

SPECIFIC AIMS PAGE 101

RCMI INVESTIGATOR
DEVELOPMENT WORKSHOP

Roland J. Thorpe, Jr, PhD and Harlan P. Jones, PhD
March 16, 2022

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THE PIVOTAL SPECIFIC AIMS PAGE

Here you must excite your reviewers, so they will excite the study section! A well-constructed Specific Aims page will:

- ▶ Identify the **important, NIH-relevant problem** you plan to address
- ▶ Pinpoint **the critical gap preventing progress** toward addressing the problem
- ▶ Show how your long-term research program will **address the critical gap**
- ▶ Explain how the next period of funding will **achieve significant progress** toward your long-term goal
- ▶ Describe the specific & general **benefits** that will accrue from successful completion of the proposed research

STRUCTURING YOUR SPECIFIC AIMS PAGE

Part 1: Identify the **problem/urgent need** and the **roadblock** that is preventing progress toward addressing the problem

Part 2: State your **long-term goal** (i.e. addressing the problem), and the overall objective, central hypothesis and rationale of this proposal, which is the next step toward accomplishing the long-term goal

Part 3: State the specific aims that collectively address the central hypothesis, and each aim's working hypothesis

Part 4: Claim the **benefits**, both specific and more general, that will result from successfully completing the project.

Opening sentence: public health problem affecting USA

¶ 1: Defining the problem

Current knowledge (broad overview)

Critical gap in the knowledge base → unmet need

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¶ 2: How will you address the problem?

Objective of this application

Central hypothesis

Rationale



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Specific Aims & Hypotheses



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Specific Aims & Hypotheses

Expected outcomes

¶ 4: The Payoff

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Next page:
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SPECIFIC AIMS: 'PAYOFF' PARAGRAPH

- ▣ What is the expected *return on investment* if the application is funded? *All* the study section will want to know.
- ▣ Expected outcomes: One important outcome from each aim.
- ▣ General statement regarding positive impact:
 - ▣ The favorable impact that collectively results from the expected outcomes of each aim. Short-term impact on your niche area, and potential long-term impact on public health.
 - ▣ This summary should segue seamlessly into the Significance subsection on the next page.

WRITING THE SPECIFIC AIMS PAGE

- ▶ The goal: Create a seamless flow of logic that informs and *excites* the reviewers.
 - ▶ Start with bullet statements (phrases)
 - ▶ Arrange bullets in a logical, seamless sequence
 - ▶ If gaps exist in the logical flow, write bullets to bridge the gaps
 - ▶ When you are 100% satisfied with the logical progression created by the bullet statements, expand them into complete sentences
 - ▶ Do the sentences still express a logical flow?
- 
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AVOID THE PITFALLS

- ▶ The Specific Aims must be related, but sufficiently independent that later aims don't depend on particular outcomes of earlier ones. If Aim 1 does not produce the expected outcome, is there still a reason to perform Aim 2?
- ▶ Don't create doubt! Aims should be open-ended, allowing for multiple possible outcomes. Avoid "if" or "whether." "Determine if compound X slows proliferation of cancer cells" creates doubt, while open-ended "Demonstrate compound X's impact on cancer cell proliferation" does not.
- ▶ Avoid descriptive verbs ("characterize," "describe," "study"). Use mechanistic verbs instead ("demonstrate," "identify," "define").

Your well-written Specific Aims page will have:

1. Identified a *critical gap/unmet need* that is preventing progress on an NIH-relevant problem,
2. Described *what you intend to do* to address the problem, and
3. Expressed the *good* that will emanate from successful completion of the project: the “Payoff”.

The Specific Aims, especially the Payoff, should flow seamlessly into the Significance that begins on the next page.

The Significance explains how the Payoff (the outcome) addresses the *critical gap/unmet need*

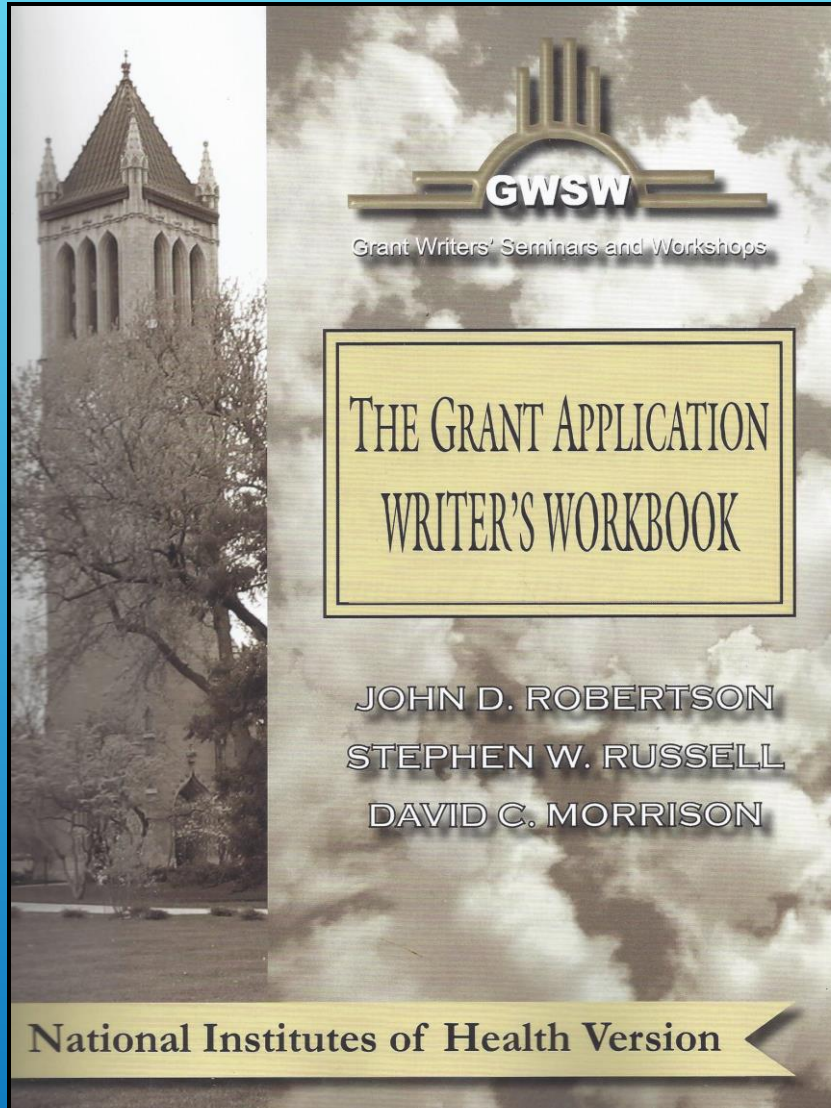
SPECIFIC AIMS: THE FOUNDATION FOR SIGNIFICANCE AND INNOVATION

The Specific Aims are the template for the entire Research Plan.

Write the Specific Aims first, before writing the Significance and Innovation subsections.

The **Significance** of your project will be to *address the unmet need/critical barrier* defined in paragraph 1 of the Specific Aims.

RESOURCE: GRANT APPLICATION WRITER'S WORKBOOK



Published 2019

Updated for the current R01 application format

The authors are seasoned, successful grant writers

They recommend a *systematic approach*, from idea to completed application

Acknowledgement

GETTING REVIEWERS *EXCITED* ABOUT YOUR RESEARCH PROPOSAL

AN INTRODUCTION TO SPECIFIC AIMS,
SIGNIFICANCE AND INNOVATION

Robert T. Mallet, Ph.D.
Dept. Physiology & Anatomy, UNTHSC

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