Structural Geology Research Project Poster:

Goals:
1. Apply what you are learning in class in order to conduct real science (discovery)
2. Improve your skills at reading professional geologic literature
3. Improve your skills at scientific writing and presentation
4. Explore topics of structural geology more in depth than can be done in class
5. Work as a team with other scientists

General Information:
Each student will design and perform a research project relating to the general topics covered in structural geology. Students should work together in small groups (between two and four people to a group) on a broader project, but each student must have his/her own aspect of the project.

Stages of the project (details and due dates):
1. Vague Notion (5%) Due: February 1, 2006 beginning of class

For this preliminary deadline, you should have read the first chapter of your textbook and skimmed other chapters of interest. You should have a rough idea of what general topic interests you and what general approach you would like to take for your project. (Examples: analogue modeling of folding using common substances, field study of jointing in a particular region, thin section study of shear zones.) In addition, it would be helpful here if you would think of some particular questions that your research might attempt to answer. The precise question does not need to come until later, but it is always good to be thinking ahead.

What you need to turn in:
You (each person needs to hand in his or her own paragraph even though you will be working in a group) will need to submit a paragraph (typed) describing 1) your idea, 2) who you might work with (if you know), 3) geologic questions that you might address in your research, and 4) potential concerns or problems that you have about your proposed project.

2. Proposal and research groups (15%) Due: February 20, 2006, beginning of class

For your proposal, you will need to submit a group document describing your project in detail. Remember that if you are working in a group, you need to justify having all members of the group. For example, if you work in industry or apply for a grant, the company or the grant agency won't hire 3 geologists to do the work of 2. Make sure that your project has enough separate parts for each participant to be active in the project. You will also need to have searched (use georef, the most comprehensive library geologic search engine) for at least 4 articles or books from the professional literature that may be helpful in your portion of the project. Each group member must have at least 4 different articles (you needn't have read these articles yet, but you should have identified that they exist).

What you need to hand in:
You will submit a group proposal (typed, no page limit- but anticipate that you should have approximately one page/ investigator). Your group proposal must include: 1) a summary of the
project indicating the specific question or questions to be answered by your research, 2) a breakdown of the project amongst investigators indicating who will be conducting various parts of your study and an estimate of the time involved to conduct each portion of the study, 3) For each member of the group- a list of 4 professional journal articles or books that look most promising to help you conduct your portion of the project (use the reference format on the accompanying page).

3. Formal Proposal (30%) Due March 15, 2006 beginning of class

At this stage in the project, you should have all the preliminary reading done that you need before you dig in and start conducting your research (collecting data etc.). Your proposed research should now be formalized and the questions that you are attempting to answer should be clearly defined and articulated in you proposal. You should be able to explain why your research is new, how it relates to work done by previous researchers, and why it is important and/or how it will contribute to general geologic knowledge.

What you need to turn in:
You will submit a group proposal (typed, no page limit- but be sure you thoroughly cover the important information). Your group proposal should be divided into the following sections: 1) **Introduction.** Why is your project important? What questions do you hope to answer? 2) **Background information.** What did you learn from your reading? What work has already been done in your general topic area? What are methods or strategies that have been used by previous researchers in your subject? 3) **Methods.** How will you answer your question? Again, be certain that each investigator has his or her own tasks. Be sure to explain how the research done by each person contributes to the overall study. 4) **Reference List** Use required format.

4. Poster (50%) Due: FINAL EXAM TIME. Saturday May 13, 2006 12:30-2:30 PM

On this day, you and your group will present a poster of your work to the other members in class. **You will need to hand in:** 1) an abstract and 2) your poster.

**Abstract**
On a separate sheet of paper, type an abstract. In no more than 200 words, describe what your poster is about. See abstract volumes from recent GSA or AGU meetings for examples. You can search for these on the following websites:
http://rock.geosociety.org/indexing/abstractSearch.asp
http://www.agu.org/dbasetop.html

**Poster Content**
Given the varying nature of everyone’s project, each groups’s poster will be very different. Your poster should contain both words and diagrams, giving the viewer:
1) A well-defined plan- what you have attempted to do in your project.
2) Background and previous research done in the area of your project (both in the physical field area and in the general area of the type of study you are conducting).
3) Photos and/or sketches of your field area, thin sections, or experiments- highlighting important structural features.
4) Stereonets, Flinn diagrams, deformation mechanism maps, or other appropriate figures that will display and help us understand your data.
5) Conclusions

6) References. Cite any sources that you mention or use in your poster.

Remember that this assignment should be treated as the visual equivalent to a research paper. Your goal is to make the poster a visual representation of your work; generally, pictures rather than words are best. As in a research paper, proper citation of references is important. See the attached page for citation guidelines. (Remember, most students cite too infrequently!)

**Poster Format**

Your poster should be large (typical conference posters are at least 3 ft x 6 ft) and easy to read (neat with many figures and large text). Generally, people put too much tiny text on posters.

For help, consider the following tips offered on the GSA website:

- Place the title of your paper prominently at the top of the poster board to allow viewers to identify your paper easily. Indicate 1) the presentation number of the abstract, 2) title, and 3) author(s) names. Highlight the authors' names and address information in case the viewer is interested in contacting them for more information.

- Prepare all diagrams or charts neatly and legibly beforehand in a size sufficient to be read at a distance of 2 meters. Paragraph and figure caption text should be AT LEAST 24 point font (0.9 cm height) and headers AT LEAST 36 point font (1.2 cm height). Use creativity by using different font sizes and styles, perhaps even color. Use different colors AND textures/symbols (some people are color-blind) for each line or bar contained in your graph or chart. A serif font (e.g. Times) is often easier for reading main text, and a non-serif font (e.g. Arial or Helvetica) for headers and figure labels.

- Organize the paper on the poster board so that it is clear, orderly, and self-explanatory. You have complete freedom in displaying your information in figures, tables, text, photographs, etc. The presentation must cover the same material as the abstract. Use squares, rectangles, circles, etc. to group like ideas.

- Don't clutter your poster with too much text! Label different elements as I, II, III; or 1, 2, 3; or A, B, C. This will make it easier for a viewer to easily follow your display. Include the background of your research followed by results and conclusions. A successful poster presentation depends on how well you convey information to an interested audience.

**Your grade for this project will be determined via the following criteria:**

1. Have you asked and answered a specific question/s?
2. Have you collected a detailed set of data?
3. **Have you separated your data from interpretation of the data?**
4. Have you done adequate research on prior work that is relevant to your project?
5. Is your interpretation reasonable? Does it make sense?
6. Have you presented the information in an accessible way on your poster? (Is the poster readable **use big font!**)? Are there sufficient graphics? Are the graphics linked to the text? Your poster should not be handwritten, put together hastily, printed in tiny font, etc. Can the viewer easily follow your poster?
7. Have you used citations correctly? Do you have a correct works cited section? Remember, figures need citations too!
Structural Geology Project: Guidelines for References

CITATIONS:
Quotations are relatively rare in scientific writing. Citations attributing information to its source are typically used instead. Citations in geologic writing may be different than those used in other fields. While citation and bibliography style may differ between major geology journals, some aspects of style are similar. For example, the year of the work is given prominence. This is not typically done in nonscientific disciplines because often, the date has little to do with the current believability of the work. For example, someone’s analysis of Hamlet in 1900 may be equally valid to someone’s analysis of Hamlet today. However, in geology, very little of the work done in 1900 (long before the advent of plate tectonics) should be used in research where you are trying to understand the current state of knowledge. Keeping this in mind, use the following citation style within your text. Be sure to cite the sources of figures too!

For a single author, use the citation: (Hoffman, 1988).
For two authors, use the citation: (Walter and Heys, 1985).
For many authors, use the citation: (Coney et. al, 1980).

Example:
Microcontinents accreted onto the west coast of North America (Coney et. al, 1980).

If you choose, you may refer to the actual authors within your text. For example:

An analogue to the Archean microcontinental accretion may be the terrane accretion off the western coast of North America such as described by Coney et. al (1980).

WORKS CITED PAGE:
All citations in your text and on figures needs to be included in the Works Cited section. This section should include all the works you cited throughout the poster, and nothing extra.

For articles, use the following format:


For books, use the following format:


Webpages:
In general, DO NOT use web pages as they have dubious material and authorship. If you wish to use a webpage, consider the following questions:
1. Is this a creditable source?
2. Is the authorship given?
3. Is this written by an author who is a credible scientist?
4. Was s/he actively involved in the research presented here?

If the answers to all 4 of these questions are yes, you may use a web source. *If you have any questions about whether a web source is appropriate, ask me before you write your paper!*

**CITATIONS & BIBLIOGRAPHY FOR WEBSITES**
To cite the website, you MUST give: the web address, a title of the webpage, authorship (either an individual scientist or an organization), and the date that the information was posted.

In the text:

No significant deformation was occurring in Mauna Loa during the month of February, 2002 (USGS, 2002).

In the bibliography: