

#### Highlights of Lecture

- What is a Research Proposal
- Types of Research Proposal
- Writing a Thesis/Dissertation Proposal (with examples from various fields)
- Advice: Nuts and Bolts
- Realities of Research Proposal Cycles...

#### Research Steps

- 1. Choose a question to investigate
- 2. Identify a hypothesis related to the question
- 3. Make testable predictions in the hypothesis
- Design an experiment to answer hypothesis question
- 5. Collect data in experiment
- 6. Determine results and assess their validity
- 7. Determine if results support or refute your hypothesis

#### Research Proposal

A research proposal is a document proposing a research project, generally in the sciences or academia, and generally constitutes a request for sponsorship of that research.

Proposals are evaluated on **cost** and potential impact of the research, and on the soundness of the proposed plan for carrying it out.

#### Research Proposal

RP generally address several key points:

- what is the research question(s), and
- how they will be addressed
- What <u>cost</u> and time will be required
- What <u>prior research</u> has been done
- How the results will be evaluated
- How the research will benefit the sponsor and other parties

### Types of Research Proposal

Government Research Plan Proposal

**Group Research Proposal** 

**NSFC** Research Proposal

Technology Research Proposal

**Industry Project Research Proposal** 

Development Project Research Proposal

**Collaboration Research Proposal** 



**Thesis/Dissertation Research Proposal** 

Course Project Research Proposal

Task Research Proposal

# Writing Thesis/Dissertation Proposals



### Goals of this presentation

- To introduce strategies for bridging the gap between coursework/beginning research and thesis writing.
- To help you understand the rhetorical situation of the thesis proposal and common elements of such proposals.
- To introduce practical rhetorical and grammatical principles of writing effective proposals.
- To provide you with tips for drafting and revising individual sections of the proposal.

# Writing a Proposal: Developing a Focused Project



# Writing Thesis/Dissertation Proposals: The Big Picture

Your proposal describes your proposed plan of work:

- What you intend to study (scope & research questions).
- How you intend to study your topic (methodology).
- Why this topic needs to be studied (significance).
- When you will complete this work (timeline).
- (Occasionally) Where you will conduct this work.

#### **Writing Thesis/Dissertation Proposals**

#### **Purpose:**

- Justify and plan (or contract for) a research project.
- Show how your project contributes to existing research.
- Demonstrate that you understand how to conduct discipline-specific research in an acceptable timeframe.

#### **Audience:**

your academic advisor and committee



# Proposal Writing and Anxiety: General Advice

- Establish a writing schedule. (PLAN)
- Begin by free-writing.
- Keep a small notebook with you to write down relevant thoughts.
- Say parts of your writing into a recording device.
- Compose different parts in different computer files or on different index cards.
- Start with more "clear cut" sections first.

# Proposal Writing and Anxiety: Proposal-specific advice

- Understand that the proposal will be negotiated
  - -- be prepared to revise!
- Think of the proposal as a draft introduction to your thesis or dissertation.
- Remember: the proposal is not a binding contract.
- Remember: your proposal is not meant to limit ideas, but to help you think practically.
- Ask colleagues to form a writing group.
- Talk to your advisor!

### Parts of a Proposal

- Title
- Abstract
- Introduction/Background
- Problem Statement
- Purpose/Aims/Rationale/R esearch Questions
- Review of Literature

- Methodology
- Significance/ Implications
- Overview of Chapters
- Plan of Work
- Bibliography

### Creating a Working Title

- Orient your readers to your research topic.
- Indicate the type of study you will conduct.

#### **Examples:**

- Role of the Hydrologic Cycle in Vegetation
- Response to Climate Change: An Analysis Using VEMAP Phase 2 Model Experiments
- Geographic Representations of the Planet Mars, 1867-1907



#### **Abstract**

- Provide a brief (100-350 word) overview of the proposal
- Summarize important elements (Introduction, Statement of the Problem, Background of the Study, Research Questions or Hypotheses, and Methods and Procedures).



# Abstract: Example

The Black-Bellied Plover (Pluvialis squatarola) is a shorebird species threatened with becoming endangered because of the loss of habitat through twentieth-century urbanization. As a step toward preventing this species from becoming endangered, this report identifies the Black-Bellied Plover habitat in Louisiana. To identify the habitat, I examined information about Black-Bellied Plover sightings in Louisiana over the last 50 years and the land-use categories derived from satellite imagery of the sighting locations. These examinations indicate that the Black-Bellied Plover habitat in Louisiana is generally pasture and shrubland. To protect this species, the Louisiana Department of Parks and Wildlife or the private sector should conserve and monitor this habitat, especially in the areas where the most frequent sightings have occurred on Grand Isle and around Caillou Bay.

# Introduction/Background

- Establish the general territory (real world or research).
- Describe the broad foundations of your study—provide sufficient background for readers.
- Indicate the general scope of your project.
- Provide an overview of the sections that will appear in your proposal (optional).
- Engage the readers.

# Introduction: Example (1/2)

Although they did not know of the germs the animals might carry, residents of US cities in the 1860s and 70s cited the flies, roaches, and rats who swarmed the tenements in arguing for community sanitary programs. In the 1950s vermin provided justification for housing and health agencies to pursue urban renewal, and also gave tenant activists a striking symbol of officials' neglect of their neighborhoods. Today, though we know that vermin produce indoor allergens, and we have pesticides designed to keep vermin at bay, the fact that both may be hazardous confuses parents, health officials, and other advocates who



# Introduction: Example (2/2)

confuses parents, health officials, and other advocates who seek to protect health. As long as people have lived in cities, pest animals have joined us in our homes and buildings, affected our health, and propelled our policies on the urban environment. The social geography of pests, however, reflects the social position and physical surroundings of our neighborhoods.

The researcher's objective is to use the ecological history and social geography of pest animals, which have been blamed for several kinds of disease exposures throughout the past two centuries, to investigate how health and environmental conditions are connected with poverty in cities.

#### Statement of the Problem

- Answer the question: "What is the gap that needs to be filled?" and/or "What is the problem that needs to be solved?"
- State the problem clearly early in a paragraph.
- Limit the variables you address in stating your problem or question.
- Consider framing the problem as a question.

Despite the growing interest in nineteenth-century geographical representation, no geographer has yet seriously examined the remarkable discourses that emerged during the latter half of the century to represent the geographies of worlds beyond Earth. Popular histories of geography (e.g. Sheehan 1996; Morton 2002) indicate that astronomers collected extensive geographic data about the nearby planets, usually recording their findings in detailed maps that were strikingly similar in appearance to many of the well-studied imperial maps produced during the same time period. Although much of this astronomical-geographical knowledge compiled during the late nineteenth century has since been revised or discarded on the basis of twentieth-century remote sensing images, I contend that colonial era discourses had widespread scientific and cultural significance at the time they were created.

Reports on the state of freshwater reserves warn that severe local shortages are imminent, and predict that violent conflicts will emerge in water-scarce regions (Ohlson 1995, Elhance 1999). Water scarcity has been shown to cause civil conflict, particularly when accompanied by high population density, poverty, and income inequality (Homer-Dixon 1994, 1996; Hauge and Ellingsen, 1998). Urban migrant communities, where ethnic, religious, and class differences can exacerbate tensions, and community-wide patterns of adaptation to environmental scarcities are not well-formed, may be particularly vulnerable to water conflicts (Moench 2002). To better understand how conflicts develop in water-scarce regions, research is needed on the social and economic factors that mediate cooperation and conflict (Ronnfeldt 1997). I propose to do an indepth study of Villa Israel, a barrio of Cochabamba, Brazil, where conflict over water is an established part of life.

Surface light fields and surface reflectance fields are image-based representations of lighting which are parameterized over geometry. Constructing these representations is a timeconsuming and tedious process. The data sizes are quite large, often requiring multiple gigabytes to represent complex reflectance qualities. The result can only be viewed after a length post-process is complete, so it can be difficult to determine when the light field is sufficiently sampled. Often, uncertainty about the sampling density leads users to capture many more images than necessary in order to guarantee adequate coverage. . . . The goal of this work is a "casual capture" system which allows the user to interactively capture and view surface light fields and surface reflectance fields.

Historians searching for the causes of the Reformation have long assigned central importance to the role of the printing press. . . . [R]ecent scholarship has produced a number of important studies examining the role of printed media in the spread of the Reformation message. Much of this work tends to focus on the production and reception of Reformation texts and images, with little attention paid to the means by which such texts were distributed and circulated. Such studies are often premised on the assumption that texts and ideas enjoyed a relatively free circulation and that patterns of book production and distribution therefore serve as essentially transparent measures of interest and demand. . . . However, virtually nowhere in sixteenth-century Europe were ideas likely to flow unregulated through some critical discursive field. . . . I propose to examine the censorship of religious texts and images within the imperial city of Nuremberg, from [1513] until 1555].



#### Purpose/Aims/Rationale/Research Questions

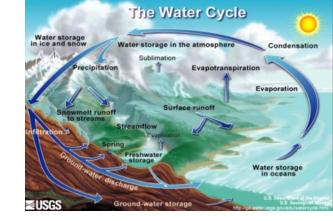
- Explain the goals and research objectives of the study.
- Show the original contributions of your study.
- Provide a more detailed account of the points summarized in the introduction.
- Include a rationale for the study.
- Be clear about what your study will not address.

# Purpose/Aims/Rationale/Research Questions (cont'd)

In addition, this section may:

- Describe the research questions and/or hypotheses of the study.
- Include a subsection defining important terms.
- State limitations of the research.
- Provide a rationale for the particular subjects of the study.

#### Purpose/Aims/Rationale/ Research Questions: Example #1

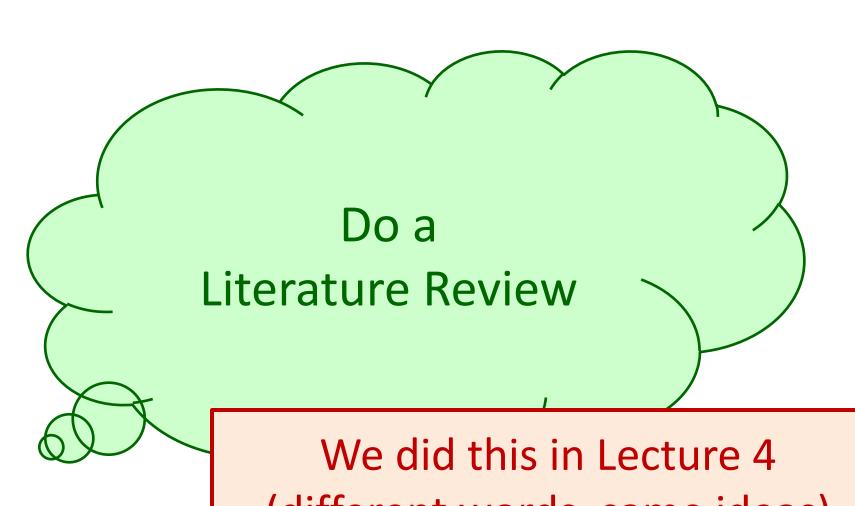


My objectives are twofold. First, I intend to examine the effects of historic shifts in climate on the interactions of the carbon and water cycles as simulated by the constituent models of VEMAP Phase 2. . . . Second, I will investigate how alterations to future climate, as simulated through the end of the 21st century, are predicted to impact those same cycles and interactions. The linkages between the carbon and water cycles at the regional scale have only recently been the subjects of research; hence, much work remains to improve our understanding of the feedbacks between coupled processes. . . . Questions I plan to investigate include: How does the water balance of a region, including surface runoff, change as a result of climate alterations . . . ?

#### Purpose/Aims/Rationale/ Research Questions: Example #2



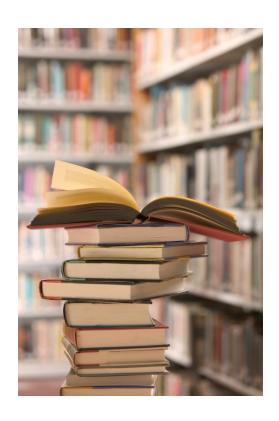
- The guiding research question is: Under what conditions do Latinos in Queens, NY, switch their ethnic identification? This involves the following specific objectives:
- To document the incidence of multiple ethnic identities among research participants. This involves collecting life histories that focus on the ethnic background of informants and their experience with ethnicity.
- To determine the contexts under which people invoke their ethnic identity. This involves collecting data on characteristics of the community and social networks of communities. It will also involve prolonged *shadowing* observations of the participants (with their consent) in their day-to-day activities. [etc.]



(different words, same ideas)

#### Review of Literature

Writing the literature review allows you to understand:



- How other scholars have written about your topic.
- The range of theories used to analyze materials or data
- How other scholars connect their specific research topics to larger issues, questions, or practices within the field.
- The best methodologies and research techniques for your particular topic.

### Review of Literature: Rhetorical Functions

- Situates the current study within a wider disciplinary conversation.
- Illustrates the uniqueness, importance of and need for your particular project.
- Justifies methodological choices.
- Demonstrates familiarity with the topic and appropriate approaches to studying it.

#### An Effective Literature Review should

- Flesh out the background of your study.
- Critically assess important research trends or areas of interest.
- Identify potential gaps in knowledge.
- Establish a need for current and/or future research projects.



#### Tips on drafting a literature review

- Categorize the literature into recognizable topic clusters:
  - stake out the various positions that are relevant to your project,
  - build on conclusions that lead to your project, or
  - demonstrate the places where the literature is lacking.
- Avoid "Smith says X, Jones says Y" literature reviews.
- Avoid including all the studies on the subject.
- Avoid polemics, praise, and blame.

#### Writing Literature Reviews: Key Point

- You are entering a scholarly conversation already in progress. The literature review shows that you have been listening and that you have something valuable to say.
- After assessing the literature in your field, you should be able to answer the following questions:
  - Why should we study (further) this research topic/problem?
  - What contributions will my study make to the existing literature?



# Literature Review: Example #1



Other studies also support the conclusion that traditional teaching methods hinder learning calculus. Selden, and Mason skills (1994), conclude that isolated, trivial problems, the norm in many classrooms, inhibit students from acquiring the ability to generalize calculus problem-solving. Similar results are reported by Norman and Prichard (1994). They demonstrate that many learners can not interpret the structure of a problem beyond surface-level symbols. They show that novices have inaccurate intuitions about problems which lead them to attempt incorrect solution strategies (Norman and Prichard 1994). Because they cannot see beyond high-level features, they can not develop correct intuitions. On the other hand, successful problem solvers categorize math problems based upon underlying structural similarities and fundamental principles (Silver 1979), (Shoenfeld and Herrman 1982). These categories are often grouped based upon solution modes, which the experts use to generate a forward working strategy (Owen and Sweller 1989).

## Literature Review: Example #2

Increasingly, the research community is turning to coupled land-surface-atmosphere-ocean models with dynamic modules to achieve the realism necessary for climate studies. Most of the studies to date have incorporated equilibrium vegetation models into climate change simulations (e.g., Neilson and Marks 1994, VEMAP Members 1995 . . . ; but see Foley et al. 1998 for an example of climate simulations with a DGVM). It is recognized that the next stage is to include dynamic representations of the terrestrial biosphere. In this context, VEMAP Phase 2 model experiments will provide a unique opportunity to assess the effects of climate change on the hydrologic cycle and the water balance of regions on a continental scale, and how vegetation dynamics mediate those responses.

## Methodology



- Introduce <u>overall methodological approach</u>.
- Indicate how approach fits the overall research design.
- Describe specific methods of data collection.
- Explain how you intend to <u>analyze and</u> <u>interpret</u> your results (i.e. statistical analysis, theoretical framework).
- If necessary, <u>provide background and</u> <u>rationale</u> for unfamiliar methodologies.
- Address <u>potential limitations</u>.

## Tips on Drafting Methodology (1)

- Break down your methodology into subsections.
  - In the <u>physical sciences</u>, these sections may include subjects, design, apparatus, instrumentation, process, analysis, etc.
  - In the <u>social sciences</u>, these sections may include selection of participants, interview process, profiles, interpretive and analytic framework, methods of qualitative analysis, etc.
  - In the <u>humanities</u>, these sections may include scholarly research, archival research, theoretical orientation, etc.

## Tips on Drafting Methodology (2)

- **Remember:** your methods section may also require supporting literature.
- Anticipate and pre-empt the audience's methodological concerns.
  - Acknowledge major problems.
  - Justify your approach by showing how benefits outweigh potential problems.

### Methodology: Example #1 (Social Science)



The research plan will proceed in two phases. During the first phase, I will select a 60-household purposive sample, create and test interview protocols, choose key informants, and train a research assistant. . . . During the second phase, I will conduct in-depth interviews with key informants and four ethnographic interviews with each household in the sample. At the end of the second phase, I will conduct a series of experimental economic games to determine the norms of trust and reciprocity in the community. . . . The research design has several strengths. First, ethnographic study will yield data with high internal validity about how responses to water scarcity evolve over the wet-to-dry cycle (Kirk and Miller 1986). Second . . . (After providing a rationale for the research design, the author goes on to describe in detail the site selection and methods of data collection and analysis).

## Methodology: Example #2 (Humanities)

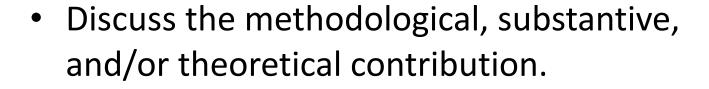


My research draws on a three-tiered methodological approach: close textual analysis of primary source material; historical contextualization of both primary documents and broader socio-cultural framework through archival research and secondary histories; and interpretation of primary texts through theoretical frameworks, including spatial theories and gender studies. (...Goes on to describe specific theoretical frameworks).

## Methodology: Example #3 (Physical Sciences)

I am proposing two major analyses: 1) a comparison of simulated to observed streamflow and soil moisture for the historical period as a means of validating the hydrology of the VEMAP models, and 2) an examination of how changes in the water balance affect species' distributions over the entire simulation period, and vice versa. . . . VEMAP Phase 2 model runs will cover two periods: (1) the baseline or historical period from 1895-1993, and (2) a period of altered climate inputs from 1994 through the end of the twenty-first century as derived from three climate model experiments: i) The Canadian Centre for Climate Modeling and Analysis . . . The nearly 100-year baseline period will allow for the examination of multi-decadal variations that may be of similar magnitude to the effects of climate change. (Goes on to describe sources for historical data, and how the interaction between water balance and species' distribution will be measured).

## Significance/Implications





 State the practical and/or theoretical importance of the problem and/or objectives of your study.

 Explain the usefulness or benefits of the study to both the outside world and the research community.

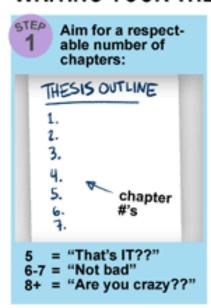
## Significance/Importance: Example

My research on identity and development is innovative because it brings together analysis of national discourses about Indians with a study of the practices and choices of the individual Indians whose identities are at issue. I believe this research can be helpful to the nation, development agencies, and indigenous organizations as Bolivia works out what a multicultural identity will mean for its people. I am particularly committed to sharing the results of my analysis with the Guaraní people with whom I work, in the hopes that my work will not just be an extraction of truths, but will give them information with which they can better control their lives and resources.

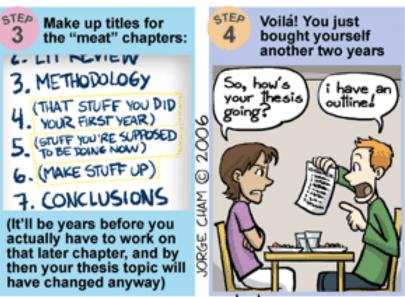
## Overview of Chapters

#### WRITING YOUR THESIS OUTLINE

NOTHING SAYS "I'M ALMOST DONE" TO YOUR ADVISOR/ SPOUSE/PARENTS LIKE PRETENDING YOU HAVE A PLAN







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## Overview of Chapters

 Some proposals include a sentence length description of each chapter (i.e. chapter two reviews relevant literature; chapter three discusses the methodology).

 Other proposals include more in-depth reviews of body chapters that might include major hypotheses, arguments, methods, etc. for each chapter.

## Timeline/Plan of Work

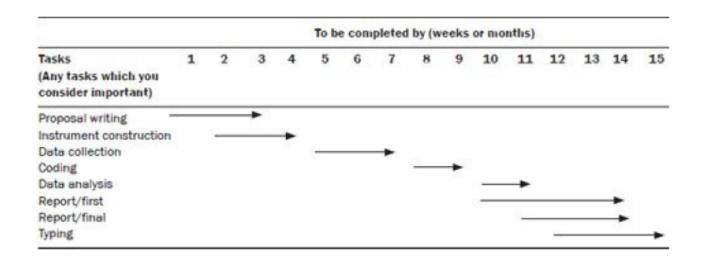


#### Some things to keep in mind:

- Consult your advisor.
- Be aware of important dates for submitting and defending dissertations.
- Do not be overly ambitious.
- Remember that your proposed timeline demonstrates your awareness of the various elements of the study (review board approval, travel; design, testing, and length of experiments; negotiation of entry into the study site; purchase of necessary equipment; drafting; redrafting).

## Eg: Give a timetable.

#### A Timetable





## **Eg: Create Gantt Chart**

#### Gantt chart

Task Name	Q1 2019			Q2 2019		Q3 2019
	Jan 19	Feb 19	Mar 19	Apr 19	Jun 19	Jul 19
Planning						
Research						
Design						
Implementation						
Follow up						



## Bibliography & Appendices

- Include a working bibliography of key texts that inform your study and methodology.
- Your appendices may include Experiment Diagrams, Permissions for Human Subject Testing, etc.
- Both bibliographies and required appendices tend to be discipline specific: know what the requirements are.

## More Proposal "Nuts and Bolts"

- Length
  - Varies by field; most are roughly 20 pages, but they can be much longer.
- Style Considerations
  - Tone
  - Coherence
- Voice
- Visual Aids



## Style Considerations: Tone



- When conveying your attitude in your writing:
  - Try to strike a consistently confident tone.
  - Avoid an apologetic or arrogant tone.

## Style Considerations: Coherence

- Move from "old" information to "new" information.
- Put the most important information at the end of the sentence (stress position).
- Keep the subject and verb together.
- Start sentences with short, easily understood phrases.
- Use "stock" transitional phrases.
- Use pronouns and/or recycling.

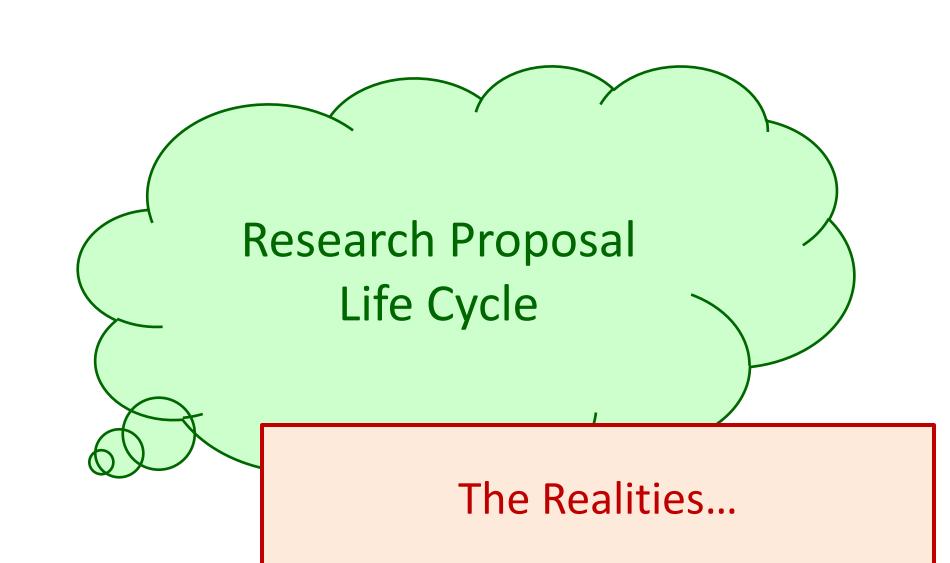
# More "Nuts and Bolts": Voice and Visual Aids

#### Voice

- <u>Active:</u> I will conduct the bulk of the research during the sixmonth fieldwork period.
- <u>Passive</u>: The bulk of the research will be conducted during fieldwork.

#### Reasons to use Passive Voice:

- Your field may prefer its use, especially in describing research design and experimental activities.
- You need to preserve coherence from sentence to sentence.



## **Project Summary / Abstract**

- One page
- State problem
- Propose solution
- State project objectives and significance

Some special requirements

## Summary A Good Proposal . . .

- Starts with a good idea
- Is carefully researched
- Matches a particular sponsor's priorities
- Is neat and well written
- Follows guidelines carefully
- Describes need for research, objectives, plan of operation, expected outcomes, evaluation plan, sustainability and timeline
- Demonstrates cost-effectiveness (for fund )

Modified from Lecture 05...

# Research Proposal (for Assignment 3)

- Title
- Abstract
- Introduction/Background
- Problem Statement
- Objectives/Rationale/ Research Questions
- Review of Literature
  - Add Gaps & Challenges
- Changes to Prob Stmt

- Methodology
- Significance/ Implications
- Overview of Chapters
- Plan of Work
- Bibliography

#### WHAT YOU HAVE TO DO:

- 1. Start from your LR (Assgmt 02)
- 2. Follow Assgmt 03 tasks description We grade mostly parts in blue.