How to win an NIH grant – A reviewer's perspective

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Who am I?

- Study section member for about 5 years (off now)
- Recipient of my own R01 grant (originally an R29 young investigator grant)
- Recent unsuccessful applicant for new grant ☹
- PI of a T32 training grant, a T35 Summer Internship Grant and an R25 IMSD grant
- Benefited from advice from many senior colleagues
- Offered advice to many junior ones!

Elements of an R01 grant

- Title pages, including abstract
- Budget
- CVs (PI and key personnel)
- Four main (scientific) sections
  - A. Specific Aims
  - B. Background/Significance
  - C. Preliminary Studies
  - D. Methods
- Human and animal subjects
- Literature Cited
- Appendix

What do I do when Ann sends me a grant to review?

- Read the abstract, specific aims and background/significance sections to get a sense of whether there is something exciting and important being proposed
  - Is the problem important?
  - Does PI understand the motivating subject matter?
  - Is PI connected to subject matter scientists (potential for application) ?
  - Are the goals concrete and achievable?
  - Will the work have an impact?
  - Are there motivating datasets?
  - Is the proposed work new? Creative?
- This is **significance** element of the review criteria

What do I do next?

- Once significance is established, I evaluate the approach
  - Is there a clear and appropriate plan?
  - Does the applicant know the literature?
  - Has the applicant overlooked any major pitfalls or potential problems? Have they appropriately considered alternative approaches?
- How can I tell?
  - Section C (preliminary studies) tells me whether the approach has been at least partially tested out
  - Section D (methods) provides the details of exactly what is to be done.

What else am I looking for?

- **Innovation** – like to see creativity and imagination (but not too much!). Good to address problems that are a little "different"
- **Investigator** – like to see a strong track record (senior investigator), or strong potential (junior investigator)
  - Papers
  - Past grants/collaborations
- **Environment** – will it facilitate the work?
  - Collaborating investigators (subject matter and statistical), evidenced by co-investigators on the grant, or at least letters of support
  - Applied projects that provide real work motivation and data

A few special issues

- New investigators
- Writing style
- Dissemination plans
- Revised proposals

New investigators?

- More emphasis on potential than track record
- Involvement of senior colleagues as mentors
- Supportive institutional environment
- A little leniency in terms of detailed plans

Writing and presentation

Very important

- **Helps the reviewer!**
- **Gives confidence that the work can be achieved**
- **Speaks to applicant's ability to think through and present a logical plan**

Dissemination plans

- Does the applicant have a good publication track record?
- Do they have a record of publishing in subject matter as well as statistical journals? Do they describe plans for this?
- Will they make software available? Do they know what this involves?

What if you don't get funded the first time? (most don't!)

- Cry, brush off your ego and gear up to try again!
- Read the critique carefully, objectively, perhaps with a colleague. Typical issues include
  - Lack of significance/motivation
  - Vague plans
  - Lack of detail
  - Occasionally, scientific disagreement
- Talk to your NIH Project Officer

What if I am reviewing a revised proposal?

- **Responsiveness**
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- **Don’t criticize the reviewers!**

Preparing for a grant submission

- A year ahead of time, start thinking about your general focus. Find an important area where you are qualified to contribute
  - Seek advice of senior colleagues
  - Read successful grants (junior and senior)
  - Talk to NIH people
  - Look at NIH websites
- Block out time prior to submission
- Circulate your specific aims 4 months ahead of submission date. Seek advice
- Finish your first draft 2 months ahead. Seek advice and detailed input

My own experience

- Writing a grant is a lot of work, but it is
  - Satisfying
  - A focusing experience
  - Part of the process of research
- Study section critique can hurt, but it is wise to listen
- My recent unsuccessful experience? Lack of devoted time led to
  - Sloppy writing
  - Lack of detail

I plan to try again!

Other Grant Mechanisms

- **R03 grants**
- **Biostatistical Cores in PPGs and Center Grants**

Training Grants

- Program must be very strong (well focussed training plan, lots of good graduates)
- Must have strong grounding in applications. Most training grants are institute-specific
- PI must have strong training and administrative experience
- PI must have strong scientific record
- Should have lots of strong mentors
- Minority training component must be strong
- School should be supportive

Best of luck!!