**ERSC 4419/5419 Geomorphology**

**Exercise 1:** Geomorphology and place

**Location:** SCLB 165 computer classroom

**Equipment:** Computer running Google Earth software

**Reading/Reference**: Chapter 1 in *Process Geomorphology*, 5th ed. By Kochel, Ritter, and Miller

**Overview:**

Geology has impacted human history and society in ways both subtle and direct. In many cases, geomorphology plays a significant role in where people have settled and built up their civilizations. Believe it or not, this is true for Little Rock, Arkansas. An obvious relationship between location and geomorphology is that the city was founded on the banks of the Arkansas River because it provided a reliable source of water and transportation. But why was the city established exactly where it is on the river? Why not 20 miles downstream? or 50 miles upstream? and what is the story behind the name “Little Rock”? As it turns out, the “Little Rock” is the first place where solid rock intersects the Arkansas River as one navigates up-river (like the early explorers/traders/settlers did). This was a very easy-to-find waypoint for travelers in the days of verbal navigation. The **goals** of this lab are 1) to help you to think about how geology, geologic processes and time create the landscapes that we see, and 2) to help you think about the relationship between humans and geomorphology and 3) to make sure you know how to use Google Earth.

**Preparation:**

I chose the region surrounding Little Rock, AR as an example of what I expect for this lab because we live here and because it contains a wide diversity of landforms. These landforms, like all others on Earth, reflect the interplay between geological processes, the underlying bedrock, and time. Download the Little\_Rock.kmz file from Blackboard and double click on it to open in Google Earth. We will navigate through each “Places” entry in Google Earth and discuss the features that I included for the example.

The websites below explain how to add content to Google Earth and how to create kml and kmz files.

<http://serc.carleton.edu/sp/library/google_earth/UserGuide.html>

<https://support.google.com/earth/answer/148176?topic=2376018&parent=2376017&rd=1>

The following websites are where I found for background information on Physiography, Geology, and History of Arkansas.

<http://tapestry.usgs.gov/Default.html>

<http://www.geology.ar.gov/home/index.htm>

<http://encyclopediaofarkansas.net/>

**Procedure:**

In this assignment, I want you to learn as much as possible about the nature of the landscape within 50 miles of a place that is named based on its geomorphology. Report on the landscape, its bedrock geology, the processes that have affected it and on the amount of time involved for it to reach its present configuration. Finally, relate the landscape to its history, specifically, how it got its name.

You should make sure that an explanation accompanies each overlay. Use placemarks, polygons and/or paths as appropriate for highlighting landscape features and including your text.

The product of your efforts will be a Google Earth kmz file to be turned in by sending it to me via email.

**You must include at least:**

One photo

One image overlay

One link to a website

Discussion of bedrock geology, geologic processes and time

Discussion of how your chosen place was named

**To turn in:** kmz file via Blackboard to Dr. McMillan

**DUE DATE:**