

### NSF Proposal Writing Strategies

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# **Statistics Program Officers**







### Statistics Program

- Support research in statistical theory & methods, including research for applications to any domain of science and engineering
- Regular Statistics Program: December 1–15, 2021
- Faculty Early Career Development Program (CAREER, July)
- Conferences and Workshops in the Mathematical Sciences: anytime with sufficient lead time (>6 months)



### Grant Proposal Writing Resources in the Web

#### Writing NSF Proposals

https://www.nsf.gov/pubs/1998/nsf9891/nsf9891.htm

https://www.cs.cmu.edu/~sfinger/advice/advice.html

 Grant Proposals (or Give me the money!) – from a UNC website

https://writingcenter.unc.edu/tips-and-tools/grant-proposalsor-give-me-the-money/

CAREER writing workshops:

https://nsfworkshop.ccny.cuny.edu/

https://cisecareerworkshop.web.unc.edu/





# Preparing an NSF Proposal

Endorsed by Program Officers:

"Grant writing is like playing the stock market; there is seldom a guarantee that your efforts will be rewarded, but the more you know about the process and the more you use this knowledge, the greater the probability for success."

Another Analogy: Writing grant proposals is similar to competing in the Olympics!



### **Review Process**

Panel Review –(DMS runs ~70 panels per year)

- > At least 3 reviews for each proposal
- Panel discussion and ranking
- Panel summary
- A panel typically runs 2–3 days and reviews between 40–60 proposals
- Program Officers make funding decisions taking into account panel recommendations and addressing budget constraints and portfolio balance



# **Criteria for Review of Proposals**

#### Intellectual Merit (IM):

- The intellectual Merit criterion encompasses the potential to advance knowledge.
- WHAT? WHY? HOW? WHO? COULD? WHERE?
- Broader Impacts (BI):
  - The Broader Impacts criterion encompasses the potential to benefit society and contribute to the achievement of specific, desired societal outcomes.





## **Proposal Preparation Tips**

- 1. Decide if your proposal <u>fits</u> the program
- 2. Check for <u>compliance</u> (Read the Grant Proposal Guide, Special Program Reqirements)
- Keep in mind the audience of reviewers and POs (a mix of experts and non-expert laypeople)
- 4. Make sure the project goals are <u>clearly defined</u>
- 5. Make it <u>readable</u> (not too technical, <u>check for</u> <u>errors</u>, avoid abbreviations, use recommended font size, the title is important)
- 6. Seek <u>advice</u> from more senior colleagues



### Few Proposal Preparation Tips

- 1. Narrative:
  - Provide a logical, easy to follow, compelling and coherent narrative
  - Draw <u>clear distinctions</u> between prior work and proposed research
  - Address clearly the <u>novelty</u> of the project
  - Quickly generate reviewers' enthusiasm for the idea
  - Avoid excessive jargons
- 2. First impressions are important (check for errors, avoid abbreviations, use recommended font size)
- 3. Effective Title and Project Summary



### How to NOT get funded

### "I've done great work; send money" "Here are some fascinating problems." End. Using a small font size





# How to NOT get funded

- Not describing the importance of the work to the field
- Not describing how the proposed work differs from:
  - other approaches
  - work you have already done
- Missing relevant and important literature
- Giving no indication of potential difficulties or of plans to circumvent them
  - Paying no attention to broader impacts



# How to NOT get funded -- Ineffective Strategies

- "Shop a proposal around" from Program to Program
  - It can waste time (not only yours)
  - Program Directors talk to each other
  - We may transfer a proposal to another program
- Resubmit the same proposal next year
- Re-brand, combine, stretch or shoehorn
- Submit multiple proposals without consulting with the Program Director(s)



### Read the Program Solicitation



- Note the goals of the program
- Note the types of activities eligible for funding
- Note the required elements of a proposal
- Note the review criteria
- "should" = "must"
- Boilerplate versus the "meat"

#### Make a checklist!





## Final Remarks

- Getting help: previous awardees, mentors and colleagues
- Check the published abstracts on the NSF website: <u>http://www.nsf.gov/awardsearch</u>
- Volunteer as a reviewer! Email the PD or fill out the form at <u>https://www.nsf.gov/additional-resources.jsp?org=DMS</u>
- Subscribe to DMS listserv: <u>https://www.nsf.gov/mps/dms/about.jsp</u>
- Talk to Program Officers
  - JSM: DMS Meet & Greet; Speed Coaching
  - DMS virtual office hours: <a href="https://www.nsf.gov/events/index.jsp?org=DMS">https://www.nsf.gov/events/index.jsp?org=DMS</a>,

Coming up: November 18, 2021 (Register Now!)



### **Other Resources**

- Slides from past DMS VOH: <u>https://www.nsf.gov/mps/dms/presentations.jsp</u>
- Tips for new PIs: <u>https://www.nsf.gov/mps/dms/documents/</u> <u>DMS-VOH--2021-01-21.pdf</u>
- SASA Committee on Funded Research <u>https://www.amstat.org/ASA/Your-</u> <u>Career/External-Funding-Sources.aspx</u>



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### **QUESTIONS?**

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