

Writing an Innovative Proposal/ Developing Research Aims

USC Aiken

21 Mar 2025

Research Development

- Identify Funding
- Networking
- Concept Development
- Grant Writing

Pre-Award

- Proposal Development
- Budget Development
- IRB/IACUC Approval
- Proposal Review
- Submission

Post-Award

- Award Acceptance
- Account Setup
- Financial Management
- Compliance and Reporting
- Close out

Put yourself in the shoes of the reviewers

- When you review a proposal, what are you looking for?

"This book belongs on the desk of every researcher ready to up their game!"
- Christopher M. Clark, Professor Emeritus, Michigan State University



GOOD TO GREAT GRANT WRITING

SECRETS TO SUCCESS



JULIE CWIKLA PHD

Grant Writing is Marketing

The goal is to convince the reviewers that:

1. There is an important question that needs to be answered
 - Fits into the funding agency's goals
 - Will have a high impact
2. You have the skills and resources to complete the project
 - You are familiar with the topic
 - You have successfully performed similar research in the past
 - Preliminary data/ publication record
 - Logical plan including alternative approaches

NIH Specific Aims Page Guidelines

- Research summary
- Includes the specific research aims

Demonstrates many of the principles needed for good grant writing

<https://www.biosciencewriters.com/NIH-Grant-Applications-The-Anatomy-of-a-Specific-Aims-Page.aspx>

1st Paragraph

- *First Sentence/Hook:* Should convey a sense of importance or urgency to your research. Explain quickly **WHAT** your research topic is and **WHY** it is critical that **YOU** conduct the research
- *What is Known:* 3-5 sentences
- *Gap in Knowledge:* The information that is not known.
- *The Critical Need:* The reason your proposal should be funded.

2nd Paragraph

- *Long-Term Goal:* Aligns with the mission of your funding entity.
- *Hypothesis and Proposal Objectives:* State your central hypothesis clearly to demonstrate that you have a hypothesis-driven proposal that is testable. Clearly state the proposed solution and how your project addresses the critical need.
- *Rationale:* How you arrived at your central hypothesis (past studies and published literature). Briefly, state what your project's completion would make possible (e.g., new therapeutics), and tie it to the funding entity's mission.
- *Qualifications:* Why your experimental design and your team are the best to accomplish the research goals including preliminary data, personnel qualifications, laboratory equipment.

Aims

- Each Aim Includes
 - Title that clearly states the objective in relationship to the hypothesis
 - Summary of the experimental approach
 - Anticipated outcome of the experiments
- The aims should be related, but not dependent, upon each other.

Summary Paragraph

- *Innovation:* What is innovative about your project. What would completion of this proposal bring to the field?
- *Expected Outcomes:* What do you expect to see at the completion of each aim?
- *Impact:* How your proposal will benefit the people you mentioned in the opening paragraph.

What Makes a Proposal Competitive?

- Potential for **high impact-Important**, not just interesting.
- New, **original** ideas
- Focused, feasible project plan
- Articulated knowledge of subject area, published relevant work
- Experience in essential methods or approaches, and/or collaborator expertise
- Sound scientific rationale
- **Realistic** amount of work; sufficient detail; critical approach (pitfalls and alternative hypotheses considered)
- **Well written** and understandable to someone not working directly in the field.

Advice for Writing an Excellent Proposal

- Start early!
- Read the solicitation!
- Identify your **audience**
 - Balance between general and specific subject area knowledge
- Frame a **big picture**
- Identify significant needs, gaps, and **hypotheses**
- Describe the plan to address the needs, gaps, and hypotheses
- Emphasize **creative** or innovative aspects
- Provide **proof-of-concept**
 - Preliminary data-especially if approach is new to you, or the field
- Speak with a Program Director

Additional Excellent Features

- **Expected outcomes** are described
 - Unexpected outcomes considered
- Outcomes related to original Goal(s)
- Ideally, negative results should be interpretable and meaningful
- Recognition of Reviewers
 - **Easy to read**
 - Neat and tidy
 - Budget is reasonable
 - All relevant and current literature is cited
 - You can suggest reviewers