ATMO 611 – Satellite Data Applications   TERM PROJECT

400 Points Total Available (300 paper and 100 presentation)

MOCK NSF/NASA PROPOSAL – Presentations 12/5, 12/7 and 12/12 – Projects due 12/12

A project proposal is the first step for researchers to get funding from anywhere. You need to write a proposal to your advisor, your university, your company, your city, state, governmental agencies (USGS, USDA, NSF, NASA, NOAA, DoEd, DOE, …) for any funding opportunity. A proposal for a small amount of money is usually 5 pages; for a standard and multi-year proposal to governmental agencies, it is usually 15 pages including budget, broader impacts and milestones. For this assignment you will be writing a 10 page paper focusing on the scientific idea and a case study to show you can do a bit of the analysis you propose. The format for a proposal might change from agency to agency, from announcement to announcement, or from program to program, but several basic elements should be included:

1) An introduction to state the current problems and why you want to propose this project;
2) Objectives and significant of the project and hypotheses or questions you want to answer;
3) What kind of data, method and modeling approach you will use to conduct the project, and usually you need to show some preliminary or previous results;
4) Expected results and/or potential significance after you finished the project

I have copies of different types of proposals, which have been funded, for you to look through in my office.

This term project will take the form of a 10-page multi-year proposal. You will only need to include the "science" component, not the planning, time line, milestones, broader impacts, education component or budget, though you can experiment with these if you like.

Timeline and Deadlines for Term Project: (Grey = Do not turn in)

Deadline	Project Component
9/15	**(Turn in by email) Potential Topic**: List of three satellite data sets you plan on using in your "proposal." The minimum is three, you can use more datasets if you choose/need.
10/6	**(Turn in by email) Draft – Literature Review**: 2-3 page (or more) review of literature you plan to include in your "Introduction" section to set the stage for why you are proposing your research. A great idea is to tie your topic to your thesis research. How can you look at your thesis work using satellites? What new question/aspect could you address?
10/20	**(Turn in by email) Draft Outline:** objectives, data set descriptions, specific hypotheses you like to test, methods of how you will use your data.
11/3	By this date you should complete some data analysis using an example (a successful case-study or mini-analysis) using the three data sets. This is to show you can successfully perform the analysis you propose on a small scale.
11/17	Work on your Abstract and Summary to tie things together.
12/5, 12/7 and 12/12	Presentations
12/12	Final Paper/Proposal Due (10 pages + References)

POTENTIAL TOPIC INSTRUCTIONS

All that is needed for this part of the assignment is:

1) Potential Topic (hurricanes, cloud-aerosol interactions, whatever),
2) Draft Title – basically an early idea of your title based on your topic.
3) Satellites – What three (or more) satellite data sets you plan to use and why.
4) Send via email by **9/15**. Dr. Griswold will send comments via email while away.

LITERATURE REVIEW

The literature review will essentially be a draft of your introduction section. This is where you ready papers related to your main hypothesis and science questions/goals. You will be expected to have a introduction, body section and conclusion section. See helpful guidelines for each section below: This is due on **4/24** when Dr. Griswold returns from travel. You will be re-using this and editing this to become part of your proposal.

Writing the introduction

In the introduction, you should:
- Define or identify the general topic, issue, or area of concern, thus providing an appropriate context for reviewing the literature.
- Point out overall trends in what has been published about the topic; or conflicts in theory, methodology, evidence, and conclusions; or gaps in research and scholarship; or a single problem or new perspective of immediate interest.
- Establish the writer's reason (point of view) for reviewing the literature; explain the criteria to be used in analyzing and comparing literature and the organization of the review (sequence); and, when necessary, state why certain literature is or is not included (scope).

Writing the body

In the body, you should:
- Group research studies and other types of literature (reviews, theoretical articles, case studies, etc.) according to common denominators such as qualitative versus quantitative approaches, conclusions of authors, specific purpose or objective, chronology, etc.
- Summarize individual studies or articles with as much or as little detail as each merits according to its comparative importance in the literature, remembering that space (length) denotes significance.
- Provide the reader with strong "umbrella" sentences at beginnings of paragraphs, "signposts" throughout, and brief "so what" summary sentences at intermediate points in the review to aid in understanding comparisons and analyses.

Writing the conclusion

In the conclusion, you should:
- Summarize major contributions of significant studies and articles to the body of knowledge under review, maintaining the focus established in the introduction.
- Evaluate the current "state of the art" for the body of knowledge reviewed, pointing out major methodological flaws or gaps in research, inconsistencies in theory and findings, and areas or issues pertinent to future study.
- Conclude by providing some insight into the relationship between the central topic of the literature review and a larger area of study such as a discipline, a scientific endeavor, or a profession.