TIPS FOR WRITING A SCIENCE GRANT

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INTRODUCTION

Grant writing is challenging because it requires you to explain complex ideas in a straightforward manner that can be understood by reviewers who may not be experts in your discipline. This resource provides tips and best practices for writing science grants, though many of the topics discussed here are applicable to grant writing in other fields.

STEP 1: ANALYZE THE PROMPT

One of the simplest mistakes to make is not answering the prompt or question provided by the funding agency. Make sure that you read the prompt and understand exactly what is being asked of you. Some prompts are more general (e.g., "Describe the goals of your research"), while others include specifics (e.g., "How will the proposed research contribute to your career goals?").

STEP 2: CREATE AN OUTLINE

Use an outline to formulate your response to the prompt(s). This is an opportunity to organize your thoughts and ensure that you are communicating the most important parts of your research plan. Crafting an outline will help make your writing process easier and more efficient.

STEP 3: START WRITING

Often, this is the hardest part! Rely on your outline to guide the different sections of your grant. You don't have to start at the beginning or the first prompt if that is not where you feel the most confident.

STEP 4: FIND PROOF-READERS

Ask other people to read your grant before you submit. Consider asking someone outside of your discipline (or academia altogether); if they understand it, any reviewer will, too!

ADDITIONAL TIPS

Goal	*Explanation*
Answer the prompt	The prompts are like a rubric, so your ability to answer them will factor into how your proposal is scored.
Provide a power calculation and sample size	Unless this is uncommon for your field, reviewers will likely want to see a power calculation that justifies your sample size.
Develop clear aims and hypotheses	This is critical for proving that your idea is testable and worthy of financial support. Consider writing a clear sentence that shows your research question/aim, followed by a list of hypotheses.
Add a figure	If allowed, consider adding a figure like a conceptual model. This will help illustrate the theoretical framework of your proposal and your research plan.
Connect your methods back to your aims and hypotheses	Many grants go unfunded because the applicant fails to communicate *how* the research will be conducted. This is especially true for graduate student proposals. Connecting each method, including statistics, back to your aims and hypotheses will show the reviewer that you know what you are doing.
Take formatting guidelines seriously, including word or page limits	Reviewers will be looking for any reason to discard your proposal before they spend any time reading it.

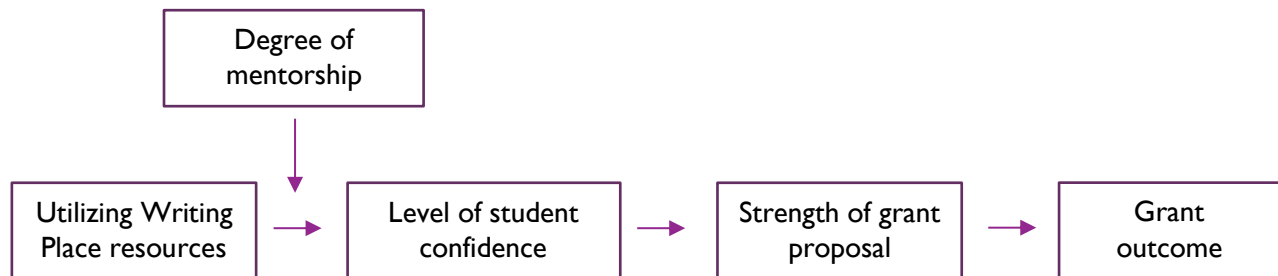## EXAMPLE

Aim: To test the effect of Writing Place resources on graduate student grant acquisition.

H1: An increase in Writing Place resources will be correlated with an increase in successful grant applications.

H2: Students who utilize Writing Place resources will receive more grants than their peers who do not utilize Writing Place resources.

H3: The degree of advisor mentorship will moderate the effect of Writing Place resources on student grant acquisition.

Conceptual model:

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                    ┌─────────────────┐
                    │   Degree of     │
                    │   mentorship    │
                    └────────┬────────┘
                             │
                             ▼
┌─────────────────┐  ┌─────────────────┐  ┌─────────────────┐  ┌─────────────────┐
│ Utilizing Writing│→ │ Level of student│→ │ Strength of grant│→ │     Grant       │
│ Place resources │  │   confidence    │  │    proposal      │  │    outcome      │
└─────────────────┘  └─────────────────┘  └─────────────────┘  └─────────────────┘
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Methods:

To address the research aim, I will use a mixed-methods approach that combines quantitative and qualitative data. I will use webpage analytics to assess the number of times each online Writing Place resource is used, as well as data from the Office for Sponsored Research on the outcome of submitted graduate student grant proposals (H1-H2). I will also conduct semi-structured interviews with students who do and do not utilize Writing Place resources. These interviews will focus on students' use of Writing Place resources and how the degree of mentorship that they review from their academic advisor and factors into their writing process and feelings of confidence (H3). All data will be analyzed using linear mixed models in R.

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