

Graduate Program of Hydrologic Sciences

Proposal Guidelines

INTRODUCTION

This was created to help our graduate students write a successful thesis/dissertation proposal. Once completed and approved by the student's advisor, the research proposal is presented by the student to the student's advisory/examining committee.

This document is meant to serve as a guide for students. Individual proposals may vary depending on the requirements set forth by the student's advisor and thesis/dissertation committee. The overall goal of the proposal is to present research methodology in a direct and clear manner.

All proposals should address the following issues in one form or another.

1. What is the problem being addressed?
2. What is the hypothesis being tested?
3. Why is the problem important and interesting?
4. What will you DO to address the problem? If you complete the plan, will that bring us closer to an answer to the problem?
5. Why is the research significant and important?
6. (Ph.D. Students) What is the new or original research that you are contributing to the field
7. Is the topic is feasible in terms of availability of funding, equipment, supervisors, data, and can the research be completed?

M.S. VERSUS PH.D. PROPOSALS

Your advisor is the best person to provide a detailed clarification of your research expectations. The main differences between a M.S. and Ph.D. proposal and associated research are likely to be in the length and complexity of the research (not necessarily the proposal), and that the Ph.D. research must contain something new to the field of hydrology.

SUGGESTED PROPOSAL FORMAT

1. Cover page (1 page) – Name, email, degree for which you are a candidate, advisor, and committee's name, title, and date.
2. Project Summary or Abstract (1 page) - This is a self-contained, third-person description of objectives, methods, significance. Usually one will write this after the entire proposal is completed.
3. Project Description
 - a. Objectives and Expected Significance
 - What are the main scientific challenges? Emphasize what the new ideas are. Briefly describe the project's major goals and their impact on the state of the art.

- Clearly state the question you will address: Why is it important? What makes something important varies with the field. For some fields, the intellectual challenge should be emphasized, for others the practical applications should be emphasized. Why is it an interesting/difficult/challenging question? It must be neither trivial nor impossible.
- b. Background and Technical Need
- What long-term technical goals will this work serve?
 - What are the main barriers to progress? What has led to success so far and what limitations remain? What is the missing knowledge?
 - What aspects of the current state-of-the-art lead to this proposal? Why are these the right issues to be addressing now?
 - What lessons from past and current research motivate your work. What value will your research provide? What is it that your results will make possible?
 - What is the relation to the present state of knowledge, to current work here & elsewhere? Cite those whose work you're building on (and whom you would like to have review your proposal). Don't insult anyone. For example, don't say their work is "inadequate;" rather, identify the issues they didn't address.
 - Cite relevant literature
 - You can build your credentials in this section by summarizing other people's work clearly and concisely and by stating how your work uses their ideas and how it differs from theirs.
- c. Research Description
- Broad technical description of research plan: activities, methods, data, and theory.
 - This the part that counts. **WHAT** will you do? Why is your strategy an appropriate one to pursue? What is the key idea that makes it possible for to answer this question? **HOW** will you achieve your goals? Concisely and coherently, this section should complete the arguments developed earlier and present your initial pass on how to solve the problems posed. Avoid repetitions and digressions.
 - Present a plan for how you will go about addressing/attacking/solving the questions you have raised.
 - Discuss expected results and your plan for evaluating the results. How will you measure progress?
 - Include a discussion of milestones and expected dates of completion. You are not committed to following this plan - but you must present a **FEASIBLE** plan to convince your committee that you know how to go about getting research results.
4. Program of Study: Include a list of all courses taken (including the number of credits and when they were taken) and all courses you are planning to take (including the number of credits and when you are planning to take them) that you will use to meet the requirements of your degree. **Do not include undergraduate courses.** *It is highly recommended that you have the Program Director review a DRAFT of the Program of Study before your proposal meeting.*