GEOLOGY / SOIL SCIENCE 496
COLUMBIA PLATEAU FIELD COURSE
SPRING SEMESTER, 2005

INSTRUCTIONS FOR STUDENT PROJECTS

Your final course grade for Geology/Soil Science 496 will be based on: 1) your participation in all aspects of the field trip; 2) the quality of a field notebook of observations to be maintained by you during the trip; and 3) your project, as presented both as a contribution to the field text and as an oral presentation in the field.

Regarding this latter aspect, every individual on this trip is expected to contribute some aspect of research and intellectual content toward making the course possible and productive.

For this project, you will volunteer for (or be assigned) a topic related to a geologic or soils stop for the field course. You will then thoroughly research the topic, preparing a contribution as a chapter to the field text. In addition, you will present your topic as a 15 minute field presentation, supported by graphics drawn in multiple colors onto large posters.

Topics will be assigned according to background level in geology or soil science. Beginning students will be given their choice of overview assignments. Advanced students will be given their choice of more geo/soil-specific topics.

Field Text Chapter: A multiple page, typewritten contribution to the guidebook will be prepared by each student. The contribution is to be modeled on those of previous spring field trip guidebooks. The chapter is to be written in your own words and should include an adequate, professional, and even rigorous overview of the assigned topic. It should be supported by graphics, by citations in the text to reference sources, and well presented list of reference sources. References should give author name(s), date, title, journal or book title, and volume/page numbers (G.S.A. format preferred). Pages should be numbered by your chapter number assignment at the bottom center of each page (for example, "Chapter 12" will have pages numbered "12-1," "12-2," etc., at the bottom center of each page).

See the posted example on the hallway bulletin board. Your contribution should be modeled on this, including citation and reference format.

The chapter will be printed back-to-back. For binding, allow 1.5" along the left margin of all odd-numbered pages. Allow 1.5" along the right margin of all even-numbered pages.

You need only prepare one, master copy. All expenses in preparing this one copy are your responsibility.

I will photocopy all chapter contributions and present copies to the class in 3 punched form for entry into their field binders.

DEADLINE FOR RECEIPT OF CHAPTERS: 4:30 p.m., Monday, February 28th.

Field Presentation: Each student will give a 15 minute oral talk on her/his topic at the appropriate field site. The talk will be supported both by graphics within the chapter as well as by graphics neatly sketched in advance onto large poster(s). The talk should be well rehearsed and professional. Time will

be allowed at the end of each presentation for questions. Students should prepare their posters well in advance of departure. Students are responsible for the safe transport of their own presentation materials.

Potential Topics: Unless otherwise indicated, the project titles posted below are available on a first-come, first-served basis. I'll post the name of the "claimant" next to each topic on the course web site. Watch the course site for constant updates.

The list below is not intended to be exhaustive. There's plenty of geology to view during the trip(!), and so if you'd like to propose another topic (or a more specific topic), see DPS.

To claim a project, contact D.P. Schwert, NDSU Geosciences. I am reserving the "easier" topics for intro students.

For a general literature search using GeoRef (available through the WinSpirs icon on NDSU cluster machines), try this search string: (((scabland* or columbia plateau or glacial lake missoula) and (washington or oregon or idaho)) in ti ab de) not (abstract* or agricult* or ground*water). You should be able to cut and past this search string into GeoRef. For literature on the Clarkia fossils try this: clarkia and idaho and fossil*.

Citation and reference format for each chapter is to strictly following the format of the Geological Society of America publications (see any G.S.A. journal or book for examples

- J Harlen Bretz: Perspectives on a Catastrophic Origin for the Channeled Scablands *(Donald Schwert)*
- Richard Foster Flint: Perspectives on a Non-catastrophic Origin for the Channeled Scablands
- Glacial Lake Missoula: Size, Volume, History, and Evidence
- Nature of the Ice Dams for Glacial Lake Missoula
- Volcanic Ashes of the Columbia Plateau: Stratigraphy and Correlation
- Volcanic Ashes of the Columbia Plateau: Significance, and Engineering Properties
- Frequency of Lake Missoula Floods: Nature and Interpretation of the Evidence
- Sedimentological Evidence for the Magnitude of the Lake Missoula Floods: Pendant Bars, Ripple Marks, Cross-beds, Clast Sizes, etc.
- Tectonic Setting of the Pacific Northwest During the Miocene Epoch
- Tectonic Models for the Columbia River Basalt Eruption
- Areal Extent, Thickness, and Volume of the Columbia River Basalt Group
- Geology of the Ephrata Fan
- NASA's Interests in the Channeled Scablands for the Mars Lunar Rover Project
- Geologic Setting and History of the Dry Falls Region
- Structural Geology and History of the Yakima Fold Belt
- Dikes and Vents of the Columbia River Basalt Group
- Correlation Techniques for Flows in the Columbia River Basalt Group
- Geochemistry of the Columbia Plateau Basalts
- Geologic Setting of the Ginkgo-Wanapum State Park Region
- Loess Deposits of the Palouse: History, Properties, and Soils
- History of the Palouse River and Palouse Falls
- The Touchet Beds: Significance Relative to the Lake Missoula Floods
- History and Catastrophic Discharge of Pleistocene Lake Bonneville
- Geologic Setting of the Clarkia, Idaho, Region
- The Clarkia Fossil Deposits: Overview and Significance