Honest Abe's Grant Writing Workshop

"A Proposal Divided Against Itself Cannot Stand" A Lincoln

"Don't Believe Everything You Read on the Internet" A Lincoln

Three websites you should be familiar with:
https://www.nidcd.nih.gov/
https://projectreporter.nih.gov/reporter.cfm
https://public.csr.nih.gov/

Know The Game-Institute (NIDCD) vs. CSR

- Look at the Mini-Mission Statements on NIDCD website

- Talk to a Program Officer

- Think about who (generically) will review your grant (AUD)

- Title and Abstract (Key Words) may determine study section and reviewers

- Tired reviewers (Grantspersonship)
  - Your are responsible for delivering a very clear easy to understand story
  - Keep it simple!
  - Avoid use acronyms if you can. (MSO codes ITDs while LSO codes IIDs; BIC=Brachium of the Inferior Colliculus or bicuculline)
  - Don't use Citation Numbers if you can avoid it.

- *** Get lots of critical timely help from your writing team!!**

A Proposal Worth Funding

- Do you have an Good Story to Sell?
- Does it believably move us closer to ameliorating a clinical malady?
  - Improving the quality of life
- Does it answer an important basic science question?
  - Move the bar forward
- Will people believe your question is important after you tell them why it is?
- Do you present your story so it aligns with the grant-making agency's funding opportunity announcement?
- Are you clearly communicating your and your organization's experience?
- Are you including concise and compelling arguments/anecdotes illustrating the need for this study.
- Always think like a reviewer when discussing the impact of your proposed project.

Some Rules/Tips:

- You can fool some of the reviewers some of the time, **but you cannot fool all the reviewers all of the time** (**Lincoln et al., 1886**; Jacques Abbadie, 1684 in French). **There will likely be a least one world class expert reviewing your proposal**.

- No Wool/No Bull: **Does the reviewer have confidence that you got this?**
  - Real Preliminary Data on each Specific Aim (SA): If possible.
  - Publication(s) on techniques or preliminary proof of concept studies that **you** have done.
  - Believable collaboration to support SAs. (One who clearly supports your study and preferably not a million miles away, not a big name who has not idea what you are doing).
  - A great creative image or two is worth a thousand words.
  - Elegant understanding of the literature is impressive. Not jargon or cutesy use of language. *(look ma, I can use the word **canonical** six times in a sentence)*
  - Understate, don't overstate, be humble, definitive statements invite challenge by reviewers.

- Get help! But Follow Your Heart.
  - In the end it is your proposal as the Principal Investigator.

Why I write my Abstract First

- Most of you likely will likely wind up writing the abstract last when you are exhausted and running out of time.
- The abstract is the first thing and perhaps the only thing a reviewer is likely to read
  - **Forms their initial opinion/rating**
- Carefully **craft a highly organized** and logical abstract
- Carefully **craft the language**
  - every sentence, every word
- Very best sell/impact statement
- Does the short version of the SAs help to formulate a clear understanding of the studies finest aspects.

Not served on a Review Panel: Learn the Rules

Scored Review Criteria: The NIH utilizes a 9-point rating scale (1 = exceptional; 9 = poor) for all applications; the same scale is used for overall impact scores and for criterion scores: https://grants.nih.gov/grants/peer/critiques/rpg.htm

- **Overall Impact:** The overall impact score reflects their assessment of the likelihood that the project will exert a sustained, powerful influence on the research field(s) involved.
  - Consideration of the following five core review criteria, and additional review criteria (as applicable for the project proposed).

- **Significance:** Does the project address an important problem or critical barrier to progress in the field? Is there a strong scientific premise for the project?

  - If the aims of the project are achieved, will scientific knowledge, technical capability, and/or clinical practice be improved?

  - Will successful completion of the aims change the concepts, methods, technologies, treatments, services, or preventative interventions that drive this field?

  - Is your significance obvious? **Does it pass the sure I would like to know that test?**

- **Investigator(s):** Are the PD/PIs, collaborators, and other researchers well suited to the project?

  - If Early Stage Investigators or in the early stages of independent careers, do they have appropriate experience and training?

  - If established, have they demonstrated an ongoing record of accomplishments that have advanced their field(s)?

  - If the project is collaborative or multi-PD/PI, do the investigators have complementary and integrated expertise; are their leadership approach, governance and organizational structure appropriate for the project?

Innovation: Does the application challenge and seek to shift current research or clinical practice paradigms by utilizing novel theoretical concepts, approaches or methodologies, instrumentation, or interventions?

- Are the concepts, approaches or methodologies, instrumentation, or interventions novel to one field of research or novel in a broad sense?

- Is a refinement, improvement, or new application of theoretical concepts, approaches or methodologies, instrumentation, or interventions proposed?

Approach: Are the overall strategy, methodology, and analyses well-reasoned and appropriate to accomplish the specific aims of the project?

- Are potential problems, alternative strategies, and benchmarks for success presented?

- If the project is in the early stages of development, will the strategy establish feasibility and will particularly risky aspects be managed?

Environment: Will the scientific environment in which the work will be done contribute to the probability of success?

- Is there institutional support, equipment and other physical resources available to the investigators adequate for the project proposed?

- Will the project benefit from unique features of the scientific environment, subject populations, or collaborative arrangements?

Protections for Human Subjects.
Inclusion of Women, Minorities, and Children. Vertebrate Animals.
Biohazards.
Renewal: For Renewals, the committee will consider **the progress made in the last funding period.**

- **Resubmission:** The committee will evaluate the application as now presented, taking into consideration the responses to comments from the previous scientific review group and changes made to the project.

- **Budget and Period of Support**
  - Reviewers will consider whether the budget and the requested period of support are fully justified and reasonable in relation to the proposed research.
- **Additional Comments to the Applicant**.
  - Reviewers may provide guidance to the applicant or recommend against resubmission without fundamental revision.

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- **Do your homework-Read the manual, and follow instructions. When critical sections or attachments are missing, it is glaringly obvious that an applicant did not take the time to read the full funding opportunity announcement (FOA) in detail. Always begin your application process by giving the FOA an attentive read, particularly Section IV, Application Guidelines.**

- **Lost in the weeds:** Details are important, but so is organization. You may have a fantastic idea and a potentially highly impactful proposal, but this may not be enough! You also must get your key messages across and present information clearly and concisely so that reviewers can quickly find and easily understand and evaluate it. Again, it's vital to read through the entire FOA—in addition to reading the Application Guidelines, you'll also want to carefully read Section V, Review Criteria, to understand how your application will be evaluated and then present your application accordingly.

- **Living in the past:** Another trap is dwelling on your past bona fides at the expense of providing sufficient detail on the proposed research plan. Reviewers need to be comfortable that your team of investigators are competent to conduct the research, but it is the proposed science that wows them and that is where your emphasis needs to be. So, make sure you provide sufficient detail in the experimental approach, show that you are aware of potential challenges or pitfalls and provide alternative solutions.

- **Not addressing controversies in the field in a fair and balanced manner :** This one is easy to dodge when you remember that, like review panel members, applicants must also strive for objectivity amidst heated debates in their fields. An application that does not present both sides risks the appearance of bias or pre-drawn conclusions.
    - In this situation, it's a good idea to spell out exactly how your proposed research path will help to provide clarification for the field. It may be that weaknesses in the rigor of prior research are (in part) responsible for the differences of opinion in the field. The revised NIH guidance on rigor and reproducibility specifically encourages applicants to address such weaknesses in their experimental approach.

- **It's called a resubmission for a reason:** A huge pet peeve for reviewers of resubmission (A1) applications is when previous reviewers' comments have been ignored or categorically dismissed. Reviewers typically take their job very seriously and provide the best feedback based on their own backgrounds. Before you finalize the Introduction in your A1 application, take a deep breath to switch from your emotional to your thinking brain.
    - Be gracious and acknowledge the critiques, and then use reviewers' comments to sharpen and improve your application. It is perfectly fine to disagree with a reviewer's comment as long as you explain why you believe your point of view is correct. Your chances of breaking through are definitely higher if you show that you have listened to and addressed reviewers' concerns.

- **Resources to help:** There are many NIA and Trans-NIH resources available to learn about the grant submission process, peer review and funding policies for NIH institutes. And of course, you can (and should) always talk to your program officer about specific FOA goals and your scientific review officer about the review process. Here are a few resources to bookmark: