

# How To Write a Research Proposal

# What's a Research Proposal For?

# Research Proposals Make You:

THINK through your experiments

OUTLINE steps in your proposed research

Provide Intellectual  
CONTEXT

JUSTIFY  
your  
research

Anticipate  
a realistic  
TIMETABLE

Be CREATIVE

Anticipate  
Potential PROBLEMS

(and you can use parts of it in your FINAL PAPER)

What are the Essential Ingredients?

# Essential Ingredients

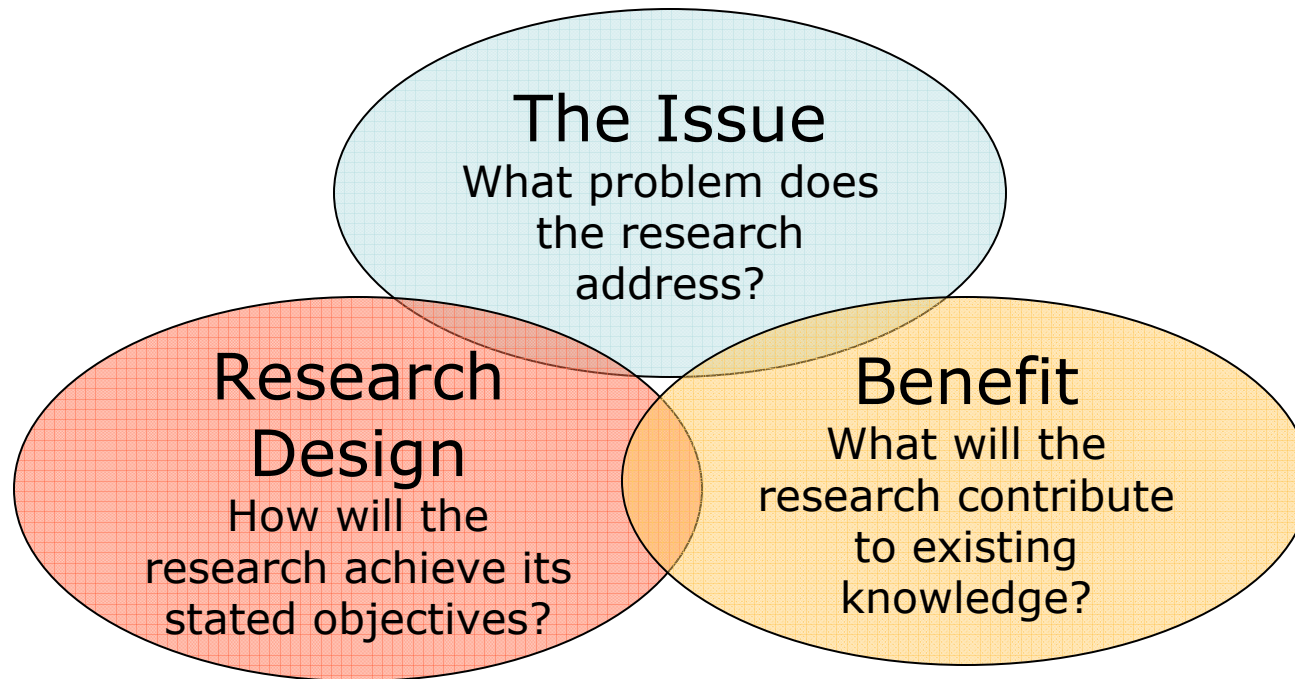


Figure by MIT OCW.

Who is the Audience for your  
Proposal?

How will that affect the content?

# Guidelines

You've been given **specific guidelines**, follow them to the letter.

All sections in your proposal (except the title) should be identified with corresponding **headings** that stand out from the rest of the text (**bold**):

**Specific Aims**

**Background & Significance**

**Research Design & Methods**

**References**

# Your Title is a mini-Abstract

*Paint a quick picture of the key ideas*

The title should be clear, unambiguous, and not cute

The words should reflect the focus of your proposal

Put the most important words first

Title #1 - **Red Haired Musicians and their Preference for Musical Style**

Title #2 - **Music Style Preference of Red Haired Musicians**

The project with Title #1 appears to be focused on *Red Haired Musicians*. The project with Title #2 appears to be focused on *Musical Style Preference*.



Write the title last  
Why?

# Specific Aims

Specific aims are the statements of **what you hope to accomplish**, but they are not measurable

- Each specific aim will probably require more than one experiment.
- Have these experiments in mind when you write your specific aims.

# Background & Significance

*This is the **LITERATURE REVIEW** we discussed yesterday...remember?*

*READ, THINK, TALK?*

Use this section to show how YOUR PROJECT:

- **EXTENDS** previous work,
- **AVOIDS** previous mistakes and/or errors,
- **IS UNIQUE** because it does not follow the same path as previously followed.

# Do This in your B&S

Briefly **SUMMARIZE** what we know so far

(about your topic - not all of apoptosis)

**STATE** what we need to know next

(you can frame it as a question if you like)

**EXPLAIN** why we don't know it yet

(often a methodological issue)

**DESCRIBE** how you intend to find the answer

# Research Design & Methods

LINK each SPECIFIC AIM to each EXPERIMENT you propose

It might make sense to ORGANIZE YOUR RD & M ACCORDING TO EACH SPECIFIC AIM - (though not necessarily)'

**Research Design and Methods**

Specific Aim #1

Specific Aim #2

NOTE:

Specifically mention **innovative aspects** of your ideas

Make sure you do **NOT** write this section as if it were **PROTOCOL**

# Overall Quality of Your Study

- Is it a good research question?
- Is the research design appropriate ?
- Are your methods rigorous and feasible ?

# Overall Quality of Your Proposal

- Is the Title informative?
- Are the Specific Aims clear?
- Is the Background & Significance scholarly and pertinent?

# Overall Quality of Your Proposal

- Are the Methods appropriate for the experiments?
- Is the timetable realistic?
- Is the proposal clear, concise, well-organized?



# Presentation Quality

- Are the headings obvious?
- Are the schematic diagrams or tables appropriate?
- Is the document neat and free of errors?

**Avoid** the following potential criticisms:

*Not an original idea*

*Rationale is weak*

*Writing is vague*

*Uncertain outcomes*

*Problem is not important*

*Proposal is unfocused*

*Project is too large*

Please email Your Outline to Dr.  
Ogren

**Specific Aims**

**Background & Significance**

**Research Design & Methods**

**References**

Good luck