How to Craft a Winning Proposal?

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Start your independent research career as soon as possible

• **Independent publications**
  • *no mentors; research ownership*

• **Research grants:**
  • Single investigator grants
    • Beginning grants: Murdock Trust, PRF, RCSA
    • Federal Funding: NSF, NIH, DOE, NASA
  • Collaborative grants
  • Instrumentation grants (build capacity)
Start your independent research career as soon as possible (Proposal prep)

- Develop your independent research ideas as early as possible
- Become familiar with the big players in the field
- Network
- Think outside the box, be creative!
- Become familiar with opportunities for beginning faculty
- Prepare a “grant-writing” calendar
- Write a five year plan for your research
Start with an idea...

DEVELOP

SHARE

REVISE

Proposal Development Process

What makes an excellent proposal?

• A **carefully** written plan
• An **exciting** subject
  • A **creative** approach
  • **New ideas** to solve long-standing problems
  • **High risk/high reward**
  • **Transformative** outcomes
• **Established** collaborations (if needed)
• **Realistic** expectations
• A plan tailored to a **specific foundation/program**
• **Feedback from colleagues!**
Every Part Counts

- **Title** – needs to reflect proposal’s goals
- **Abstract** – succinct description of proposal’s goals
- **Research Narrative** – as much detail as possible
- **Suggested Reviewers** – experts, please!
- **Budget 1** – request equipment only if needed to accomplish your plan
- **Budget 2** – prioritize student expenses
- **Short Bio** – brief and direct

“"I didn’t have time to write a short letter, so I wrote a long one instead”
Mark Twain
The First Page

- Originality
- Ownership
- Working Hypothesis
- Approach and Methodology
- Feasibility

- Significance
- Science in context of existing challenges
- Relevant citations

- Long term goals
- Student Involvement
- Research Environment at your Institution
Common Declination Reasons

- Plan reviews below the *competition bar*
- Research is *derivative* of previous work with mentors
- Unclear *significance*
- **Feasibility** case is not compelling
- Narrative *lacks detail*, too vague
- Lack of clearly stated *hypothesis*
- Lack of clearly stated *goals*
- Omissions of *relevant literature*
- *Unrealistic expectations*

If turned down and the program allows, **RESUBMIT!**
Avoidable Annoyances

- Proposal **not tailored** to program – Is this Cottrell Scholar or NSF CAREER?
- **Sloppy writing**, too small font size, ineligible figures, typographical errors
- Too much **jargon**
- **Overstated** significance
- **Empty space**
- Not supported claims, **missing relevant references**
- “Suggested reviewers” who are **not experts** in the field
- **Publications** not the same as **Manuscripts in Preparation**
- **External funding** not the same as **Internal Support**

“The less said the better”
*Jane Austen*