NSF: UNDERSTANDING PROPOSAL REVIEW

RESEARCH AND FACULTY DEVELOPMENT FACULTY SUCCESS SEMINAR SERIES

Carly Cummings, PhD, CPRA
Director
Research and Faculty Development

Special Guest: Dr. Luke Harmon
Professor, Biological Sciences

Zoom participants: Please keep your microphone muted until the Q&A session

Please note that this session is being recorded
OFFICE OF RESEARCH AND FACULTY DEVELOPMENT

We provide proposal development assistance across the spectrum*

Meet goals in the UI strategic plan – grow research and creative efforts across all disciplines

Reach out to request service – uidaho.edu/orfd

*Not including budget preparation

All services are optional and are granted on a first come, first served basis
OFFICE OF RESEARCH AND FACULTY DEVELOPMENT (RFD)

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Morrill Hall
Room 103 – come say hello!
HELP US IMPROVE OUR SEMINARS

After the Q&A session: brief 3 question sli.do poll

- On a scale from 1-5, how helpful was this seminar?
- What did you like most about this seminar?
- How can we improve this seminar?

www.slido.com or use the sli.do app (Use code #FSS)
AUDIENCE POLL

☑ Submitted a proposal to NSF?
☑ Served as a reviewer for NSF?
☑ Feeling confident in understanding the NSF proposal review process?
OBJECTIVES

- Understand what happens when you submit an NSF proposal
- Tips for a successful review
- Learn from our expert about what happens on the “inside”

Enhance the competitiveness of your next NSF proposal!
NSF MERIT REVIEW PROCESS


- 49,415 proposals competitively reviewed; 33,966 reviewers

- Funding rates vary among directorates

- Average number of proposals to be submitted before an award is made = 2.4

- NSF’s goal is to inform at least 75% of PIs of funding decisions within six months of receipt of their proposals
NSF MERIT REVIEW PROCESS
NSF MERIT REVIEW PROCESS

Proposals returned without review (RWR)

<table>
<thead>
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</tr>
</thead>
<tbody>
<tr>
<td>Number of Proposals RWR</td>
<td>1505</td>
<td>1287</td>
<td>1741</td>
<td>2628</td>
<td>1794</td>
<td>1813</td>
<td>1871</td>
<td>1659</td>
<td>1843</td>
<td>1399</td>
<td>1144</td>
</tr>
<tr>
<td>Percent of all Proposal Decisions</td>
<td>3.3%</td>
<td>2.8%</td>
<td>3.7%</td>
<td>4.5%</td>
<td>3.4%</td>
<td>3.6%</td>
<td>3.7%</td>
<td>3.3%</td>
<td>3.6%</td>
<td>2.8%</td>
<td>2.3%</td>
</tr>
</tbody>
</table>


Appendix 14 - Proposals Returned Without Review, by Reason

<table>
<thead>
<tr>
<th>Reason</th>
<th>Number returned</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inappropriate for NSF</td>
<td>56</td>
</tr>
<tr>
<td>Insufficient lead time</td>
<td>8</td>
</tr>
<tr>
<td>Preliminary proposal did not result in an invitation to submit a full proposal</td>
<td>4</td>
</tr>
<tr>
<td>Duplicates a proposal in review</td>
<td>50</td>
</tr>
<tr>
<td>Format problem</td>
<td>147</td>
</tr>
<tr>
<td>Does not contain a required section</td>
<td>299</td>
</tr>
<tr>
<td>Not responsive to solicitation, program announcement, or Proposal and Award Policies and Procedures Guide</td>
<td>608</td>
</tr>
<tr>
<td>Received past the deadline</td>
<td>136</td>
</tr>
<tr>
<td>Not substantially revised after a previous declination</td>
<td>75</td>
</tr>
<tr>
<td>Duplicates an existing award</td>
<td>16</td>
</tr>
<tr>
<td>TOTAL</td>
<td>1,399</td>
</tr>
</tbody>
</table>
NSF MERIT REVIEW PROCESS

- Fair, competitive, transparent, in-depth review process
  - Gold standard

Details [here](#)
Phase II – steps 4-7

- **Step 4**: PO receives proposal and selects peer reviewers
  - Compliance checking
  - At least 3 external reviewers
    - *Ad hoc*, panel, or combination
    - Varied levels of expertise – consideration when writing
    - Not standing panels (like NIH) – lots of variability
  - Some categories *not* externally reviewed (RAPID, EAGER, RAISE)
Phase II – steps 4-7

- **Step 5**: External peer reviewers evaluate proposals
  - **2 NSF review criteria** (Intellectual Merit, Broader Impacts) – 5 considerations
    - 1. What is the potential for the proposed activity to:
      - Advance knowledge and understanding within its own field or across different fields (IM); and
      - Benefit society or advance desired societal outcomes (BI)?
    - 2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
    - 3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
Phase II – steps 4-7

- **Step 5**: External peer reviewers evaluate proposals

  - **2 NSF review criteria** (Intellectual Merit and Broader Impacts) – cont’d
    - 4. How well qualified is the individual, team, or organization to conduct the proposed activities?
    - 5. Are there adequate resources available to the PI (at the home organization or through collaboration) to carry out the proposed activities?

- Solicitation-specific review criteria
- Culture of the panel influences scoring
- Reviewers make funding recommendations to PO (not funding decisions)
The following elements should be considered in the review for both criteria:

1. What is the potential for the proposed activity to
a. advance knowledge and understanding within its own field or across different fields (Intellectual Merit); and
b. benefit society or advance desired societal outcomes (Broader Impacts)?
2. To what extent do the proposed activities suggest and explore creative, original, or potentially transformative concepts?
3. Is the plan for carrying out the proposed activities well-reasoned, well-organized, and based on a sound rationale? Does the plan incorporate a mechanism to assess success?
4. How well qualified is the individual, team, or institution to conduct the proposed activities?
5. Are there adequate resources available to the PI (either at the home institution or through collaborations) to carry out the proposed activities?

In the context of the five review elements, please evaluate the strengths and weaknesses of the proposal with respect to intellectual merit.

In the context of the five review elements, please evaluate the strengths and weaknesses of the proposal with respect to broader impacts.

Please evaluate the strengths and weaknesses of the proposal with respect to any additional solicitation-specific review criteria, if applicable.
Phase II – steps 4-7

- **Step 6**: PO Analyzes input and makes recommendation to Division Director
  - External reviews
  - Maintaining a balanced portfolio
    - Capacity building in a new/promising research area
    - Geographical considerations (EPSCoR state)
    - Early career v. established PIs
  - Other

**TAKE HOME**: Funding decisions not necessarily determined by the peer review recommendations
CONSIDER YOUR AUDIENCE

REVIEWER PERSPECTIVE:

Peers
- Potentially varying backgrounds
- Proposal needs to be understood by an educated individual who isn’t necessarily an expert in your field
- But! You also need to provide the details that experts in your field will expect to see

Volunteers
- Consider their state of mind...
CONSIDER YOUR AUDIENCE

It is no longer sufficient to write a proposal aimed only at the experts in the field. Investigators need to outline their research, its contribution, and its impact to a diverse audience.

Jan 4, 2018 Article:
https://www.chronicle.com/article/10-Common-Grant-Writing/242150
Phase II – steps 4-7

- **Step 7**: Division level funding decisions
  - Division of Grants and Agreements for award processing
  - PI notified
    - Context of proposal review (#s)
    - Individual review comments (anonymous)
    - Panel summary, if applicable
COMMON REASONS FOR LOW REVIEW RATINGS

- No well defined hypotheses or tests of same. Lack of focus. “Why all the rambling, this seems like a fishing expedition.”

- Scope of the work is out of proportion to the budget and amount of time needed to do the work.

Source: How to get NSF funding: a view from the ‘inside’
“This proposal suggests a clear, elegant, well-documented approach to a problem that has plagued this field for decades.”

“The PI has a beautiful plan. Undergraduates or new graduate students can step right into this work, yet it solves a major problem and will be publishable in a first-rate journal.”

“This reads like a dream. I have rarely seen a proposal, even from long-established investigators, that shows such careful thought and meticulous presentation.”

Source: How to get NSF funding: a view from the ‘inside’
NSF REVIEWER FEEDBACK

- Scores:
  - Excellent (E), Very Good (V), Good (G), Fair (F), Poor (P)
- Strengths and weaknesses
- How well addresses both review criteria
- Receive individual reviewer comments and scores
- Receive panel summary, if appropriate – THIS IS KEY
- PO may provide individual comments to applicant

- Questions directed to PO
VOLUNTEER TO BE AN NSF REVIEWER

Why?
- Watch how the reviewers work – what they like/dislike
- Read good (and bad) proposals
- Networking with peers and PO

How?
- Reach out to PO
  - Introduce yourself and research experience
  - Indicate interest in serving on a panel
  - Send them 2-pg NSF Biographical Sketch
NSF REVIEW RESOURCES

- Introductory video (6:12)

- Talk with your NSF funded peers

- Attend an NSF Grants Conference
  - May 18-19, 2020, Minneapolis, MN
  - 2019 presentation on merit review process
LET’S ASK OUR EXPERT

DR. LUKE HARMON

Quick introduction about research and NSF experience

Experience serving on NSF review panels
  ▪ Differences between programs/directorates?
  ▪ Surprising things you learned
  ▪ How this affected your proposal writing

What happens during an NSF panel meeting?
  ▪ Overview of process and role of PO

Advice to early career PIs
FACULTY SUCCESS SEMINARS
Let Us Be Your Guide
Through the Proposal Development Process

JOIN US IN IRIC 305
12:30 P.M. – 1:30 P.M. PT

Can’t join us in person? Then join us live via Zoom: uidaho.zoom.us/j/798224314. Each seminar will be recorded and be available on our website.
### FALL 2019

**Sept. 4**  HERC IGEM Info Session  
**Sept. 11**  Find Funding Opportunities: Intro to Pivot  
**Sept. 25**  NSF CAREER All Year: An Introduction  
**Oct. 2**  W.M. Keck Foundation Info Session  
**Oct. 16**  Tips for Successful Proposal Writing  
**Oct. 23**  NSF CAREER All Year: Getting Started  
**Oct. 30**  Exploring Humanities Funding Opportunities  
**Nov. 13**  MW CTR-IN Funding Opportunities  
**Nov. 20**  NSF CAREER All Year: Integrating the Research and Education Plans  
**Dec. 11**  M.J. Murdock Trust Commercialization Initiation Program Info Session

### SPRING 2020

**Jan. 22**  Developing Successful Project Management Plans for Large Proposals *(Rescheduled Apr 15)*  
**Feb. 5**  NSF: Broader Impacts Really Do Matter!  
**Feb. 12**  NIH: Funding Mechanisms Overview (R03, R21, R01)  
**Feb. 19**  NIH: Developing Your First RO1 Proposal  
**Mar. 4**  NIH: Understanding Proposal Review  
**Mar. 11**  NSF: Understanding Proposal Review  
**Mar. 25**  Fulbright Faculty Scholar Program Info Session  
**Apr. 1**  Find Funding Opportunities: Intro to Pivot  
**Apr. 8**  NSF MRI: Creating Competitive Proposals  
**Apr. 15**  Developing Successful Project Management Plans for Large Proposals

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**WE GUIDE THE DEVELOPMENT OF COMPETITIVE EXTERNAL GRANT PROPOSALS**

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Phone: (208) 885-1144  
Email: oder-rfteam@uidaho.edu  
Website: uidaho.edu/orfd
THANK YOU FOR COMING!

QUESTIONS?

BEFORE YOU GO...

Please take a brief 3-question slido poll

www.slido.com or use the slido app

Use code #FSS