

Major Assignment 3

Research Funding Proposal (RFP)

ENG 333 Fall 2019

“Contrary to what Asimov says, the most exciting phrase in science, the one that heralds new discoveries, is not ‘Eureka!’ or ‘That’s funny...,’ it’s

‘Your research grant has been approved.’ ”

- John Alejandro King

OVERVIEW

As Carl Sagan said, “Somewhere, something incredible is waiting to be known.”

Scientific inquiry is the basis of discovery, and obtaining funding and grants is an important way to advance knowledge. For this assignment, you will turn your research questions into a testable hypothesis statement, which is the foundation of any scientific study.

The research funding proposal should build on, and represent a logical “next step” in a current line of the research reported in the literature in your field. Reviewing prior research, which is what you did for Assignment 2, is a crucial first step in this process. Your next step involves creating an argument that will convince your scientific audience of two things:

- That the hypothesis that you propose is worth investigating and studying
- That your methods are reasonable and will result in significant findings

AUDIENCE

- Locating information about the funding focus, and the mission of a funding organization requires using audience analysis skills. You want to match your proposed research topic to the specific goals and interests of those who make the decisions about how money is allocated.
- Your audience is the [Office of Undergraduate Research](#) (OUR), meaning they are

invested in undergraduate research but are also concerned with feasibility, finances, and the relative return on investment/impact your research will have.

- The OUR grant committee is also educated but not necessarily specialized in your area, so it will be important to clarify things that may not be common knowledge to an educated audience.
- In many ways, this proposal is an argumentative essay in which you identify a clear plan for research and show evidence for why it will be important and cost-effective.

FORMAT

For this assignment, you will NOT be using a predefined format that a funding organization typically provides. You will follow the format that I require in order to create a scaled-down funding proposal that primarily addresses the overall argument, which all grant proposals must contain regardless of topic or format.

You will need to structure your text in accordance with a generic format and sections (e.g., Introduction, Background, Method). Use either APA or MLA format for citing sources and in preparing the required bibliography. You will also need to include a cover page and a table of contents. You will want to spend some time formatting your proposal's cover page so it stands out and attracts attention.

The following required sections contain the information that any grant proposal must provide for a complete argument:

- ☐ [Cover Page](#)
- ☐ [Table of Contents](#)
- ☐ [Introduction](#)
- ☐ [Background](#)
- ☐ [Method](#)
- ☐ [Bibliography](#)

STEP BY STEP

Step 1: Identify purpose/objectives (Purpose & Objectives section) and fill in the literature

After narrowing in on a few ideas, you can begin thinking about what research questions you'd like to address in this proposal: What gaps did you collectively find in the

literature? You can start by drafting your purpose/objectives section, which will identify the particular problem or gap in the literature that your research aims to address as well as the research questions you want to try to answer through your proposed project. This section will establish the importance of the research and why it is needed.

Step 2: Draft a revised literature review (Background section) and determine your methods (Methods section)

From your research and discussions in Steps 1, you should start to develop an understanding of the literature on which your research idea is founded. Go ahead and draft a revised literature review, using the scholarly work from the last assignment and any additional research needed. Be sure that you're connecting this literature directly to the proposed research: your reader should clearly be able to see why your literature review brings you to these particular research questions.

You can also start thinking about how you will answer these questions, i.e., your research design or methodology. Draw from the literature you've read, your own experiences in labs and talking with mentors. Be especially aware of how your methods match with your questions: it wouldn't make sense to answer the question, "What are the biometrics involved in video gameplay?" with qualitative interviews or ethnographic data. Your methods should be able to give you the exact answers to the questions you ask. In this, they should account for both data collections (how you will gather information) and data analysis (how you will parse and understand information).

Step 3: Determine the nuts & bolts (Budget & Timeline section)

Once you have a purpose, a set of research questions, a background from which to ask your questions, and a method by which you can answer those questions, you will need to draw up a budget and timeline for the research. To do this, you will need to think through everything that is needed to conduct research at NC State and do some exploratory research on how much those things cost/how much time is necessary to complete tasks. Utilize the resources here on campus that are available to you. OUR's grants are up to \$1000 and during the semester for which you apply, so you won't have a lot of money or time to conduct complex research. Feel free to use the OUR's sample budget spreadsheet for your budget and the samples below for your timeline.

Step 4: Read, revise, and abstract

The final step is to read through your full draft, take in the comments you've received from your peer review, and revise accordingly. As you go through your full proposal one

last time, draft an abstract that summarizes the project in 4-5 sentences. This will be easiest to do after you've written everything but as you're going through your document and revising. You'll be able to draw out one sentence to explain the objectives, one to explain the background research, one or two to list your research question, and one to list the significance of the project. Go back and forth between your abstract and your proposal to make sure that they are accurately representing one another.

EXAMPLES

- **Social Sciences & Humanities**
 - [Example 1](#)
 - [Example 2](#)
 - [Example 3](#)
- **Physical & Biological Sciences**
 - [Example 1](#)
 - [Example 2](#)
 - [Example 3](#)

EVALUATION CRITERIA

OBJECTIVES	POINTS
<p>FRONT MATTER (10 points)</p> <ul style="list-style-type: none"> ● Includes a specific cover page addressed to a funding agency. ● Uses an informative title that would enable your proposal to be assigned to an appropriate advocate for your grant proposal. ● The cover page should also contain contact information for you, as well as the date, and it should stand out visually from other proposals in a professional way. ● Formats an informative Table of Contents for readability, and with the proper front matter page numbering (e.g., lowercase Roman numeral ii), and proposal page numbers (e.g., Arabic numbers starting at page 1 for the Introduction). ● Use either APA or MLA format for citing sources 	

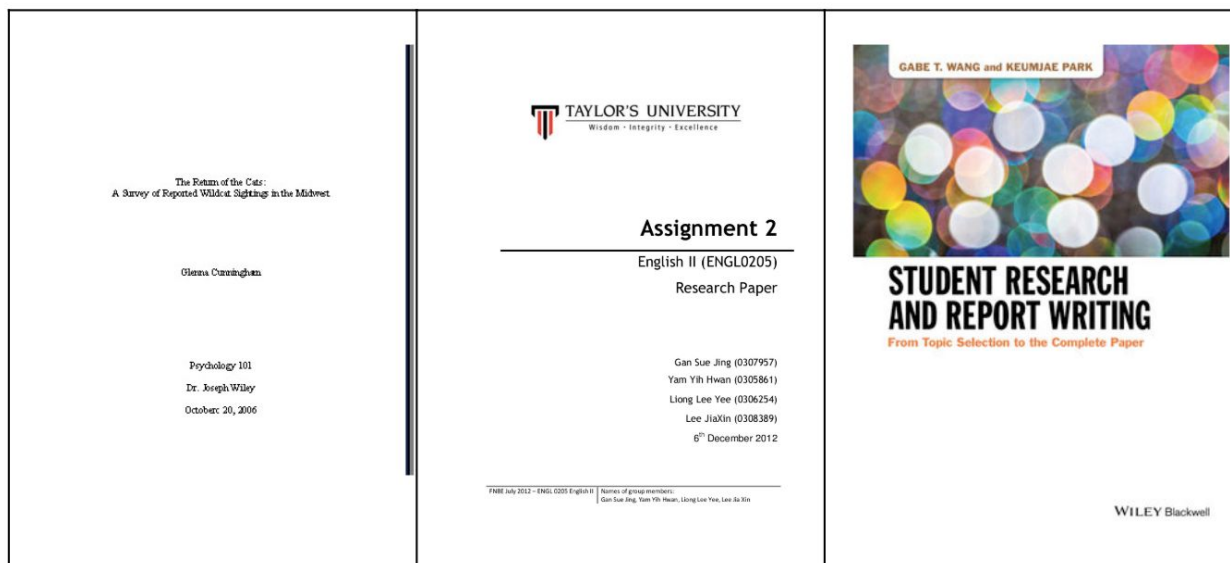
<p>INTRODUCTION (20 points)</p> <ul style="list-style-type: none"> Clearly articulates the significance of the proposed research Flows well and includes compelling logic since it is one of the most important sections in the proposal that ALL reviewers will read. Includes the following: <i>a brief introduction, long-range goal, objective of the proposal, central testable hypothesis, rationale statement, specific method, and expectations.</i> Relates the information to a funding agency's mission and focus. Research questions are developed from a body of literature and are directly linked to the “gap” in the literature 	
<p>BACKGROUND (20 points)</p> <ul style="list-style-type: none"> References past research that relates to the specifics of the proposal and the hypothesis. Reviews and synthesizes 9-12 articles Builds ethos and credibility by showing relevance, and how the proposed research adds to a particular field of study. 	
<p>METHOD (20 points)</p> <ul style="list-style-type: none"> Includes a statement of the significance of the proposed research, the method, and the expected results. Uses the subheadings: Title (restate method listed in the Introduction), Introduction, Experimental Design, Expected Results, and Anticipated Problems/Alternative Strategies. Contains enough details that a potential cost in terms of time and money could be made from the description. 	
<p>ARGUMENT (20 points)</p> <ul style="list-style-type: none"> Exemplifies the elements of effective arguments: logos (logic and facts), ethos (your credibility), and pathos (emotional appeal through wording and an attached excerpt from a funding agency's mission focus). Uses topic sentences and headings to transition seamlessly 	

OVERALL PROPOSAL (10 points) <ul style="list-style-type: none"> Is reviewer friendly, and formatted to easily convey a fundamental research inquiry, why it is worth doing, how it will advance a field of study, how the inquiry will be done, and what makes it special. Stands out and has the WOW! Factor through professionalism, accuracy, and correctness of the proposal. 	
TOTAL	

MORE ABOUT FORMAT

Cover Page

Which cover page is the best in your opinion?



The cover page should be professional looking, as well as formatted for readability. You want the reader's first impression of your work to be positive and expectant, as you begin to build credibility. Always include the following information on a cover page:

- Title of the Report
- Date
- Author(s) Name

Using an informative and unique title is important since you want to create interest. The visual appearance is also important so that your proposal stands out in a stack. Since a cover page is part of the front matter of a formal report, it is **logically page numbered as a lowercase Roman numeral “i” but it is not printed on the page itself**.

For the grant proposal assignment, the following information is required on the cover page:

- Title of the Proposal
- Date
- Author’s Name
- Funding Agency
- Graphic or Visual (optional)

In a “real” scenario, you will, of course, use the formatting that a funding agency requires for grant proposal submissions. If the instructions allow some flexibility in your cover page’s design then you will want to make your cover page, and proposal, stand out from others. Adding visual interest will not be the deciding criteria for if a proposal is approved for funding, but it can make your proposal easier to remember by reviewers as they ultimately compare which proposals to fund.

A useful online resource, [Formal Report Writing Guidelines for Engineering & Science Students](#), contains a description of the purpose of a cover page, as well as a title page.

Proposal Table of Contents

The **Table of Contents (TOC)** is an important part of a proposal or formal document. The cover or title page contains the initial pertinent information for a reader, but your TOC needs to tell a story. Here is where your reader can determine what your document covers, and to what extent. A Table of Contents is like a map in that it guides readers to information that they want to know.

You should repeat exactly the headings and subheadings that you use in a proposal or report so that readers can quickly access the desired information. Readers typically do not read documents sequentially. You need to facilitate their search. Also, check, and double-check, page references that you include for all sections. There is nothing more likely to frustrate your readers than to have inaccurate page numbering as they try to find information.

Steer away from generic headings that provide no useful information (e.g., Foreword,

Body). For example, the following TOC tells you nothing about the specific contents of the document:

Table of Contents	Page
Introduction.....	1
Scope.....	3
Analysis.....	4
Conclusions.....	10
Recommendations.....	11
References.....	12
Appendices.....	14
Appendix 1 - Cash Flow Statement for XYZ Holdings 2007-2008.....	14
Appendix 2 - Balance Sheet for XYZ Holdings 2007-2008.....	15

The Title Page is numbered with lowercase Roman numerals, as is all of the front matter of a formal report. The Cover page is typically numbered as i, however, **do not put the i on the Cover Page**. The second page is then numbered as ii, the third page as iii, etc. until the body of the report, when that begins with the Arabic page number of 1. The following TOC contains proper page numbering. It is more usable and user-friendly than the above TOC example, and notice that the attachments also include descriptive headings.

Table of Contents

Title Page.....	ii
Introduction to Ski Analysis.....	1
Selection of Skis.....	2
Ski Length.....	5
Torsional Rigidity.....	6
Recommendation - Alpine.....	7
References.....	8
Attachment A – Adult Ski Sizing Chart.....	9
Attachment B – Depiction of Ski Parts.....	10

Include a second level of subheadings in order to guide your readers to the text that they need, and want.

The following example of a Table of Contents is best since the headings “tell a story” and they guide readers to wanted text.

Table of Contents

Executive Summary.....	iii
Introduction	1
2012 Objectives.....	2
Methods.....	2
Data Collection Device	2
Study Area & Design	2
Bird Mapping.....	4
Breeding Activity	5
Results.....	6
Digital Device and Software Application.....	6
Bird Mapping.....	6
Nest Monitoring	9
Territory Locations & Breeding Activity	12
Conclusions	17
Literature Cited	18
Appendix A. Numbers are based on total visits to sites, and not all sites were visited equal times.....	19

List of Tables

Table 1. Woody draw sites selected for territory mapping and nest monitoring.	2
Table 2. Selected focal bird species, habitat preferences, and nest location information.....	4
Table 3. Survey effort and number of detections at woody draw sites.	6
Table 4. Number of nests by species located along woody draw sites.	10

List of Figures

Figure 1. Location of focal species observations and nests.	7
Figure 2. Relative use of substrate by birds	8
Figure 3. Shrub and tree species where focal bird species were observed.....	8
Figure 4. Locations of all nests found.	9
Figure 5. Number and fate of monitored nests	10
Figure 6. Observed Dusky Flycatcher territories and breeding activity.....	12
Figure 7. Observed Gray Catbird territories	13
Figure 8. Observed Lazuli Bunting territories	14
Figure 9. Observed Orange-crowned Warbler territories	15
Figure 10. Kernel density estimate for Spotted Towhees.....	16

Creating a Table of Contents

Word provides a way to automatically or manually [create a Table of Contents](#).

Page numbering is something else that you need to consider. Choose your method carefully. If you place the page numbers in the upper right or left corners and the document is printed back-to-back, then half the page numbers will disappear under the binding, or a staple. A bottom centered, or right-justified location is better. Also, remember to be informative here too. On the proposal's pages, you might include an abbreviated title of the report, your last name, or the date.

Resources:

- [Page numbering for Word 2013](#)
- [Page numbering for Word 2007](#)

Introduction

If you conduct a comprehensive search of materials relating to writing grant proposals, you will see one common theme mentioned first: **winning grant proposals must be well-written**. Your proposed research might be the most critical in the world, but if your grant is unorganized and not interesting, the grantor will not read past the first paragraph.

A winning grant must be **informative and engaging, clear, concise, and it should tell a compelling story**.

After the title of a grant proposal, the Introduction section is where a reader is introduced to you, and why you are writing the grant proposal. Reviewers of grant proposals expect to see certain information in all Introductions, and all review committee members will read that section, regardless of their knowledge of your field or their expertise.

All Introduction sections should include and highlight the following statements:

- **Long-range goal:** Projects a continuous need for research in a field and about a topic, and tells the “big picture” about a research proposal
- **Objective:** States what you propose to accomplish, and links to a gap in knowledge with a focus on the end result, and not a process.
- **Central hypothesis:** Is a testable statement the links to the objective.
- **Rationale:** Conveys why you want to conduct the proposed research (e.g., a stated

method), and tells the reviewers what will become known after the research is conducted

- **Expected Outcome:** Helps to develop advocates of a proposal, and articulates the expected products and pay off of the research that the reviewers can expect.

The opening paragraph of a proposal is very important since you want to grab your readers' attention, and establish a connection to the readers' interests (i.e., establish the relevance of your proposal). A statement of current knowledge will help less expert members of a review panel get up to speed with respect to what is known about the topic of the application. **Introduce a gap in knowledge to establish the purpose of your proposal.**

The final part of an Introduction section should summarize the **general impact and contribution** to the funding agency's mission that would result if the proposal is approved.

Background

The **Background section** should begin on a stand-alone page, as should all of the sections of a grant proposal, in case it is detached. Also, it is not a section that all reviewers will typically read. Although, the importance of a Background section should not be diminished.

A Background section provides **context, focus, and justification** of a proposal. Just as your introduction establishes the “**who, what, when, and why**” of a proposal, **a Background section extends the “story” for the reader.** You also can show that you know who the main “characters” are in a research field. Just as a director of a movie needs to condense a book into a two-hour movie, you want to do the same type of synthesis.

By concisely reviewing and stressing the importance of past research, you can **show how your proposed research is relevant** by **highlighting the need for further research**, and, specifically, for the answer to your hypothesis.

The following is an excerpt from **The Art of Grantsmanship**, by Dr. Jacob Kraicer:

1. This section should answer 3 questions: what is known, what is not known, and why is it essential to pursue answers to the remaining open questions.
2. Begin with a brief outline of the highlights in the background review. State where your own previous contributions (if any) fit in.

3. Then critically evaluate the relevant literature. This section should be considerably more than an uncritical compendium or list of the existing literature.
4. Discuss fairly all sides of any controversy, disagreement, and/or discrepancy in published results. Remember, though, that a participant in that controversy may become your proposal reviewer.
5. Identify specifically the gaps and contradictions that you will clarify. Carry this into the rationale for your proposal.
6. Emphasize the importance and relevance of your proposal in bridging your hypotheses and long-term objectives with the background review.
7. Integrate your previous findings within the background to give the reviewers a sense of your relevant contributions.

Proposal Method

Typically, a grant proposal contains two-to-three methods and experimental designs to test and research a stated hypothesis, and **the methods provide the bridge that connects the gap between proposed objectives and eventual results**. It is also where you demonstrate your project's feasibility by detailing your experiences and resources that will be drawn upon to carry out the project.

For this assignment, you will only need to propose **one, well thought out method**. You will not need to include a complete budget or breakdown of the costs to accomplish the proposed experimental design, but you will need to include enough details so that an actual amount could be derived if a bottom-line cost was required.

Generally, the Methods section of a grant proposal tells the reviewer **how you will accomplish the stated objectives in the Introduction**. All methods and activities must be feasible and logical.

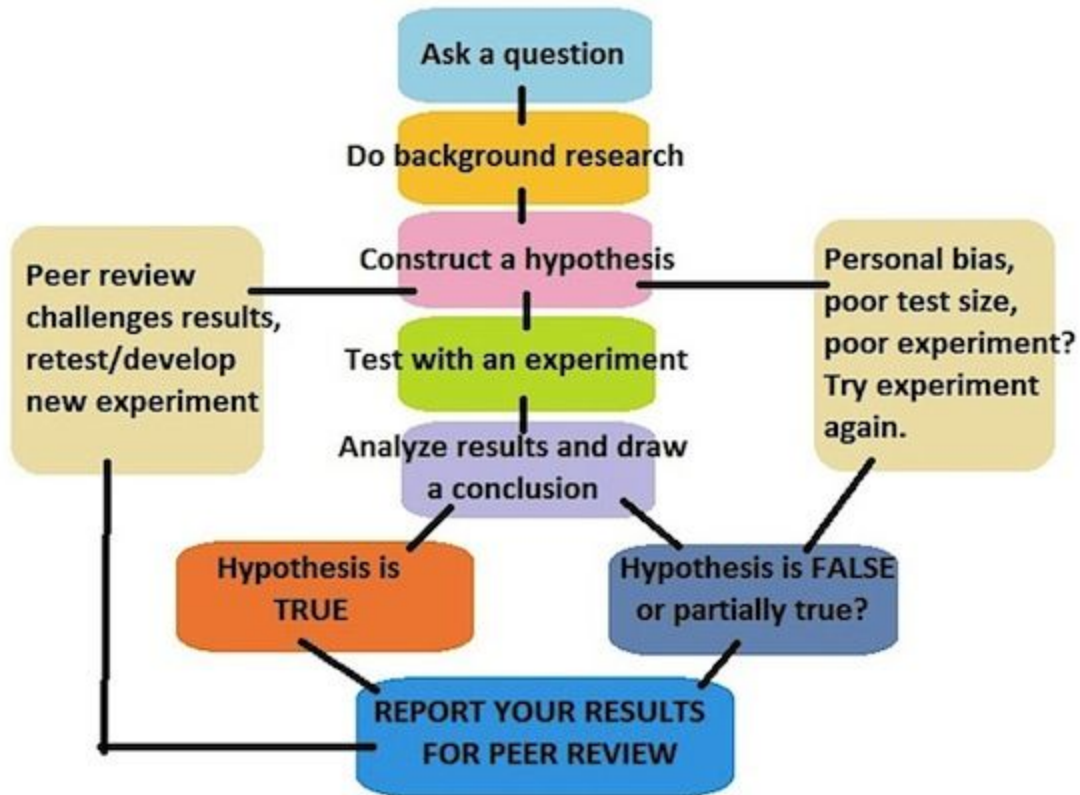
Write this section as though the reader knows nothing about the research that you are proposing. Do not think of this as “dumbing” down the information, but rather as making it crystal clear.

Tips for writing the methods section:

- Be specific and explicit so that a cost could be derived from the details
- Explain why the methods you have selected are the best to achieve your objectives
- State the required supplies, equipment, and resources, including who will perform specific tasks

- Include a timeline

The scientific method centers around a test or experiment to determine the validity of a hypothesis, as shown below:



Painting a vivid picture of how you plan to accomplish a proposal demonstrates a carefully planned grant application, and it provides a funding agency with evidence that the proposed research can be achieved.

Bibliography

A bibliography is required, and you should include all of the sources that you reference in the proposal. Include the reference to the funding agency's website, as well as any other information that you researched. Use proper [APA](#) or [MLA](#) citation format and consistent organization (e.g., alphabetical or numbered) for the bibliography, as well as for the in-text citations.

The following excerpt from [Why Bibliography is Important for Research?](#) by Dr. Vidya Hattangadi explains why a comprehensive and properly formatted should be included in any research-based document:

“One of the reasons behind citing sources and compiling an extensive and logical bibliography is to prove that you have done some valid research to back up your logic and claims. Readers of the thesis can refer to the citation in the bibliography and then go look up the material themselves. I want to point out here, that a **well-reported bibliography influences positively the examiners of the thesis**. The examiners can double-check a claim or interpretation done by the research scholars.

The bibliography is the key element of a thesis that is used to judge the quality of the work done by the researcher. Therefore, use up-to-date resources and be sure you know how to cite the references. Please do not ignore the nuances of a bibliography. **It exhibits your critical thinking, it proves you have read and understood your sources, it establishes your work as a valid source and you as a competent researcher**, and it situates your study and topic in a continuing professional conversation. And lastly, your bibliography might stimulate other researchers to carry on further work on your chosen topic of research.”