

Good Grantsmanship: The Key to Success

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Gynaecology & Medicine**

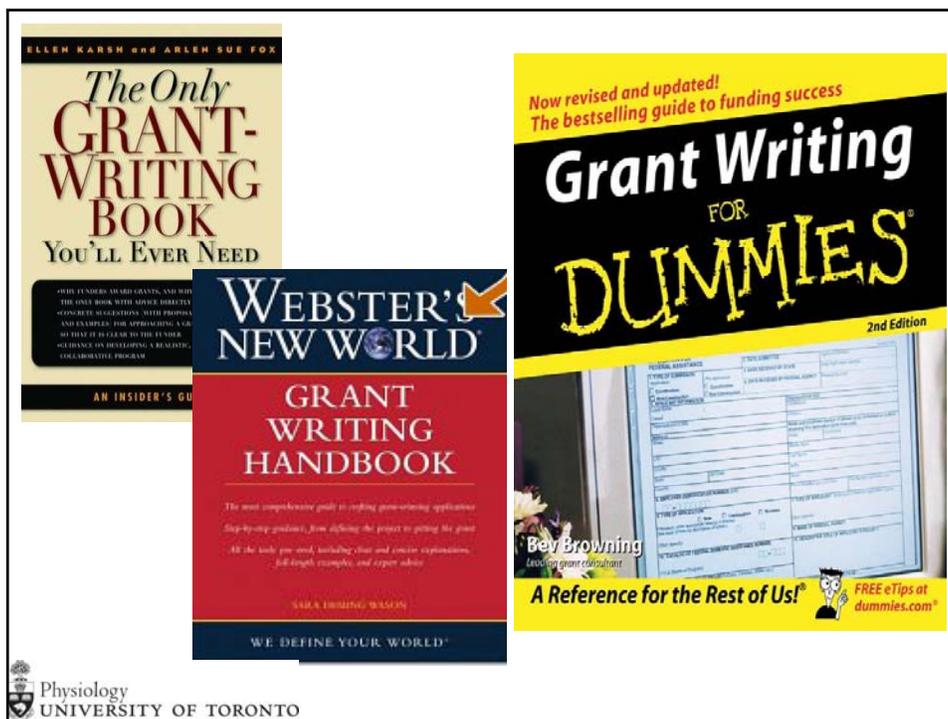


My Qualifications

- Had many grants rejected
- Written >\$18 million research proposals
 - Been funded ~\$12 million
- Been a member of many study sections
 - Endocrinology panel CIHR
 - Personnel support
- Chair of a large Department, which mandates internal peer review

Outline

- **Resources**
- **Why is grantsmanship important?**
- **The Application**
 - Timeline
 - Writing
 - Budget
- **The Review**
- **The Result**



 Physiology
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THE ART OF GRANTSMANSHIP

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Guidebook for New Principal Investigators

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Advice on Applying for a Grant, Writing Papers, Setting up a Research Team and Managing Your Time

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Institute of Genetics, CIHR

Roderick McInnes
Brenda Andrews
Richard Rachubinski

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Grant Application Basics

On This Page:

- [What Does NIH Look For?](#)
- [Who Is Eligible for an NIH Grant?](#)
- [Finding a Funding Opportunity](#)

What Does NIH Look For?

NIH funds [grants](#), [cooperative agreements](#), and [contracts](#) that support the advancement of fundamental knowledge about the nature and behavior of living systems to meet the [NIH mission](#) of extending healthy life and reducing the burdens of illness and disability. While NIH awards many grants specifically for research, we also provide grant opportunities that support research-related activities, including: construction, training, career development, conferences, resource grants and [more](#).

We encourage:

1. **Projects of High Scientific Caliber**

NIH looks for grant proposals of high scientific caliber that are relevant to public health needs and are within [NIH Institute and Center \(IC\)](#) priorities. ICs highlight their research priorities on their Web sites. Applicants may want to contact the appropriate Institute or Center to discuss the relevancy and/or focus of the proposed research before submitting an application. NIH also has a number of broad NIH-wide

Related Resources

What is NIH Looking For & Who is Eligible?

- [Eligibility section of the NIH Grants Policy Statement \(12/03\)](#)
- [Resources for New Investigators](#)
- [Small Business Funding Resources](#)

Guides, Tips, and Tutorials:

- [In-form ation for New Grantees](#)
- Internet



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Resources

http://grants.nih.gov/grants/grant_basics.htm

http://grants.nih.gov/grants/writing_application.htm

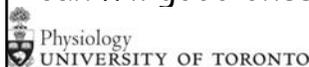
<http://www.cihr-irsc.gc.ca/e/27491.html>

<http://www.physiology.utoronto.ca/Assets/Graduate/Courses/PSL10266+grantsmanship.pdf>



Why is Grantsmanship important?

- It is a competition
- The quality of science in the applications 10% below the cutoff for funding is not significantly different from that in the 10% above the cutoff. Grantsmanship can make the difference
- The art of grantsmanship will not turn mediocre science into a fundable grant proposal. But poor grantsmanship will, and often does, turn very good science into an unfundable grant proposal
- Good writing will not save bad ideas, but bad writing can kill good ones



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Where to begin

- Pick the agency carefully
- Don't be afraid to contact the agency
- Determine the size of grants being awarded
- Talk to colleagues who hold grants from the agency (ask to read them!) or have sat on peer-review panels
- Who is on the study section?
- Begin to formulate / clarify ideas
- Start the process early
- Undertake pilot /preliminary studies

Timeline: Stick to it

•12 weeks:

- Write overall goal & each specific Aim
- Gather accompanying documents (complete 4 weeks before deadline)

•6 weeks:

- Start writing, a little every day

•4 weeks:

- Finish the 'junk'

•3 weeks:

- Draft to internal reviewers

•2 weeks:

- Meet with internal Peer-review panel

Internal Review is Essential

- Extensive and intensive internal peer-review is essential
- Version must be clean of typos and in near final
- Give the internal reviewers enough time. Finish the application long before the deadline
- MEET with internal reviewers at least 2 weeks before deadline
- Optimal: 3 reviewers. 2 experts, 1 generalist. Meet as a group with a Chair
- The meeting is critical; Constructive synergy

The Application: General Rules

- **Get it down:** rough, ugly, too long & incomplete
- **Get it right:** factually correct balanced
- **Get it pretty:** now do the sentence caressing
- **Get it out!**

The Application: General Rules

- Read the instructions CAREFULLY, FOLLOW THEM
- Successful applications must 'be a joy to read'
- Make display pleasant and attractive
- DO NOT, exceed the maximum pages
- High % of grants have mistakes 'A sloppy application=a sloppy scientist'
- Avoid abbreviations, acronyms & jargon
- Spell check and proof read!

The Application: Writing it!

- **Summary**
- **Progress**
- **Research Proposal**
 - **Background** (approx half allotted pages)
 - General background: the literature with your published work cited
 - Your preliminary results
 - Rationale

The Application: Writing it!

- **Research Proposal Continued...**
 - **Research plan (~50%):**
 - General objective & specific aims
 - Specific Aim 1 (proposed research, expected results, potential difficulties)
 - Aim 2 (max 3)
 - timeline
 - **Significance:** make a disease link

The Summary Page

- Most reviewers will at least scan this page, but will often have an equal vote. **MAKE IT GOOD!**
- Write it last
- **Set the stage** (1/3 summary page)
 - A couple of sentences to set the general stage, and then the research stage
- **Proposed research** (2/3 page)
 - Why you are undertaking the research
 - Why are you using a specific strategy
- **Significance:** Imperative, make a disease link if possible

The Application: Main Proposal

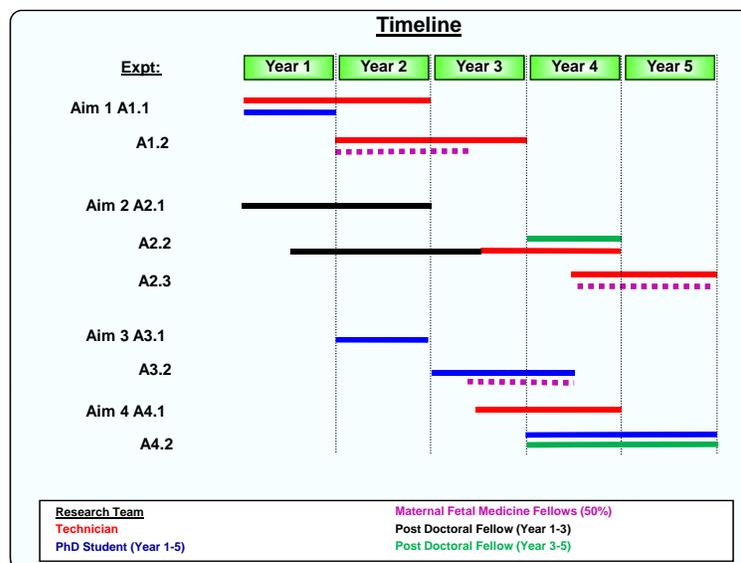
- Focused, original, novel, innovative & FEASIBLE
- Balance, between something 'sure' and something new, innovative / risky
- Set out alternatives if original ideas / strategies fail
- Use diagrams (a picture is worth 1000 words)
- Make it 'a joy to read'
- Never imply that a study will be done 'because it has never been done before'
- Clearly state why it is novel
- Organize presentation with appropriate headings, and sub-headings, using a simple numerical system
- Be sure to cite committee members when appropriate

The Application: The art

Paragraph Organization

- Use a great lead sentence for each paragraph
 - What is the paragraph about and why is it important
- Then elaborate on the topic
 - Generally less important
 - Inverted pyramid
- Normally done the wrong way around

Timeline



The Application: Common Mistakes

4 most common mistakes:

- Failure to give the big picture (why should the reviewer care?)
- Drowning the reviewer with details. Some are critical, but not throughout
- Failure to state rationales: why do these experiments need to be done?
- Hypotheses that are not tested by the experiments

Budget

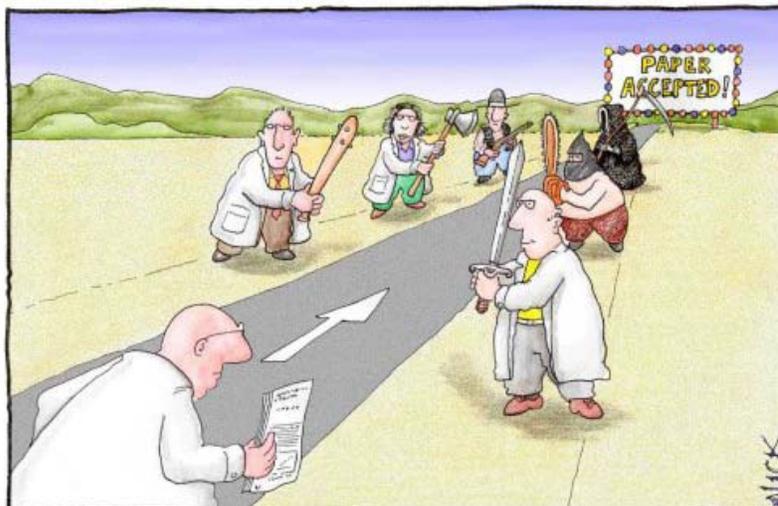
- Review committee normally recommend a budget
- Budget generally stands alone, everyone is expert
- Usually considered last, after grant discussed and scores decided
- Make sure the budget is realistic, well documented, appropriate and justified
- Give sufficient details to prevent arbitrary cuts
- For personnel, better if named and include CV is possible
- \$15K / researcher on project

Common Errors: General

- Proposal includes a lifetime of work and is unrealistically ambitious
- The literature and background reviews are uncritical
- There are no results of pilot studies or other preliminary data
- The timeline listed to be spent on research should be at least 50% (better 75%)
- The budget is unrealistic

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Most scientists regarded the new streamlined peer-review process as 'quite an improvement.'

External Reviewers

- Give this some thought. They are often used
- Recognized experts in the field. Tolerant and sympathetic to your hypothesis.
- Avoid new PIs, 'young faculty syndrome' excessively critical
- Must be 'arms length'
- Most agencies honor that certain individuals NOT be used

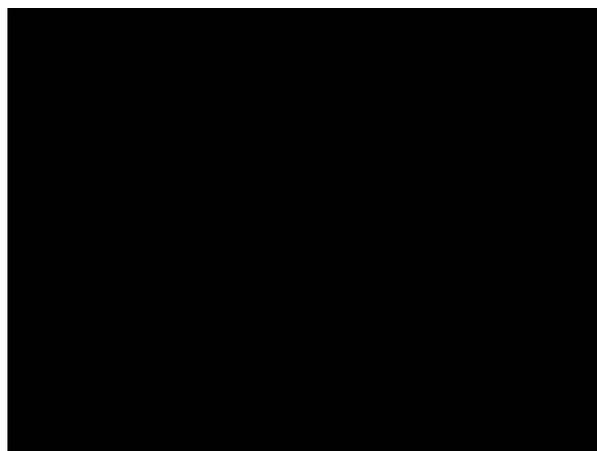
Investigator & Environment

- Well-trained?
- Productive?
- Independent from mentor/supervisor?
- Your own supervisory experience
- Other funding?
- Current environment?

Make sure you address all of these

The Panel Reviewers

- You want the reviewers to be your enthusiastic champions and advocates. Luke warm = fatal
- Most often not paid, but always busy
- Make it as easy as possible for them. Will likely review in bits & pieces. Organize your grant accordingly
- Assume a reviewer in a somewhat related field, not necessarily expert
- Need to aim at expert and generalist



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The Result

Funded: Celebrate you deserve it

Not Funded: Don't get discouraged

- Read reviews, put them away, take a break
- Panel discussion summary, critical
- Responding to the reviews
 - Be courteous and appropriately brief
 - NEVER imply incompetence
 - Address important issues factually and concisely

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