Abstract
Paleontology is one of the most integrative of the geosciences, and relies on heavily on biology and chemistry during modern research endeavors. The Boudreaux Bend Project is no exception. New undergraduate research fellows working on the project spend on average six months learning the basics before progressing to data generation. To date, we have learned how to geological field work and to collect column samples of sediment from stream bank exposures. In the process we learned a lot about stream and terrace geomorphology. From these column samples, we learned how to extract pollen, spores, and the remains of other organisms. This is accomplished via both chemical and mechanical processes that are very exacting – the risk of contamination of your sample, and having to start the process over is very high. We have learned how to analyze the material we have obtained, from scanning slides and making photographs, to identifying what we see, and beginning to make quantitative accounts. Seven months into our tenure as undergraduate research fellows, we are beginning to take an active role in reading the history of our region from the sediments under our feet. This poster provides an overview of the techniques we have learned.

Sampling in Creeks
A lot of the field work for this project involved sampling in creeks. When we sample, the first thing we do is look at the deposit and think about what we need to know (upper left). Then we measure its thickness with a Jacob's staff (lower left) and describe it in our field notebooks. If we are collecting samples for paleobotany in addition to palynology, we take very wide column samples, usually with a sterilized shovel (upper right). Site 3 in the banks of the North Fork of Triplett Creek is one of the many places where we completed this type of sampling.

Sampling Banks of Abandoned Meanders
In some locations, we were able to sample the banks of abandoned meanders. These banks ranged from very short, (a few 10's of decimeters) to well over two meters tall. Here, because we were only taking samples for sedimentology and palynology, we dug back into the sediment exposure about 2 decimeters, then took a 5-cm wide, 5 cm deep column sample through the entire exposure. Samples were then described in the lab This type of sampling was used in the exposures behind Eagle Lake.

Processing Samples in the Laboratory
From late November through late January, we spent a lot of time in the lab helping to process samples. All of the samples were first crushed, then shaken overnight in Liquinox. The Liquinox and suspended clays were to be washed out through many, many rounds of short-centrifugation. We then treated the samples with an enzymatic solution (O'Keefe and Wymer, in press) overnight, then rinsed out the enzymes through more centrifugation. Next we washed the samples through 212-micrometer mesh sieves and condensed the fine fraction into 15-ml centrifuge tubes. We isolated the pollen, spores, and diatoms by floating them in LST® at a specific gravity of 2.0 and pipetting off the float fraction. This fraction was stained with Safranin-O, then mounted on microscope slides for examination.

Learning to Identify and Count Palynomorphs
We spent a LOT of time sitting at the microscope learning to tell palynomorphs (C-G) from charcoal (A&B) and rock fragments. It took even longer to begin to be able to identify what we were seeing. C is a megaspore, D is Black Gum pollen, E is Oak pollen, F is Coneflower pollen, G is a fungal spore from a leaf mold, and H is a cluster of Glomus sp. spores from a mycorrhizal fungus. We have just begun learning how to count palynomorphs after seven months as URF's.

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