Project 1:
Sedimentology of the Jackfork Group, DeGray spillway near Caddo Gap, Arkansas
Due: September 30, 2003

Over the next month or so, we will use the Pennsylvanian age Jackfork Group (JFG) to get some initial practice at interpreting sequences of sedimentary strata. I chose the JFG for a couple of reasons:

- I did my dissertation research there, which means that…
- I have an excellent data set for these rocks and…
- I am very familiar with these rocks and…
- the sequence is, at first blush, relatively straightforward to understand.

I have created a website that serves as a "virtual field trip" to the JFG units. This web site provides background information, images, and data that you will use in this project. You can get there from the course Blackboard site (Click on the "course web site" button on the left) or go to:

http://webcampus3.stthomas.edu/tahickson/sedstrat/

Then go to the "Links supporting the course projects" link.

Project goal

To answer the basic question: "How were the DeGray spillway units deposited and in what type of environment did they form?"

How will we attack the problem?

Over the next few weeks we will work in and out of class to address the material you'll need to know to interpret these rocks. First, we will spend some time thinking about the meaning of different lithologies (rock types) found in the JFG. You'll look at some actual rocks from the JFG, both in hand specimen and in thin section. Second, we will focus on the general style of deposition of some of the JFG units, mainly looking at the nature of bedding and contacts. Finally, we'll dig into the issue of grain size, how we measure it, how we analyze it, how we plot it, how we interpret it.

I will assign some specific readings to help address these issues. More likely, I will ask *you* to delve into your textbook and other sources on your own to answer some of the questions that will certainly arise.

Project deliverables

- A four to five page project write-up that follows the format outlined below
- A separate analysis of grain size for selected beds from the outcrop that accompanies the write-up

Project milestones

- September 12: Submit description of rock types of the JFG by 5:00 p.m.
- September 18: Submit description of bedding styles (1 to 2 paragraphs) at beginning of class
- September __: Graph *du jour* due (plot of sieved grain size data from St. Peter sandstone)
- September __: Graph *du jour* due (plot of grain size trend data from JFG)
- September __: Analysis of JFG grain size data
- September 30: Final write-up due.

Project write-up

- 12-point, Times font, double-spaced, 1.25" right and left margins and 1" top and bottom margins.
- Four to five pages, text only, not including figures.
- If used, figures should be attached to the end of the text, with sequential figure numbers and appropriately descriptive captions. Figures should be labeled "Figure 1," "Figure 2," etc. and all figures should have captions.
- The write-up should follow the outline below:
    - Introduction to the Jackfork Group and a statement of the research problem
    - Observations and description of JFG units
        - Lithology
        - Bedding
        - Grain size
    - Interpretation of JFG units
        - Individual interpretation of the significance of differences in lithology, bedding, and grain size trends
        - Integrated interpretation of lithology, bedding, and grain size trends