Opinions on grant applications from a study section member

R grants
Career Stages of Funding Programs

- Pre-Bac: Institutional Training Grant (T34)
- Graduate/Medical Student: Institutional Training Grant (T32)
- Individual NRSA Fellowship (F31, F30)
- Institutional Training Grant (T32)
- Individual NRSA Fellowship (F32)
- Post-Doctoral:
  - Pathway to Independence Award (K99/R00)
  - Mentored Research Scientist Development Award (K01)
  - Mentored Clinical Scientist Development Award (K08)
  - Mentored Patient-Oriented RCDA (K23)
  - Mentored Quantitative RCDA (K25)
- Early:
  - Independent Scientist Award (K02)
- Middle:
  - Midcareer Investigator Award in Patient-Oriented Research (K24)
- Senior:
  - Senior Scientist Award (K05)

Graphic represents a small sample of NIH funding mechanisms available.
27 Institutes and Centers (IC)

Each with a different:
- mission & priorities
- budget
- funding strategy
Target the Grant to the Appropriate Institute and Study Section

• If the grant could fit the mission of multiple institutes, then target it to the one with the best pay line.

• Target the study section that has members who publish in your field with interest in your problem.
**Get to the right review group**

- Title, abstract, specific aims all point to the main goals of your project
- Attach a cover letter for the Center for Scientific Review Division of Receipt and Referral
  - suggest IC and review group assignment*
  - outline areas of key expertise needed for appropriate review
  - do not name specific reviewers

* Consult with Program Official
Understand the dynamics of peer review:

- Reviewers will review many applications
- Make your application easy to read and easy to understand
- The impact and significance should be clear throughout the application
- Convince them to be your advocate
  - *Get them on your side!*
Style Matters

• Make certain the grant is not too dense. Have sufficient white space so it is easy to find sections when the reviewer is going back to find specific points.
• Put the importance of the work and the major hypotheses to be tested up front and center.
• Graphical summaries of the hypotheses to be tested are powerful and should be incorporated early in the application.
## Align with Review Criteria

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<thead>
<tr>
<th>Scored Criteria</th>
<th>Application</th>
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<tr>
<td><strong>Significance</strong></td>
<td>Research Strategy</td>
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<td>a. Significance</td>
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<td><strong>Investigator(s)</strong></td>
<td>Biosketch - Personal Statement Letters of Support</td>
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<td><strong>Innovation</strong></td>
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<td><strong>Environment</strong></td>
<td>Facilities &amp; Other Resources</td>
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Develop a Strong Research Plan

Specific Aims

- Grab the reader immediately
- State long-term objectives AND expected impact
- Explicitly state hypotheses and research question
Develop a Strong Research Plan

Background/Significance

- Why is this research important?
- Expand on the specific aims
- Identify key themes of the literature and link them to the specific aims
- Critically analyze existing literature
- Document a solid theoretical basis for your study
- Include a graphical summary of your key hypotheses
Develop a Strong Research Plan

Preliminary Studies/Progress Report

- How previous work -- by you, your team, and others -- leads to this study
- Demonstrate your experience, competence and likelihood of continued success
- Must flow logically from literature review and major themes of the problem area
Approach

- Does your plan flow logically from the literature review and prior studies?
- How will each hypothesis be tested?
- Do your measures capture the variables needed to test hypotheses?
- Why did you choose those measures?
- Methods and analyses must match
Develop a Strong Research Plan

Common Miscues

*Failure to ...*

- Document why the problem is important
- Distinguish empirical findings from speculation
- Critically analyze key themes in literature
- Consider alternative perspectives
- Read, understand, and cite the crucial studies
- Document your ability to perform the experiments – letters from investigators you’ve never worked with don’t really help your case
Develop a Strong Research Plan

More Miscues

- Superficial of unfocused research plan
- Lack of sufficient detail
- Unrealistically large amount of work
- Lack of new or original ideas
- Outdated methodology
- Poorly written, difficult to follow
- Figures that are too small to read when printed and contain too much content
Ask Collaborators to Review Your Application

- **Show your draft application to:**
  - Your collaborators
  - A colleague that does not know what you intend to do
  - Someone who is not your best friend

- **Draft “reviewers” must understand:**
  - What you intend to do
  - Why you believe it is important to do
  - Exactly how you’re going to do it.

*If they don’t get it, you must revise your application!*
Hallmarks of a Competitive Grant Application

- Strong significance to an important problem in public health or fundamental biological problem: IMPACT is high
- High degree of novelty and innovation
- Strong track record by a well qualified applicant – for a new investigator, build on successful post-doctoral studies
- Clear rationale
- Relevant and supportive preliminary data
- Clear and focused approach that provides unambiguous results
- Careful attention to details
  - Spelling, punctuation, grammar, fonts, clarity of data, error bars, spelling, etc.
  - Make figures readable and understandable