

GRANT WRITING FOR SUCCESS

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OVERVIEW

- **Start planning early**
- Apply for the right opportunities
- Read the instructions
- Contact appropriate program staff early
- Present ideas clearly
- What to do after review



WRITING TIPS: GETTING READY

■ Plan ahead

- 6 months pilot work + research question
- 6 months writing the grant
- Involve mentor / co-investigators with warning

■ Write and revise a 1-2 pg **concept paper**

- Share ahead of every meeting
- Revise between meetings
- This will become Specific Aims section . . .

WRITING TIPS: TRICKS OF THE TRADE

- Read successful grants
- Sit in on mock reviews
- No typos, each page a thing of beauty . . .

WRITING TIPS

- Tell a story . . .
 - Build your argument
 - Tell reviewers why should they care
- Punctuate key points
 - Write the Specific Aims first....and Last.
 - Use subheads/bold key sentences that structure the argument.
- Use a conceptual framework and model
 - Diagram cause-effect or temporal relations
 - Make the link between aims, methods and deliverables clear

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- **Read and Read again the grant instructions!**
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GENERAL GRANT-WRITING TIPS

- Read instructions for application form
- Be realistic ... not overly ambitious
- Discuss potential problem areas and possible solutions
- Be explicit
 - Reviewers cannot read your mind!
 - Don't expect reviewers to read between the lines!
 - Don't assume they know what you intend!



5 CORE REVIEW CRITERIA

- **Significance** – Addresses an important problem or critical barrier to progress
- **Investigators** – Qualifications of the team
- **Innovation** – Novel concepts or approach
- **Approach** – Feasibility/strength/match of strategy to project aims. Adequate human subjects protections
- **Environment** – Institutional support/resources

DEVELOP A STRONG RESEARCH PLAN

Specific Aims

- Grabs the reader's attention immediately
- Specific Aim: Is roadmap for your application
- Problem
 - State general purpose
 - Include some key supporting data
- What is the Gap
 - Long-term Goal and Objectives
 - State the central hypothesis
- The Hook – Why should they care?
- Organize the aims in a sequential, numeric format
- Expected Impact

DEVELOP A STRONG RESEARCH PLAN



Innovation

- Shows that proposed research is new and unique
- Either by:
 - Showing how research refines, improves, or proposes a new application of an existing concept or method, or
 - Showing how the research would shift a current paradigm
 - Make a very strong case

Significance



DEVELOP A STRONG RESEARCH PLAN

Answers the “so what” question

Shows overall understanding of the field

Demonstrates that questions are novel, important, and represent a logical next step in research

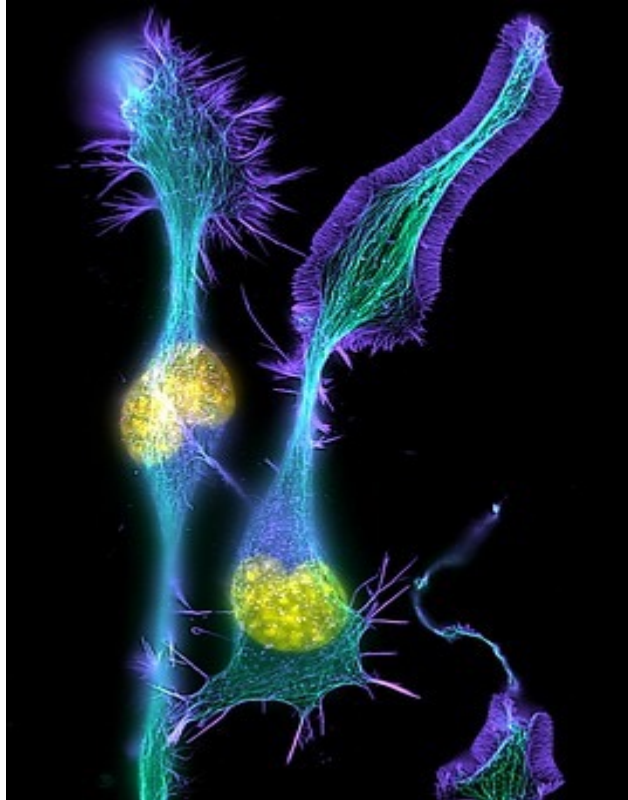
Highlights critical gaps that will be addressed by the proposed research

DEVELOP A STRONG RESEARCH PLAN

Approach: Preliminary Studies

- Strengthen your application
- Show availability of key resources, familiarity with proposed methods and approach to interpreting results
- Show that work is promising, feasible, has potential impact
- Can be qualitative, quantitative and/or come from collaborator

DEVELOP A STRONG RESEARCH PLAN



- Credit: Torsten Wittmann, University of California, San Francisco
- https://www.nigms.nih.gov/education/life-magnified/Pages/11B_developing_nerve_cells.aspx

Approach

- Does your plan flow logically from the literature review and prior studies?
- How will each Specific Aim (hypothesis) be tested?
- Do your measures capture the variables needed to test hypotheses?
- Why did you choose those measures?
- Consider organizing each aim the same way, including the:
 - Rationale
 - Experimental approach
 - Anticipated results
 - Alternative approaches

DEVELOP A STRONG RESEARCH PLAN

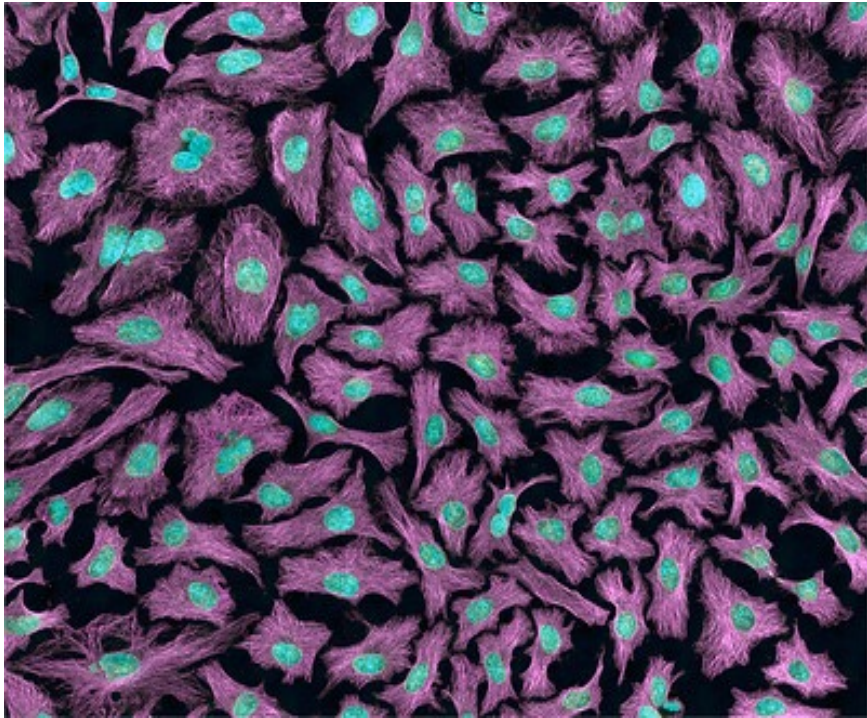
Approach- Clinical Studies

For clinical studies, include information in the Research Strategy section about:

- Overall strategy
- Methodology
- Analyses

Detailed study information belongs in the Human Subjects and Clinical Trials Information form

What is the overall impact of an application?



Credit: Tom Deerinck, NIGMS-funded

Two questions drive reviewer determination about the likelihood that the proposed studies will have a strong and sustained impact on the scientific field

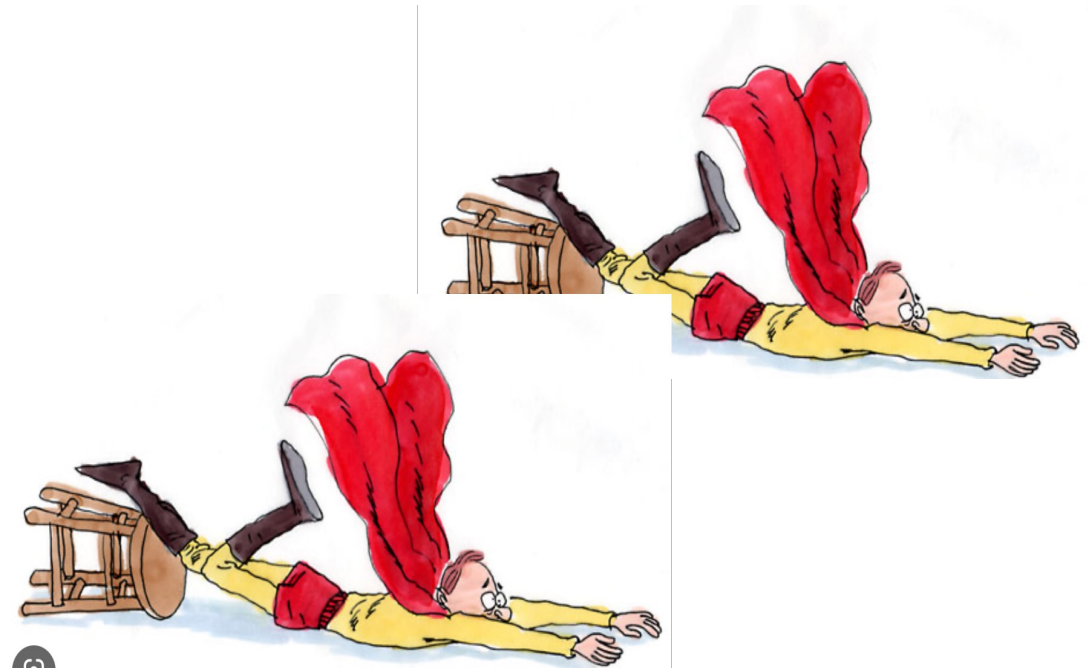
- Should they do it?
- Can they do it?

STRENGTHS AND LIMITATIONS

STATE THE STRENGTHS



STATE THE LIMITATIONS



Predict what the reviewers will criticize

HALLMARKS OF AN OUTSTANDING GRANT APPLICATION

- Strong significance, important problem in public health: IMPACT is high
- High degree of novelty and innovation
- Strong track record of a well-qualified applicant; compelling publications
- Clear rationale
- Relevant, supportive preliminary data
- Clear and focused approach that provides unambiguous results
- Careful attention to details
 - Spelling, punctuation, grammar, fonts, clarity of data, error bars, spelling, etc.

COMMON REASONS CITED FOR A WEAK APPLICATION

- Weak impact – avoid ‘descriptive’ or ‘incremental’ projects
- Too ambitious, lacking focus, too many unrelated aims, aim dependency
- Unclear hypothesis or rationale
- Applicant lacks appropriate expertise
- No evidence of feasibility (do not assume reviewers are as familiar with the subject as you are)
- Approach flawed and no discussion of pitfalls and alternative approaches
- Poor writing and lots of errors; small figures and densely packed text

BEFORE YOU SUBMIT THE GRANT

- Schedule a peer review (internal)
- Include persons who sit on study sections
- Do early in the process (eg. If June submission – review in early May)
- Determine how to include the feedback
- External review- experts in the proposed field of inquiry

OVERVIEW

- Start planning early
- Apply for the right opportunities
- Contact appropriate program staff early
- Seek advice broadly—peers, mentors, colleagues
- Present ideas clearly; pay attention to review criteria
- **What to do after review**

AFTER THE REVIEW

- Read and re-read the summary statement
- Contact your program officer and be prepared to discuss:
 - Reviewer comments from summary statement
 - Scores and percentiles
 - Funding prospects
 - Resubmission and other options

Consider the criteria scores carefully

- The written comments and summary of discussion will tell a more complete story
- However, pay special attention to **Significance** and **Approach**
 - Low significance, no matter what the other scores are, might be hard to fix
 - High significance but weak approach may be fixable

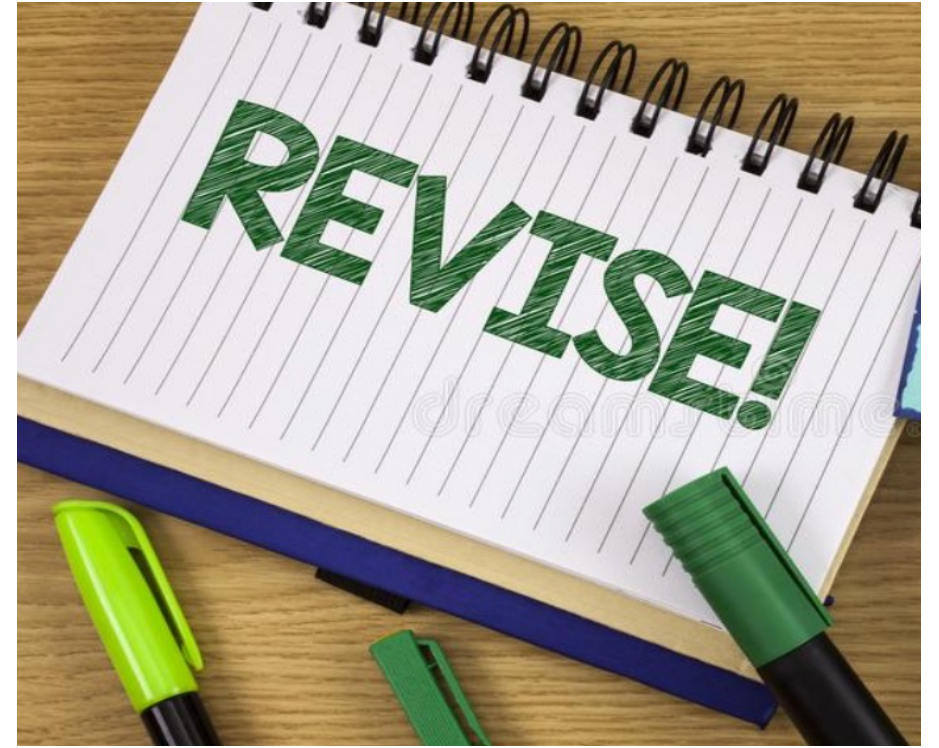
If not funded, try again!

- You are in good company
- Know your options
- Get advice, regroup
- Contact your Program Officer



REVISING AND RESUBMITTING

- Opportunity to improve the application
- Acknowledge and accept the help of reviewers
- Write clear introduction section
- Address criticisms thoroughly
- Respond constructively and respectfully



THANK YOU!



QUESTIONS?

