Term Project: A Proposal

REQUEST FOR PROPOSALS (RFP)

The class MAR581 of the USM Department of Marine Science requests proposals of basic research in the subject area of geological oceanography.

PROJECT DELIVERABLES

Prepare a proposal (~ 20 pages double spaced, 12 point font) on a cutting-edge, basic-science topic in geological oceanography. Select a topic, do some reading to identify a problem, formulate a research goal and testable hypothesis, and conceive an approach to testing the hypothesis. Pre-proposals (topic, question, and annotated bibliography), proposal, and presentation must be submitted to the program director as outlined below. The cognizant officer is C. Brunner.

Feb 09: Topic due. Choose a topic, discuss it with the program manager, and get approval.
Mar 09: Question due. Submit a question with a one-page plan of what you intend to do. The question is subject to approval of program manager, so make an appointment to discuss your project with the program manager.
Mar 23: Annotated bibliography due. For ~10 papers, give a complete citation in the style used by the journal, Marine Geology, and annotate the citation with a description of the information the paper contains that is relevant to your project.
Apr 20: Written proposal due.
Apr 27, 29: Presentation. 15 minutes, including a few minutes for questions.

PROPOSAL

TOPIC

Choose a geological oceanography topic from science news.
1. Look over the American Geophysical Union (AGU, published in EOS) and Geological Society of America (GSA) Abstracts from their 2004 annual meetings. These can provide ideas for topics of current research interest.
2. Look at lead articles in GSA Today (http://www.geosociety.org/pubs/gsatoday/), which you can also get from Maury Library, filed with the periodicals.
3. Also look over the geological oceanography papers discussed in the “New and Views” section in Nature and the equivalent section in Science. I recommend the any geology news articles by Richard Kerr of Science, who has an award winning knack for laying out interesting questions.
4. You might also look over this NSF Marine Geology and Geophysics website, http://www.nsf.gov/funding/pgm_summ.jsp?pims_id=11726&org=OCE&from=home. Look over all of it, including the Recent GEO Awards button in the column on the left of the page near the bottom. You will see a listing of currently funded projects that might give you a few ideas. NOTICE THAT PALEOCLIMATE ISSUES AS THEY RELATE TO CLIMATE CHANGE ARE A HOT ITEM.

5. Try geological oceanography topics in Geology, a journal like Nature and Science but for geological science (http://www.gsaJournals.org/perlserv/?request=index-html).

**LITERATURE RESEARCH**

The background and present status of the question should be researched from the scientific literature. Although some non-peer-reviewed web sites are acceptable, especially data repositories and databases like National Geophysical Data Center (NGDC; http://www.ngdc.noaa.gov/), the majority of the paper should be based on peer-reviewed literature published in national and international journals. Statements of fact, data, and other people’s results, their discussions, and their ideas must be properly credited by standard abbreviated citations in the text, which should be followed at the end of the text by a reference section of complete citations. Figures modified from other works should be properly credited in the captions and cited fully in the reference section. The paper should be entirely in your own words and in accord with copyright laws and USM academic policy regarding plagiarism. The topic must be one that you have not written up in another class nor as a thesis or thesis prospectus.

**STYLE**

Use 12 point font and double spacing. Use the format described below, which generally parallel’s that used by many agencies and is quite similar to a thesis prospectus. Cite literature using in the format of the Journal of Foraminiferal Research (style sheet appended to this document). Make the standard abbreviated citation in the text and compile a list of complete citations in order nested alphabetically and by date in a reference section at the close of the proposal. Figures, tables, and plates may be embedded in the text or follow the text. Tables and figures should be captioned. You do not need to submit a budget nor any of the other forms often associated with a proposal, like a curriculum vitae, listing of current grants and pending proposals, a description of facilities, nor a budget justification. Remember, it is essential to comply with the requirements of the RFP, and this may require contacting the program manager (in this case, your professor) and asking for clarification of some aspects of the RFP.

**GRAMMAR**

Science writing is highly structured by convention to facilitate clarity. The experienced science reader knows what to expect in the writing and, so, can focus attention on the science. That’s the theory, anyway. Here are a few suggestions. Each paragraph should start with a topic sentence, and each sentence in the paragraph should elaborate on the topics introduced by the topic sentence. Use of topic sentences requires that you decide the purpose of the paragraph is
before you write it. Believe me, your readers will thank you for good topic sentences!

Here are miscellaneous grammar bonbons. Use the passive voice when describing your own actions (yetch, I hate it, but do it anyway) but use the active voice in most other cases. Use the simplest verb construction possible and where logical, be consistent in using past or present tense within a paragraph. Guard against lost adjective clauses (they should sit immediately next to the noun they modify), long strings of hedge words, too many adjectives before a noun, and fancy punctuation if you are unclear on how to use it. Unlike fine literature, semicolons are mainly for police action: (1) to separate items of a list following a colon; or (2) in cases where many commas are used so that their meaning becomes ambiguous. Use colons and semicolons to keep order, not for nuance. Avoid using the 1/m dash unless you are sure you know how to use it. Better yet, just rewrite a complicated sentence so you don’t need to use fancy punctuation. Use your dictionary and *Glossary of Geology* to check the meanings of words you seldom use to make sure you use them correctly & I’ve seen some doosies! (OK, busted, doosie is not a proper word, and I used a 1/m dash.) Check your dictionary for advise on how to use commonly misused words, like “that” and “which,” “lie” and “lay,” and others. An unabridged dictionary provides basic grammar rules for usage of commonly misused words. For example, look up “that” and “which” to learn when to use one rather than the other (restrictive and unrestricted adjective clauses) to start a clause. Alternatively, Google for online grammar help.

**PROPOSAL FORMAT**

1. **Title Page**
   Use the format illustrated Appendix 1 of this handout. Notice the kind of information that belongs on a cover page of a grant proposal.

2. **Project Summary** (layman’s terms, please)
   A summary of no more than 250 words intended for a general science audience. The summary should include what is to be studied, why it is important scientifically, how it will be done, and what will be delivered. A congressman or science administrator who is not trained in your field might need to make sense of your project summary. Don’t irritate them!

3. **Body of Proposal** (This part is intended for peer scientists, so technical language is called for.)
   *Objectives:* Start the proposal with a clear statement of the problem and its significance. This is not a restatement of the Summary above, but a more detailed development.

   *Present Status of the Question:* Provide background. The background includes defining terms and describing processes necessary to understanding the proposal. Most importantly, the background summarizes the previous relevant research on the topic and identifies relevant problems and gaps in current knowledge. It should build up to the hypothesis section so that the reader is ready to say, “Yes, yes, yes! These hypotheses are exactly what is needed to address
these problems!”

**Hypothesis:** Propose a specific, testable hypothesis that you will tackle, if funded.

**Methods:** Clearly detail the methods you will use to test the hypothesis. Make sure that each testable hypothesis is fully treated by a research method or methods that will prove or disprove it. Be sure to address the problems and weaknesses in the methods, if there are any.

**Significance of research:** Close the proposal with a section that explains to peer reviewers and the program manager why the proposed work is significant and why the proposed work should be funded now (and not deferred to a later time). Successful proposals have good ideas, but in addition, they are well-written, logical, and convincing. A convincing proposal doesn’t end with a whimper at the end of the methods! It closes with a compelling statement about why, in the grand scheme of science, this work is important and has to be done now in order to take the next step in this field. Give the program director good reasons to fund you. He/she might assume you don’t understand the situation if you can’t articulate its importance and urgency.

**4. References** - All literature and websites cited in the text should be written out in full in this section. It is just like the reference sections in most journals. Use the format from the journal, *Marine Geology* (appendix 2).

**5. Captions for tables, figures and plates**
**6. Tables**
**7. Figures**
**8. Plates**

Alternatively, 5-8 may be embedded in the text.

**Other Stuff**

Proposals typically include several other parts which you are NOT required to do: a budget, budget justification, CV, a listing of current grants and pending proposals, other details.
Appendix 1. Title-page format.

A proposal from

The University of Southern Mississippi
Office of Research and Sponsored Programs
Box 5157
Hattiesburg, Mississippi 39506-5157
tel. 601-266-4119,
Responsible Officer: Ms. Constance Wyldmon, Director
E-mail: connie.wyldmon@usm.edu

titled

[Title]

submitted to

National Science Foundation
Directorate for Geosciences
Division of Ocean Sciences
Marine Geosciences Section
Marine Geology and Geophysics Program (MG&G)
4201 Wilson Boulevard, Room 725, Arlington, Virginia, 22230

This proposal is submitted in response to a request for a full proposal from Professor Charlotte Brunner, Instructor of MAR581.

Total Funding Requested: $
Year 1: $

Duration: [i.e., October 1, 2002 – September 30, 2003 (1 year)]

Principal Investigator: [Name]
Department of Marine Science
The University of Southern Mississippi
Stennis Space Center, Mississippi 39529
tel. [Phone Number]
fax. [Phone Number]
E-mail: [e-mail address]
Appendix 2. CITATION OF REFERENCES

*Marine Geology* format
http://www.elsevier.com/wps/find/journaldescription.cws_home/503350/authorinstructions

Responsibility for the accuracy of bibliographic citations lies entirely with the authors.

Citations in the text:
Please ensure that every reference cited in the text is also present in the reference list (and vice versa). Any references cited in the abstract must be given in full. Unpublished results and personal communications should not be in the reference list, but may be mentioned in the text (i.e. "in preparation" is not a valid citation in the reference list). Citation of a reference as 'in press' implies that the item has been accepted for publication.

Citing and listing of web references:
As a minimum, the full URL should be given. Any further information, if known (author names, dates, reference to a source publication, etc.), should also be given. Web references can be listed separately (e.g., after the reference list) under a different heading if desired, or can be included in the reference list.

Text:
All citations in the text should refer to:
1. Single author: the author's name (without initials, unless there is ambiguity) and the year of publication;
2. Two authors: both authors' names and the year of publication;
3. Three or more authors: first author's name followed by 'et al.' and the year of publication. Citations may be made directly (or parenthetically). Groups of references should be listed first alphabetically, then chronologically.

Examples: "as demonstrated (Allan, 1996a, 1996b, 1999; Allan and Jones, 1995). Kramer et al. (2000) have recently shown ...."

List:
References should be arranged first alphabetically and then further sorted chronologically if necessary. More than one reference from the same author(s) in the same year must be identified by the letters "a", "b", "c", etc., placed after the year of publication.

Examples:
Reference to a journal publication:

Reference to a book:

Journal names should be abbreviated according to list of serial title word abbreviations: http://www.isn.org/lstwa.html.