

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

Louise Ryan

Harvard University

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**
- **Responsiveness**
- **Responsiveness**
- **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!!