What do you need to know before we leave?

We will be immersed in geology from the moment we leave until the moment we return home. Your enjoyment and understanding of the wonders that we will see will be much enhanced by some preliminary preparation. If you don't understand the following, borrow a basic textbook or hit Google, and learn it before we leave!

Important **minerals** that make up rocks: quartz, feldspar, mica, olivine, calcite, gypsum and clay
Igneous rocks: Granite, rhyolite, andesite, basalt, and gabbro
Sedimentary rocks: Conglomerate, sandstone, shale, and limestone
Metamorphic rocks: Slate, schist, gneiss, marble and quartzite
Plate Tectonics: Divergent, convergent and transform boundaries, and hot spots
Volcanoes: Basalt plateaus, shields, composite cones, plug domes

Geologic Time Scale (This must be memorized before dinner on the first night of the trip)

Eras (give yrs) (within Phanerozoic Eon)	Periods	Epochs
Cenozoic	Quaternary	Holocene – 12,000 to present
		Pleistocene
	2 my Tertiary	Pliocene
		Miocene
		Oligocene
		Eocene
		Paleocene
Mesozoic	Cretaceous	65 my
	Jurassic	
	Triassic	245 my
Paleozoic	Permian	
	Pennsylvanian	
	Mississippian	
	Devonian	
	Silurian	
	Ordovician	
	Cambrian	545 my
Proterozoic Eon 2,500 – 545 my Archean Eon Hadean Eon		

Preparing Your Presentation

The secret of a good presentation is not charisma or a snappy sense of humor. The secret is in being prepared. The first step is to confer with me about your topic, for I may have most of the resources that you will need, and I can offer advice about the best way to proceed.

Gather your research material, and decide what elements are the most important to be communicated. It might be helpful to put the facts on index cards, so they can be arranged and ordered in the way that best communicates the information. You don't have to cover EVERYTHING!

A presentation might have the following order:

Write an outline of your talk on the chalkboard, or have it ready on a poster board or handout.

1. Geography and Overview:
Where are we? What is the name of the park or feature? Elevations, interesting non-geological information (plants, animals, history, etc.). Give a brief introduction to the geology ("Say what you are about to say"). What makes the place unique? Is there a geological process or feature we haven't been able to see yet?

2. Geologic History:
Place your area in the regional context. What are the oldest and youngest rocks, and which ones are in-between? Are any important layers missing? Any formations that we haven't seen up to this point should be given special attention. Give an outline of the geological events leading up to the present day scenery.

3. Geologic Processes:
Some parks and monuments have been established for their unique erosional or tectonic features (volcanic eruptions, glaciers, etc.). Explain how these processes are acting in the present day. Use illustrations whenever possible. If you get them to me at least a week ahead of our departure, I can include illustrations in the trip guidebook. You may also prepare posters, or use the chalkboard.

4. Summary
Say what you just said as concisely as possible. Ask if there are any questions.

Don't Panic! You will survive!!