Funding Your Research
You have lots of ideas...
Now all you need is money
Funding Your Research

Where should I send my grant?

How does the review process work?

What can I do to optimize my chances for funding?
Why should you listen to me?

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NIH DEV2 Study Section ad hoc member 2006, 2009

NIH DEV1 Study Section Regular Member 2011-present
Where should I send my grant?

Research Inst.  11-260 R01; 11-261 R21  11-572 Standard
Undergrad. Inst.  12-006 R15  11-572 RUI

Average $/year $225,000  Direct costs $150,000
Number Years 5_{R01}, 2_{R21}, 3_{R15}  3

Deadlines

New R01: Feb 5, June 5, Oct 5.

Resubmission? Once

Preproposal: Jan 12
Full: Aug 2
No
Funding Your Research

Where should I send my grant?

How does the review process work?

What can I do to optimize my chances for funding?
NSF reviews grants in two phases

**Phase One**

Jan 12
Preproposal
Due (4 pages)

NSF assigns to Integrative Organismal Systems

Program Officer chooses 3 reviewers

Peer Review
March 19-23

Program Officer Recommendation
May 15

If NO,
rewrite next year

If YES,
submit Full proposal

NSF reviews grants in two phases

**Phase Two**

- Aug 2
  - Full proposal due (15 pages)
- NSF assigns to IOS
- Steve Klein chooses 3-8 reviewers
- Peer Review Oct 15-22
  - “Panel”
- Program Officer Recommendation Dec 1
- Business Review
- Award Finalized
- Start Date Jan 1
What happens at panel?

1. Grants reviewed CONFIDENTIALLY, by category: Regular and Collaborative CAREER RUI

2. Applications encompass broad areas

How does this diversity affect your writing?
What happens during review?

Primary Reviewer:
- Summarizes project
- States all scores
- Critiques grant

Secondary Reviewer:
- Adds to strengths or notes other weaknesses
- Adds insight from mail reviewers

Reader: Weighs in with big picture

Intellectual Merit
Broader Impacts
What criteria guide the reviewers?

**Phase One: Preproposals**
- Intellectual Merit
- Broader Impact

**Phase Two: Full proposals**
- Intellectual Merit
- Broader Impact

What happens during review?

1. **Primary Reviewer:**
   - Summarizes project
   - States all scores
   - Critiques grant

2. **Secondary Reviewer:**
   - Adds to strengths or notes other weaknesses
   - Adds insight from mail reviewers

3. **Reader:** Weighs in with big picture

**Panel Discussion:**
- Clarify overall impact
- Resolve differences

**Place on board:**
- High, Medium, Low Priority

**Intellectual Merit**
**Broader Impacts**

Steve Klein, NSF
Sat. July 21, 4:05
Any questions so far?
NIH reviews grants 3 times/year

Feb, June, Oct
Full proposal Due (13 pages)

Center for Scientific Review assigns to 1) Institute (PO); and 2) Study section (SRO)

Scientific Review Officer chooses 3 reviewers

Peer Review June, Oct, Feb “Study section”

Institute and Council Review Oct, Feb, June

Business Review

Award Finalized

Start Date Jan, May, Sep

YouTube Videos & more:
# How does Institute affect my grant?

Center for Scientific Review assigns to:

1. **Institute**

### Institute Assignments

<table>
<thead>
<tr>
<th>Field</th>
<th>Institute</th>
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<tbody>
<tr>
<td>Aging</td>
<td>Alcohol Abuse &amp; Alcoholism</td>
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<tr>
<td>Biomedical Imaging &amp; Bioengineering</td>
<td>Cancer</td>
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<tr>
<td>Deafness &amp; Other Communication Disorders</td>
<td>Dental &amp; Craniofacial</td>
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<td>Environmental Health Sciences</td>
<td>Eye</td>
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<td>Heart, Lung, &amp; Blood Research</td>
<td>Human Genome Research</td>
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<tr>
<td>Minority Health &amp; Health Disparities</td>
<td>Neurological &amp; Stroke</td>
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<tr>
<td>Allergy &amp; Infectious Disease</td>
<td>Child Health &amp; Human Development</td>
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<td>Arthritis, Musculoskeletal, &amp; Skin</td>
<td>Drug Abuse</td>
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<tr>
<td>Complementary &amp; Alternative Medicine</td>
<td>Fogarty International Center</td>
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<tr>
<td>Diabetes, Digestive, &amp; Kidney</td>
<td>Library of Medicine</td>
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<td>Drug Abuse</td>
<td>Mental Health</td>
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<tr>
<td>General Medical Sciences</td>
<td>Research Resources</td>
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</tbody>
</table>

*Sue Haynes, NIH, Sat. July 21, 4:45*
Which study section suits my grant?

Center for Scientific Review assigns to
2) Study Section

Five main divisions of scientific topics branch into
25 “Integrated Review Groups” with
240 “Study sections”

Some Likely IRGs for Developmental Biologists:
  Cell Biology
  Molecular, Cellular, & Developmental Neuroscience

http://public.csr.nih.gov/StudySections/IntegratedReviewGroups/Pages/default.aspx
Which study section suits my grant?

Example: Cell Biology IRG

Study Sections

- Biology of the Visual System [BVS]
- Nuclear and Cytoplasmic Structure/Function and Dynamics Study Section [NCSD]
- Cellular Mechanisms in Aging and Development Study Section [CMAD]
- Cellular Signaling and Regulatory Systems Study Section [CSRS]
- Development-1 Study Section [DEV1]
- Development-2 Study Section [DEV2]
- Intercellular Interactions Study Section [ICI]
- Membrane Biology and Protein Processing Study Section [MBPP]
- Molecular and Integrative Signal Transduction study section [MIST]

What criteria guide the reviewers?

**Areas**
- Significance
- Investigator
- Innovation
- Approach
- Environment

**Possible Scores**

- **High:** 1-3 Extremely strong; No or a few minor weaknesses
- **Medium:** 4-6 Strong but... Many minor or moderate weaknesses
- **Low:** 7-9 Some strength but... Major weaknesses

See also: scoring_system_and_procedure.pdf
What happens at study section?

1. New Investigator R01s reviewed first
   Preliminary scores rank applications
   Top 50% discussed

2. Other R01s reviewed
   Top 50%

3. All R21s
   Top 50%

4. All R15s
   Top 50%

For each category, any participant can ask to review a grant that missed the 50% cut off.
What happens during review?

1. **Primary Reviewer:**
   - Summarizes project
   - Discusses: Significance, Investigator, Innovation, Approach, Environment

2. **Secondary Reviewer:**
   - Adds to strengths or notes other weaknesses

3. **Tertiary Reviewer:**
   - Weighs in with big picture

Panel Discussion:
- Clarify overall impact
- Resolve differences

All members vote a score:
- Range 1-9: Based on reviewers’ scores
Questions?
Funding Your Research

Where should I send my grant?

How does the review process work?

What can I do to optimize my chances for funding?
How can I improve my chances?

1. Start with your best idea.

2. Help the reviewer help you.

3. Write like you care.
1. Start with your best idea.

Ask yourself:
What is known and what are the big gaps in the field?
Why is this process interesting and important?
Why is your system a good model to address these questions? (How does it complement others’ efforts?)

Talk to a senior colleague. **EARLY in the process**
Get their perspective: ideas, methods, concerns.

Be realistic.
Create a time line and a real budget.
Help the reviewer help you.

Set the stage:

- What is known and what are the big gaps in the field?
- Why is this process interesting and important?
- Why is your system a good model to address these questions? (How does it complement others’ efforts?)
- What have you learned so far?
- What will be the impact of the proposed experiments?

Significance     Innovation     Investigator
Intellectual Merit     Broader Impact
Help the reviewer help you.

Be explicit:

What is your central question?
What is your hypothesis?

Organize each aim with sub headings:

- Logic and Rationale
- Methods
- Predicted Results and Interpretations
- Potential Problems and Alternative Strategies

Address all the review criteria:

Significance, Innovation, Investigator, Approach, Environment
Intellectual Merit, Broader Impacts
3 Write like you care.

Get help.
Ask a senior colleague for an example “good” grant.
Ask a colleague to critique a draft.

Demonstrate scholarship.
Show the key data, with stats.
Cite the papers that support your arguments.

Be clear and CONCISE.
Use active voice. (See also Fiske. 2010. Nature 464: 312.)
Create schematics to illustrate concepts.
Spell check; grammar check; proofread your grant.
Questions?
Funding Your Research

Where should I send my grant?
   Everywhere, targeting the right funding mechanism.

How does the review process work?
   Learn the process so you can put it to work for you.

What can I do to optimize my chances for funding?
   Best idea; help the reviewer; write like you care.