

Written Thesis Proposal

1. Format and length
 - Text (~5 pages)
 - Reference List
 - Schedule
 - Budget
 - Figures

2. Format of the written proposal

Text

Purpose and Introduction - describe the question(s) to be answered; what is the objective/goal of the research. Set the stage for the importance of the work to the discipline and to Earth Sciences in general.

-Think about how your question fits in with previous work

-What new and different angle can you investigate?

Example: The purpose of this study is to investigate the magnitude and frequency of floods on the Deschutes River over the last several thousand years. The information will be compared with the modern record of floods on the river and used to better assess the probability of large floods at the Round Butte Dam complex, which will soon undergo relicensing.

Objectives

1. *Develop a chronology of floods on the Deschutes River by stratigraphic description and radiocarbon dating of slackwater flood deposits.*
2. *Use a computer flow model to determine the discharge associated with the flood deposits.*
3. *Incorporate this geologic information about the magnitude and frequency of paleofloods into a flood frequency analysis for the Round Butte Dam complex.*

Precede and follow with more general introduction to topic.

Background- brief review of prior work on or related to topic.

Methods and logistics- describe how you will accomplish your objectives. Include techniques to be used, description of equipment, computer programs etc. that will be used; field site localities.

Anticipated results- you may already have a preliminary model or some results that may guide you in proposing preliminary results, e.g. if you are testing, comparing, or building upon previous work by other investigators.

Significance of Research- describe specifically how your project/results will contribute to progress in your field.

Reference list

Schedule- time schedule for data collection, analysis, writing, and oral defense

Budget- list all of the activities that your thesis will include and approximate cost.

Figures - clearly labeled with informative captions, selected to best support text

Tips on Writing a Proposal

1. Approach to writing relatively short documents such as thesis proposals:
 - a. Make an outline (as shown above). In each category, list the items that will be included.
 - b. Complete first draft of all figures.
 - c. Rough draft. Do not worry about grammar, flow, etc. Just get all of your ideas down on paper (in computer). Do not worry about organization either. This is really a brain storm of what should be included. Some can do this in the outline stage. If you have difficulty beginning with the introduction, start with something more straightforward, like the methods.
 - d. Rewrite. This time, worry about BOTH form and content. Streamline the document so that one idea flows to the next. Spell and grammar check.
 - e. Rewrite again, after the document has aged for a few days/weeks, depending on your schedule. Finalize figures.
 - f. Get critiques
 - g. Evaluate criticisms and rewrite accordingly
 - h. Let rest and rewrite again, putting on final touches. Make sure the details, such as matching figure numbers in the document and on the figures, have been carefully reviewed.

What to expect while doing research

Think of the research process in terms of a washing machine with different cycles:

The Wash Cycle:

You start collecting data. You are chugging along, making lots of progress, you have a clear purpose and things seem to be perking along just fine. This is the wash cycle.

Soon you have a lot of data, but there is so much and it is so mixed up and spinning all around and you can't make sense out of any of it and you have barely started the project but you are already ready to give it all up and you think you are the most stupid person in the world for not figuring things out and you don't know which way to turn...

You are in the **Spin Cycle!**

There are times in every researcher's experience when he or she is frustrated with not being able to figure out what to do and thinks their project is totally worthless. So don't feel alone, this is part of the process.

What to do to escape the Spin Cycle:

- Talk things over with your advisor, other faculty, and fellow graduate students
- Focus on a small part of the project that you can do and don't become overwhelmed by the enormity of the whole.
- Think about new things to try or changes in your approach.

Changes are a part of the process. Don't be afraid to take the project in new directions that you hadn't anticipated at the beginning. **BUT...** this is not a reason to avoid making a detailed plan and sticking to it. You should always have a plan in mind, but be flexible enough to change it as you go along.

You will find yourself going through the Wash Cycle (periods when you are making good progress) and the Spin Cycle (no idea which way to turn next) several times during the course of your project. Remember, when you hit an obstacle this is an opportunity to re-examine your project and may lead to a new direction that you wouldn't have thought of otherwise.

The Rinse Cycle:

By this time you will have collected a lot of data and results, conducted many modeling runs, etc. Much of this will not be incorporated into your final thesis! In the rinse cycle, you need to cull through what you have, sort out what will go into the final write-up and what you will discard.

Hanging It Out to Dry:

When you have finished analyzing your data through several wash and spin cycles, you need to get it written up and out for people to see while it's still fresh in your mind.

HAVE FUN!