ask for too much (or too little) money
- Ignore rules (Grant Proposal Guide) and misc. items



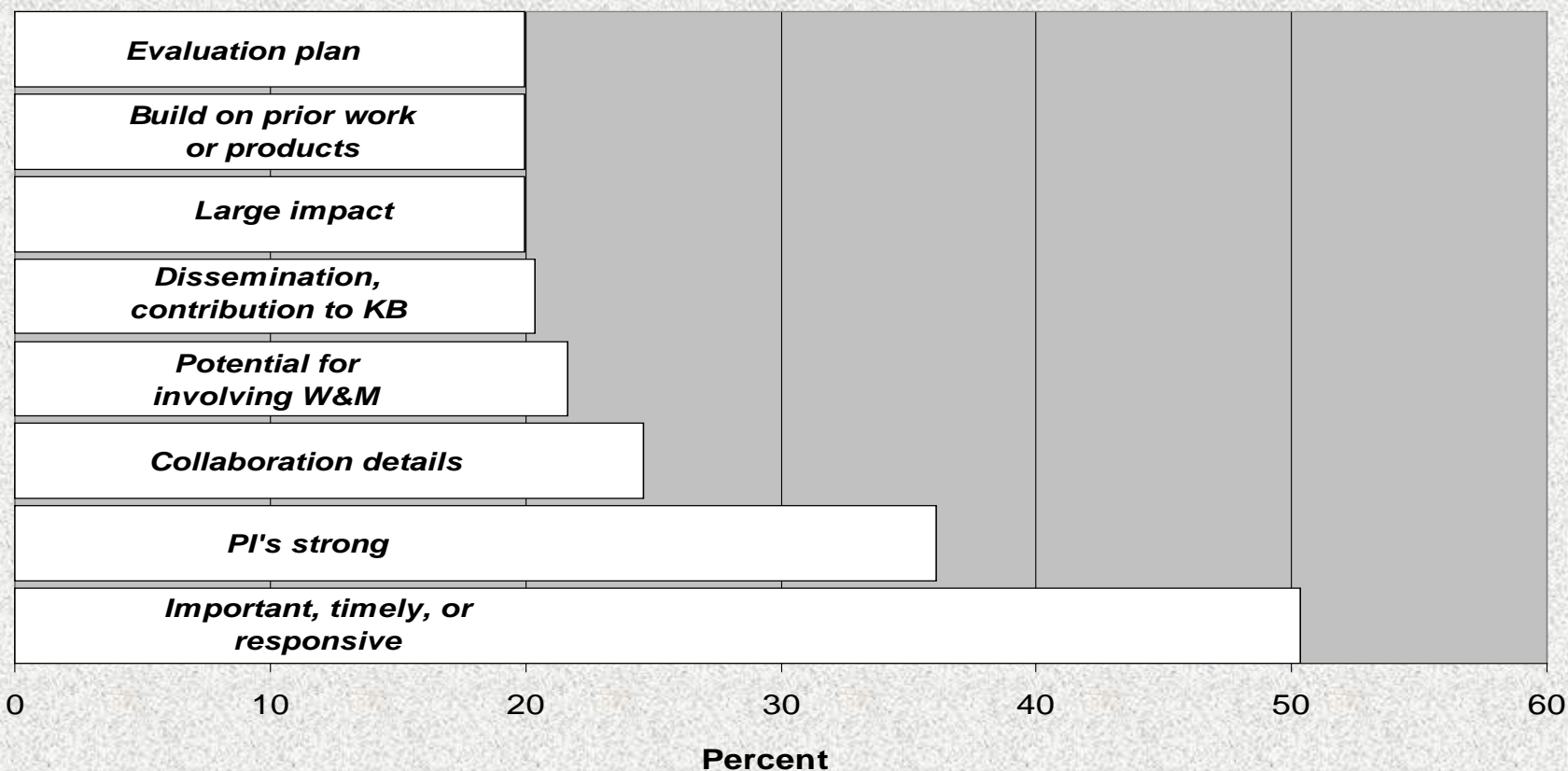
What makes a proposal Competitive?

- Likely high impact
- New and original ideas
- Succinct, focused project plan
- Knowledge of subject area of published, relevant work
- Experience in essential methodology
- Clarity concerning future direction
- Sound scientific rationale
- Realistic amount of work
- Sufficient Detail
- Critical Approach/sound plan of implementation



Most Common Strengths

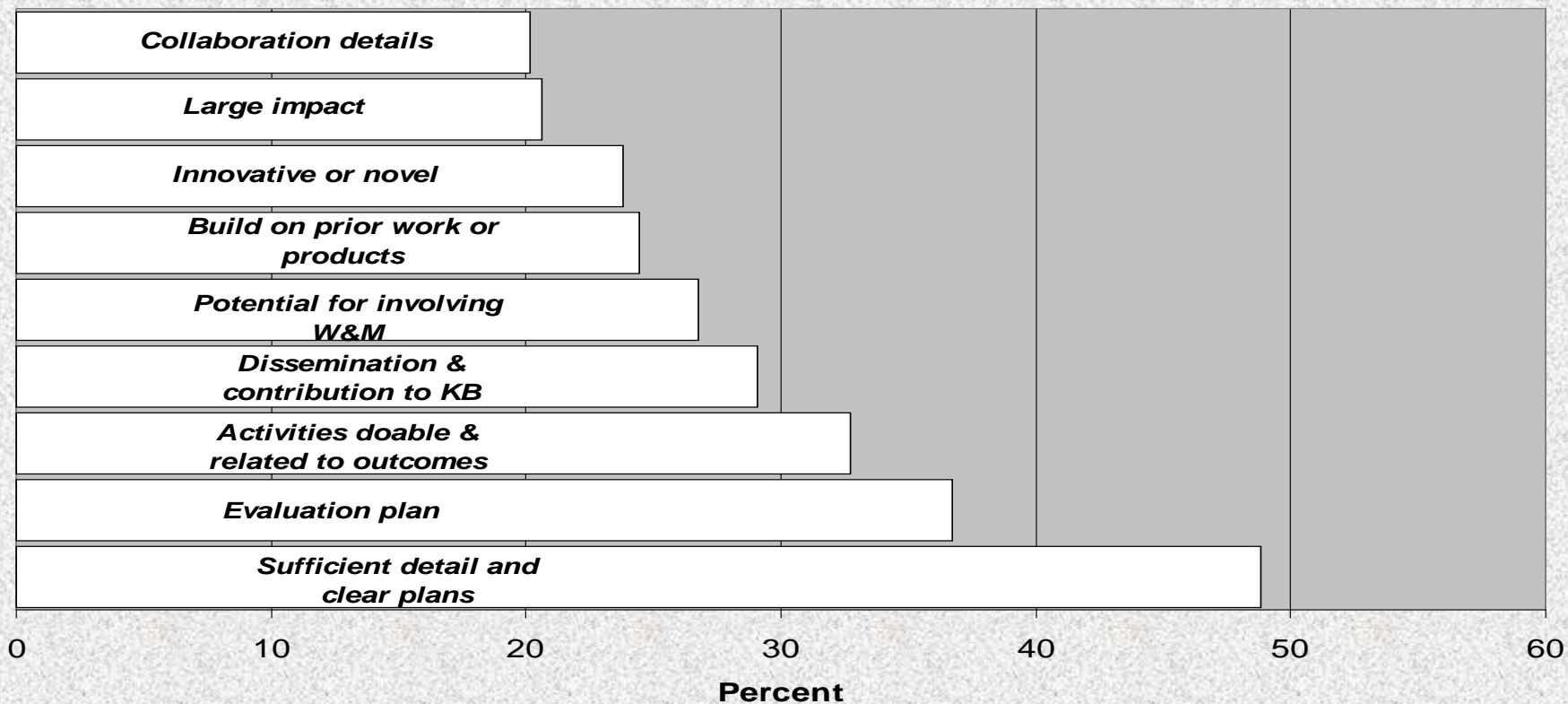
Strengths Cited in More Than 20 % of the Panel Summaries





Most Common Weaknesses

Weaknesses Cited in More Than 20 % of the Panel Summaries





Write a Proposal to Answer Reviewers' Questions

What Major Societal Problem will your research help to solve?

What Grand Challenge does your research help to address?

What International or National need does your research fulfill?



Vision/Goals

What steps must be completed to achieve the stated goals?

What specifically will be pursued in this research to obtain the desired outcomes?



Objectives



Write a Proposal to Answer Reviewers' Questions

What has been done previously by others in this research area?

Why is your approach promising?

Why is the research goal and objectives to be pursued important?

What evidence supports that this is a good research idea to pursue?

} *Rationale*

How will the research study be conducted?

What research methods will be used?

What research variables will be tested?

What research equipment will be used?

} *Methodology*



Write a Proposal to Answer Reviewers' Questions

- What experimental design will be used?
 - What participant group will be used?
 - What control group or baseline testing measures will be used?
 - What data collection instruments will be used?
 - What data collection techniques will be used?
 - What data collection protocol will be used?
 - What data analysis techniques and approaches will be used?
 - What statistical analysis techniques will be used?
 - What timeline will be used for the research work?
 - What management strategy will be used oversee this research?
 - What major milestones will be met in the research and when will they be met?
- Methodology*



Write a Proposal to Answer Reviewers' Questions

What approaches will be used to determine if the research was successful in meeting its goals and objectives? }

Evaluation

What outlets will be used to share the research findings? }

Dissemination

What impact will this research had on the discipline or society? }

Significance of research work



Evaluation Plan Should Include

- **Formative assessment**
 - Provides feedback during the design and implementation phases
 - Helps monitor progress toward outcomes
- **Provide details on tools & experimental design**
 - Describe how
 - » Students will be "surveyed",
 - » Faculty will be "asked",
 - » Grades will be "compared"
 - Indicate who will do these tasks
 - Indicate who will analyze and interpret the data
 - Try to measure deeper learning
 - Collect demographic data on student populations



Evaluation Tips

- ~~Get help at the beginning – in the~~ proposal writing phase
 - Involve an **expert evaluator**
 - Consider **outside** (independent) evaluator
- Consult other sources
 - User Friendly Handbook for Project Evaluation
 - » <http://www.nsf.gov/pubs/2002/nsf02057/start.htm>
 - Existing tools
 - Science education literature



Dissemination Plans Tips

- Be more **proactive** in promoting website & materials
- Integrate community building , dissemination and evaluation
- Target and involve a **specific sub-population**
 - Those who teach similar course at other locations
 - Ask them to review various products, data, and experimental approaches
 - Work with them to **organize**
 - » Email exchanges and listserves
 - » Informal meeting at a conference or on-campus
 - » Faculty development workshops (on-campus and at conferences)
 - Explore beta test sites



Dissemination Plan Tips

- Be specific about how the project will serve as a "pilot"
 - Strategy for evaluating and disseminating
 - Strategy for getting "buy-in" by others
- Be more specific in publication efforts
 - Indicate the **specific conferences and journals**
 - » Include conference travel and journal page charges in budget
 - » Include a **tentative title & description** of paper
 - Explore **other venues**
 - » Science news publication and lay press
 - » Professional society and specialty listserve



Significance of the Work /Broader Impact

- The Broader Impact focuses on the benefit to society at large as a result of your research result
- Means to benefit society include:
 - Economic/environment/energy/health/safety
 - Education and training
 - Providing opportunities for underrepresented groups
 - Improving research and education infrastructure

The key issue is how your research results will be applied — why would the general public care?



Getting Involved





Be A Reviewer

-
- Proposal review is an important service to your community
 - There's no better way to see how the system works
 - There's no better way to understand what makes a winning proposal
 - If you think the system is unfair, try being part of it



How to Volunteer

- Contact your program director
- E-mail a brief (1-page) bio to your program director
- Be sure to include your contact information
- Indicate your areas of expertise

This will get you an expense-paid trip to visit your program director