

# **GRANT WRITING WORKSHOP**

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# OVERVIEW

- **Overall Concepts**
- **Parts of the Grant**
- **Discussion of Each Component**
- **How to Approach the Research Design**
- **Exercise**

# OVERALL CONCEPTS

It is critical to understand the the **overall goal** of writing the grant and what the **approach** must be in preparing the document

# WHAT IS THE OVERALL GOAL?

To get **\$\$\$ money \$\$\$** to do the work!!

# SO WHAT IS THE APPROACH TO ACCOMPLISH THE GOAL?

You must **“SELL”** the ideas!!

**IMPACT!**

**WHY YOU!** (vs someone else) **GET THE \$\$\$**

**KNOWLEDGE GAPS**

# PARTS OF THE TYPICAL GRANT

(may be more applicable to STEM fields)

<b>Section</b>	<b>Pages</b>		<b>Content</b>
Specific Aims	1	1	WHAT do you intend to do? HYPOTHESIS. IMPACT
Background/ Significance	2-3	3-4	WHAT has already been done? WHY is your proposal important? WHERE are the knowledge gaps?
Prelim. Results	3-4	6-8	WHAT have you done to support your proposal? HOW do the results support the central hypothesis?
Research	7-9	12-15	WHAT is the rationale for each SA? HOW will you accomplish the SA? HOW will you analyze the results? WHAT are the expected outcomes WHAT are the alternative approaches?
Total Pages	15	25	

# SPECIFIC AIMS

**Very important part of the grant**

**Sets the tone for the reviewer**

**Writing style/content**

***Can turn a reviewer off right away if  
this section is poorly laid out***

# SPECIFIC AIMS

Typically should fit on **ONE PAGE**

Has **THREE** parts

- 1) Rationale/Broad Objectives**
- 2) HYPOTHESIS**
- 3) Specific Aims**

# SPECIFIC AIMS

## Rationale/Broad Objectives

This should be **one or two paragraphs**.

**May or may not include REFERENCES**

Hit **major rationale** for the study and highlight the **knowledge gaps** and most **recent findings**.

Include the **HYPOTHESIS** in **BOLD TYPE**.

# SPECIFIC AIMS

## HYPOTHESIS

Include the **HYPOTHESIS** in **BOLD TYPE**.

Locate the hypothesis either in the middle or  
at the end of the SA paragraph

Tie proposed outcomes to the hypothesis

# SPECIFIC AIMS

## Specific Aims

There should be **NO MORE THAN ONE AIM**  
**FOR EACH YEAR OF THE GRANT**

Aims should be stated in the **ACTIVE VOICE**

Use **ACTIVE** terms

# SPECIFIC AIMS

**ACTIVE TERMS** that suggest completion

**DETERMINE, CHARACTERIZE, EVALUATE,  
QUANTIFY, GENERATE**

**Never make statements that suggest it will not  
work.....**

**You will not ATTEMPT... you will DETERMINE**

# **SPECIFIC AIMS**

## **SUB-AIMS**

**OK to include if there is room, but not  
necessary if specific aims page is strong and  
space is an issue**

# SPECIFIC AIMS

## COHESION

Each SA should be able to **STAND ALONE**

If the whole grant is based on the success of **ONE** experiment of the completion of **ONE** aim  
it will not be reviewed successfully

# BACKGROUND AND SIGNIFICANCE

This section provides the reviewers with an **OVERVIEW** of the **MOST RELEVANT** literature in support of your proposal

***DO NOT ASSUME THE REVIEWER WILL BE FAMILIAR WITH THE DETAIL OF YOUR EXPERIMENTAL SYSTEM***

# BACKGROUND AND SIGNIFICANCE

Use subheads and have the topics “flow” and “build” on each other

At the end of each section, there should be a statement that relates the content back to your proposal.....

***.....the studies detailed in the current proposal will...***

*Use ITALIC or BOLD to bring this out*

# BACKGROUND AND SIGNIFICANCE

Pick the topic areas for this section carefully.

*Do not waste time on items that are not directly relevant to your proposal*

Prepare a **DETAILED OUTLINE** prior to writing any  
prose

# **BACKGROUND AND SIGNIFICANCE**

**Suggested starting points for background section**

**Start more broad and work your way to detail**

**Overview of your pathway**

**Overview of work on your pathway in your model**

**Detail of your protein/ gene**

**How your protein/gene impact disease**

# **BACKGROUND AND SIGNIFICANCE**

**A picture or figure is worth 1000 words!!!**

**Schematics of the pathway**

**Schematic of protein domains**

**Table of relevant genes and their names**

**etc.**

# **BACKGROUND AND SIGNIFICANCE**

**Last subhead of this section should be titled:**

## **SIGNIFICANCE OF PROPOSED RESEARCH**

**Reiterate how your work will fill in the knowledge gaps that you identified or addresses the specific problem that you outlined**

# RESEARCH PLAN

## SOME GENERAL POINTERS

- A grant is not a research paper
- Each SA section should be structured in the same way  
(SA and sub aims that address a specific question)
- Each section should have a rationale or statement of purpose  
(see the demo grant)
  - Each section should flow and build on the previous
- Each section should have Outcomes and Alternatives presented

# RESEARCH PLAN

## KEEP IT SIMPLE STUPID (KISS)

**It may seem intuitive that you want the grant to be complex to show your abilities, it is better to keep it simple and straightforward**

# RESEARCH PLAN

## KEEP IT SIMPLE STUPID (KISS)

Don't get bogged down in experimental detail. You do not need to explain standard techniques in a step by step manner.

You need to indicate **WHY** you are choosing to do a particular experiment, **WHAT** it will tell you and **HOW** you will interpret it and ultimately use the results.

# RESEARCH PLAN

**TELL THEM WHAT YOU WANT TO DO AND WHY**

Many junior investigators try to state things in a complex or round about manner

The simplest way to get a point across is to just state it as is. No embellishment.

# RESEARCH PLAN

**THE EXPERIMENTS SHOULD FLOW AND  
COMPLEMENT EACH OTHER**

**Each set of studies should be presented in  
sequence and be complementary**

# RESEARCH PLAN

**EACH SECTION SHOULD END WITH:  
EXPECTED OUTCOMES AND ALTERNATIVE  
APPROACHES**

**Each SA should be wrapped up with a discussion  
of the expected outcomes as well as a  
presentation of alternative approaches**

# HOW TO BEGIN THE PROCESS

**Start with a good idea**

# HOW TO BEGIN THE PROCESS

## Considerations of a “good idea”:

Addresses a Specific Problem (knowledge gap)

Has Significance/Rationale

Has Innovation

Has Focus

Moves the field forward

**HOW TO BEGIN THE PROCESS**

**START WITH AN  
OUTLINE!!**

# HOW TO BEGIN THE PROCESS

## FROM A SURVEY

Time spent on the following:

Developing and revising the **OUTLINE (60%)**

Writing the research plan (10%)

Revising the grant (30%)

# HOW TO BEGIN THE PROCESS

## OUTLINE SUGGESTIONS

Index Cards

Post it notes (different colors)

White board

Outline Processor

# HOW TO BEGIN THE PROCESS

## HAVE FIGURES READY

- Use figures and tables to help **GUIDE** the writing and development of the outline
  - Make figures simple
  - Always have a legend
- Use schematics to show a process

# HOW TO BEGIN THE PROCESS

## WRITING THE PROPOSAL

Write to EXPRESS, NOT to IMPRESS!!!

# HOW TO BEGIN THE PROCESS

## WRITING THE PROPOSAL

Try to write each section in one sitting  
(SA, background, each aim)

Just get it down and do not worry about length, spelling  
etc. as you will edit it MANY, MANY times later

# HOW TO BEGIN THE PROCESS

**DO NOT THINK ABOUT STYLE UNTIL YOU HAVE  
THE FULL PROPOSAL AND ARE READY TO EDIT**

# HOW TO BEGIN THE PROCESS

## PRESENTATION

Use Arial type fonts

Keep fonts, spacing and format the same!

Try to have some open spaces

Spend some time making the “look” of the grant clean

# GRANT WRITING 101

## START WITH AN OUTLINE

**More time should be spent on preparing a detailed working outline to be used as a checklist/guide than on actually writing the prose!**

**If you have a well prepared guide, writing the details will take very little effort**

# GRANT WRITING 101

**JUST SAY IT!!!!!!**

**JUST SAY WHAT YOU ARE GOING TO DO!!!!**

**BE DIRECT, DO NOT TRY AND BE CLEVER IN YOUR  
WORDING!!!**

# GRANT WRITING 101

**Put yourself in the position of the reviewer**

**Don't make the damn thing hard to read or make the reviewer SEARCH for rationale or reasons why you are doing something**

# GRANT WRITING 101

## Important web sites

**NIH.gov**

<http://www.niaid.nih.gov/ncn/grants/app/default.htm>

**NSF.gov**

# REFERENCES

## **Grant Applications Writer's Handbook**

**Liane Reif-Lehrer**

**ISBN 0-7637-1642**