



Research Proposal: Part 1

Topic & Bibliography

Assignment Overview

Prepare for the Research Proposal and Presentation by developing a proposal abstract and an annotated bibliography of no fewer than 10 resources.

Assignment Instructions

Topic & Bibliography

1. Choose a scientific topic of interest to you
(NOTE: Proposals will be graded based on completeness, coherency, and persuasiveness rather than scientific merit.)
2. Develop an annotated bibliography of at least 10 scientific research articles related to your topic.
(NOTE: The citations should be in APA format. Annotations should be 2-5 sentences summarizing the article, NOT full abstracts.)
3. Write a proposal abstract of 250-300 words. This should be semi-structured and include an introduction, your research question, and the intellectual merit/importance of your question to the field. It may also include your proposed methods and relevant details of your proposal.
4. Submit a document to the Sakai system. This submission should include 3 sections:
 1. Topic Statement (one sentence summarizing topic)
 2. Proposal Summary (250-300 words)
 3. Annotated Bibliography (10 scientific research articles, in APA format, minimum)

Assignment Deadlines

Due online 10/25

Grading

This assignment is worth 10% of your overall grade. It will be graded on the following criteria:

Points	Criteria
1	Topic Statement
4	Proposal Summary: <ul style="list-style-type: none">• 250-300 words• Has all parts (introduction, research topic, intellectual merit)• Summary is well written
5	Annotated Bibliography: <ul style="list-style-type: none">• 10 research articles cited fully in proper APA format• Concise annotations summarizing each article• Articles are related to the research topic

Assignment Purpose & Learning Objectives

The purpose of this assignment is to give you time to work through your research proposal ideas before the final project deadlines.



Research Proposal: Part 2 Presentation

Assignment Overview

Practice communicating your ideas for scientific research orally to an audience of peers. The ability to present your research in compelling ways – to funding agencies, to colleagues, to potential lab partners, and to national collaborators - is an essential skill for scientists.

Assignment Instructions

1. Using presentation tools of your choice develop an 8 -10 minute presentation to convince your classmates of the value of your proposal. The presentation must include the following elements: introduction to topic/ statement of interest, clear description of research problem, importance of the research to the field, proposed methods/ analysis plan, project timeline, and project budget.
2. Provide constructive feedback to your classmates on their presentations. This will help them to build a better written research proposal and improve their oral presentation skills in the future.

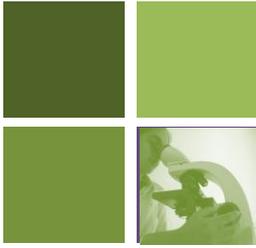
Assignment Deadlines

In class presentations 11/29-12/1

Grading Rubric

This assignment is 15% of your overall grade. It will be graded on the following criteria:

Points	Criteria
13	<p>In Class Presentation: 8-10 minutes in length (including time for questions) – 2 points Content - 6 points</p> <ul style="list-style-type: none">• Concise introduction to topic/ statement of interest• Clear description of research problem• Importance of this research to the field• Proposed methods/ analysis plan• Project Timeline• Project Budget <p>Style – 5 points</p> <ul style="list-style-type: none">• Presentation was well organized and concise• Slides and visual materials supplemented the presentation• Creative display of information• Exemplary oral presentation skills• Audience engagement (questions, interaction, etc)
2	Feedback/ Class participation



Research Proposal: Part 3

Draft & Final Paper

Assignment Overview

Practice communicating your ideas for scientific research by writing a research proposal. The ability to write & present a compelling grant is essential to obtaining funding for scientific research. In this assignment you will write a research proposal using NSF guidelines to familiarize yourself with the process of applying for grants.

Assignment Instructions

1. Review the requirements for writing an NSF Proposal available at (<http://www.nsf.gov/pubs/policydocs/pappguide/nsf11001/gpprint.pdf>)
2. Write an 8-10 page (3000-4000 word) **summer** research proposal that adheres to modified NSF grant proposal guidelines as outlined below. Your proposal must include all of the following proposal sections as outlined in the NSF guidelines:
 1. Cover Sheet
(project title, budget and duration information, PI information, organization information)
 2. Project Summary
 - Project summary abstract (250-300 words)
 - Intellectual merit
 - Broader Impacts
 3. Project Description (Please follow guidelines below rather than NSF guidelines)
 - Introduction/ Background
 - Objectives for the grant
 - Literature review (relation to present state of knowledge in the field)
 - Proposed research plan (methods)
 - Detailed timeline
 4. Budget
 5. Facilities, Equipment, and other Resources
 6. References Cited (Please follow APA guidelines rather than NSF guidelines)
 - 10 or more references for academic research articles
 7. Biographical Sketch
 - Include professional preparation, appointments, publications, synergistic activities, collaborators & other affiliations.

Assignment Deadlines

Draft due online 11/17

Final paper due online 12/8

Grading Rubric

The draft is NOT optional. It will help you prepare for the final paper and get feedback.

The Draft is worth 5% of your overall grade and the Final Research Proposal Paper assignment is 20% of your overall grade. It will be graded on the following criteria:

Points	Criteria
2	Coversheet includes title, budget and duration information, PI information, organization information - .5 points each
3	Project Summary includes: <ul style="list-style-type: none">• Project summary abstract (250-300 words) – 2 points• Intellectual merit - .5 points• Broader Impacts - .5 points
8	Project Description includes: <ul style="list-style-type: none">• Introduction/ Background - 1 point• Objectives for the grant – 1 point• Literature review (relation to present state of knowledge in the field) – 2 points• Proposed research plan (methods) – 2 point• Detailed timeline – 2 point
2	Budget
.5	Facilities
1	References Cited
1	Bio Sketch includes professional preparation, appointments, publications, synergistic activities, collaborators & other affiliations.
.5	Format follows NSF formatting rules
2	Proposal is well written, free of grammatical errors, uses academic language and is persuasive.

Assignment Purpose & Learning Objectives

By completing this assignment you will:

1. Develop a research idea that is of interest to you into a grant proposal using modified NSF guidelines
2. Use scientific databases to find appropriate resources, evaluate information, and synthesize the articles on your topic to develop a research proposal.
3. Practice the project management skills of developing budgets and timelines for a research project
4. Present a persuasive research proposal to your peers
5. Demonstrate your understanding of topics presented in class such as scientific funding tips, CV/Bio sketch writing tips, search strategies, scientific communication skills, and literature searching.