

Time Beyond Imagining...

Colorado Plateau

Field Studies

June 2-17, 2018



Welcome to the 2017 geology field studies expedition! The Colorado Plateau is one of the most spectacular regions on planet Earth, and it tells a story encompassing more than half of Earth's history. More than two dozen parks and monuments have been established on the plateau, and we will be visiting most of them! We are pleased that you have chosen to participate in this year's expedition, and we are looking forward to traveling together with you! Please read through the following information carefully and meet the appropriate deadlines in a timely fashion.

Contact Information:

- **Instructor:** Garry Hayes, Science Community Center 336, Phone: (209) 575-6294
- http://hayesg.faculty.mjc.edu/Geology_191_Colorado_Plateau.html and <https://www.facebook.com/groups/1981562695397646/>
- E-mail: hayesg@mjc.edu

Academics: Geology 191 is a 3 unit academic course (as well as a dyad with Anthropology 191, and you will be responsible for several things to receive a passing grade:

- Submitting complete lecture notes and worksheet following the trip
- Passing occasional quizzes during the trip
- Presentation of at least one topic during the trip

The presentations will be chosen from the list provided in this announcement. This assignment is made for the purpose of giving you a personal "ownership" of at least one of the parks or localities that we will see on the trip, and affording you the experience of preparing and giving presentations of scientific topics. Most people worry about public presentations, but it will quickly become clear that they are not threatening in our small group setting. Everyone on the trip will be doing one, and so all of us will be supportive of your efforts, just like you will be supporting the others. These presentations should be ready prior to the trip: references, resources, diagrams and duplicating are available through my office. I will be glad to assist you in any way I can.

Community and Collegiality: A journey of this nature can be a challenge. It is a long trip, and sometimes tempers may rise, or feelings get hurt. Please maintain some perspective at all times and think of the morale of the group before you complain or argue about anything. If problems or personality conflicts arise, come and talk to me and we will resolve them. **Alcohol and drugs** are most disruptive and absolutely **will not be tolerated**.

I always look forward to getting back on the plateau, and I find inspiration and fulfillment from the experience. I trust it will be so for you as well. Take advantage of all that this land has to offer in the way of insight, understanding, and inspiration. It is truly a trip of a lifetime!

Fees: This is a three-unit course (6 units with the dyad), so a per-unit fee applies. There is also a trip fee of \$850 which covers transportation, food, camp fees, entry fees and teaching materials. It is paid in the MJC Business Office in the Student Center on East Campus.

Facilities and Conditions: This can be a rugged trip. We are camping for two weeks in a variety of settings, ranging from cushy campgrounds with showers and laundry, to barren primitive sites with no facilities (but with great views!). There will be a great deal of driving, but the vans are air-conditioned and are comfortable (within limits). Weather conditions will range from blazing hot (if we hit a heat wave, temperatures could exceed 105°) to rather cool if not downright cold (some camps will be at more than 8,000 feet). Thunderstorms will be a definite possibility at times. Please be prepared to operate comfortably under any of the above conditions.

Comestibles: The fee for the trip includes all your food needs, breakfast, lunch and dinners. We have volunteers who are organizing and conducting the food preparation, and all participants will be expected to contribute in the way of cooking, cleaning and packing. A KP list will be provided when we leave on the trip; it is expected that you will be there at your scheduled time. Please let us know if you have any serious food allergies.

Timetable

Monday, April 16: Organizational Meeting, 6:30 in Science Community Center 326. **Purpose:** Orientation, selection of topics, review of equipment needs, and preparation for fundraising event.

TBA at April 16 Meeting: BBQ and gathering, BYO meat and one salad or dessert to share, I'll provide drinks and charcoal. Place to be announced. **Purpose:** final arrangements, assistance with logistics, social introductions, and some fun.

Thursday, May 31 or Friday, June 1: Final shopping and equipment preparation/packing. Bring gear between 2 and 4 PM **Friday** to school for loading in vans (to save time on Saturday). We will be meeting and packing the vans outside the Science Community Center on west campus.

Saturday, June 2, 6:30 AM: Leave from Science Community Center. **Make arrangements to leave vehicles at home**

Sunday, June 17: Arrive home at MJC approximately 6:00 PM

Tentative Itinerary (Subject to change)

Saturday, June 2:

Leave MJC at 6:30 AM
Stops: Rainbow Basin
Boron Open Pit Mine
Camp: Black Canyon/Hole in the Wall, Mojave National Preserve
Facilities: water, picnic shelter, vault toilets
Conditions: hot and dry
Emergency phone: Mojave National Preserve, (760) 252-6100

Sunday, June 3: Mojave National Preserve to Zion National Park

Stops: Frenchman Mountain, Las Vegas
Valley of Fire State Park
Lake Mead National Recreational Area
Camp: Zion National Park, Group Campground
Facilities: water, flush toilets
Conditions: hot (cool in the Narrows)
Emergency phone: Zion National Park (435) 772-3256

Monday, June 4: Zion to Grand Canyon National Park, North Rim

Stops: Angels Landing or Virgin Narrows hikes,
Zion Arch Overlook
Coral Pink Sand Dunes State Park
Grand Canyon, North Rim
Camp: North Rim Group Campground, Grand Canyon National Park
Facilities: Water, flush toilets, showers, laundry, grocery
Conditions: Cool and comfortable (7,500 feet)
Emergency phone: Grand Canyon National Park, (520) 638-7888

Tuesday, June 5: Grand Canyon National Park

Stops: Hike, Kaibab or Widforss Trail
Cape Royale
Point Imperial
Camp and facilities: same as above

Wednesday, June 6: Grand Canyon to Navajo National Monument

Stops: Colorado River, Glen Canyon Dam
Antelope Canyon
Horseshoe Bend
Navajo Indian Reservation
Camp: Navajo National Monument
Facilities: Water, vault toilets
Conditions: Warm and dry
Emergency phone: Navajo National Monument (928) 672-2700

Thursday, June 7: Navajo National Monument to Cedar Mesa

Stops: Black Mesa Strip Mine
Navajo National Monument
Agathlas Needle
Monument Valley
Valley of the Gods
Goosenecks of the San Juan
Camp: Near Muley Point Overlook, Cedar Mesa
Facilities: absolutely none, but an incredible view...
Conditions: moderate, thunderstorms a possibility
Emergency phone: San Juan County Sheriff, Blanding or Monticello, Utah

Friday, June 8: Cedar Mesa to Mesa Verde National Park

Stops: Natural Bridges National Monument
Anasazi Ruins and Hovenweep National Monument
Mesa Verde National Park
Camp: Morefield Campground, Mesa Verde National Park
Facilities: Water, flush toilets, showers, laundry, grocery
Conditions: Moderate to cool
Emergency phone: Mesa Verde National Park (970) 529-4475 or (970) 533-7731

Saturday, June 9: Exploration of Mesa Verde National Park

Stops: Mesa Verde National Park loops
Spruce Tree House
Camp: Morefield Campground, Mesa Verde National Park
Facilities: Water, flush toilets, showers, laundry, grocery
Conditions: Moderate to cool
Emergency phone: Mesa Verde National Park (970) 529-4475 or (970) 533-7731

Sunday, June 10: Mesa Verde to Ouray, Colorado

Stops: Animas River, Durango
Mesa Verde Cliff Dwellings, Spruce Tree House
Silverton Caldera
Bear Creek Glacier Deposits
Camp: Ouray KOA
Facilities: water, flush toilets, showers
Conditions: moderate to cool
Emergency phone: (970) 325-4736

Monday, June 11: Ouray to Arches National Park

Stops: Black Canyon of the Gunnison National Monument
Colorado National Monument
Colorado River Canyon

Camp: Arches National Park Group Campground

Facilities: water, flush toilets

Conditions: moderate to warm, may be windy

Emergency phone: Arches National Park, (435) 259-8161

Tuesday, June 12: Exploration of Canyonlands and Arches National Parks

Stops: Upheaval Dome
Arches National Park
Island in the Sky, Canyonlands
Delicate Arch Sunset Hike

Camp: Arches National Park Group Campground (see above)

Wednesday, June 13: Arches to Goblin Valley State Park

Stops: Green River Dinosaur Hunt
Cold Water Geyser
Goblin Valley

Camp: Goblin Valley State Park

Facilities: water, flush toilets, showers

Conditions: hot

Emergency phone: Goblin Valley State Park (435) 564-3633

Thursday, June 14: Goblin Valley to Escalante Petrified Forest State Park, Utah

Stops: Capitol Reef National Park
Uranium Mines
Anasazi State Park, Boulder
Escalante Petrified Forest

Camp: Escalante State Park Group Campground

Facilities: Water, flush toilets, showers, swimming

Conditions: warm to hot

Emergency phone: Escalante State Park (435) 826-4466

Friday, June 15: Escalante to Great Basin National Park, NV

Stops: Bryce Canyon National Park
Camp: Great Basin National Park Grey Cliffs Group Site
Facilities: Water, vault toilets

Conditions: Relatively cool

Emergency phone: Great Basin National Park, (775) 234-7331

Saturday, June 16: Great Basin National Park to Berlin/Ichthyosaur State Park

Stops: Great Basin National Park and Lehmann Caves
Berlin-Ichthyosaur State Park

Camp: Berlin-Ichthyosaur State Park

Facilities: water, vault toilets

Conditions: warm

Emergency phone: Berlin/Ichthyosaur State Park (775) 964-2440

Sunday, June 17: Berlin to Home

Stops: Ichthyosaur quarry tour
Mono Lake and Yosemite National Park

Arrive at MJC at approximately 6:00PM

Lecture Topics:

Rank three or so of the topics below that you are interested in presenting on the trip. We will select topics at the first organizational meeting on April 16. You will be responsible for at least one presentation. Preparations should be complete prior to leaving on the trip. Available resources in the geology department include duplicating, portable chalkboard, and poster paper. A list of library references is available in my office, as well as a folder of information on each area listed below.

- ___ Introduction to the Colorado Plateau
- ___ Geology of Zion National Park
- GH Precambrian and Paleozoic History of the Grand Canyon
- GH Mesozoic and Cenozoic History of the Grand Canyon
- ___ Glen Canyon Dam and the Colorado River
- ___ Antelope Canyon and erosion of slot canyons
- ___ Navajo National Monument
- ___ Black Mesa Coal and Strip Mining
- ___ Raplee Anticline and the Valley of the Gods
- ___ Monument Valley and the Monument Upwarp
- ___ Goosenecks of the San Juan River
- ___ Natural Bridges National Monument
- ___ Geology of Mesa Verde National Park
- ___ Silverton Caldera and the San Juan Mountains
- ___ Black Canyon of the Gunnison and the Ancestral Rockies
- ___ Colorado National Monument
- ___ Arches National Park
- ___ Laccoliths (La Sal, Abajo and Sleeping Ute Mountains)
- ___ Dead Horse Point and Canyonlands National Park
- GH Paradox Basin and Paleozoic Summary
- ___ Morrison Formation and the Dinosaurs
- ___ San Rafael Swell and Goblin Valley State Park
- ___ Capitol Reef National Park and Uranium Developments
- ___ Escalante-Grand Staircase National Monument
- ___ Geology of Bryce Canyon National Park
- GH Mesozoic Summary
- ___ Basin and Range Province
- ___ Great Basin National Park and Cavern Development
- ___ Berlin-Ichthyosaur State Park
- ___ Mono Lake, Pleistocene Ice Ages, Pluvial Lakes
- ___ Yosemite National Park and the Mesozoic Convergent Margin

If you have some special expertise in some other discipline that would make for a good project, please offer your suggestions:

_____.

_____.

Name: _____.

Field Trip Emergency Information:

Name: _____.

Address: _____ Zip: _____.

Phone (home): _____ work: _____ e-mail _____.

Whom do we notify in case of emergency?: _____.

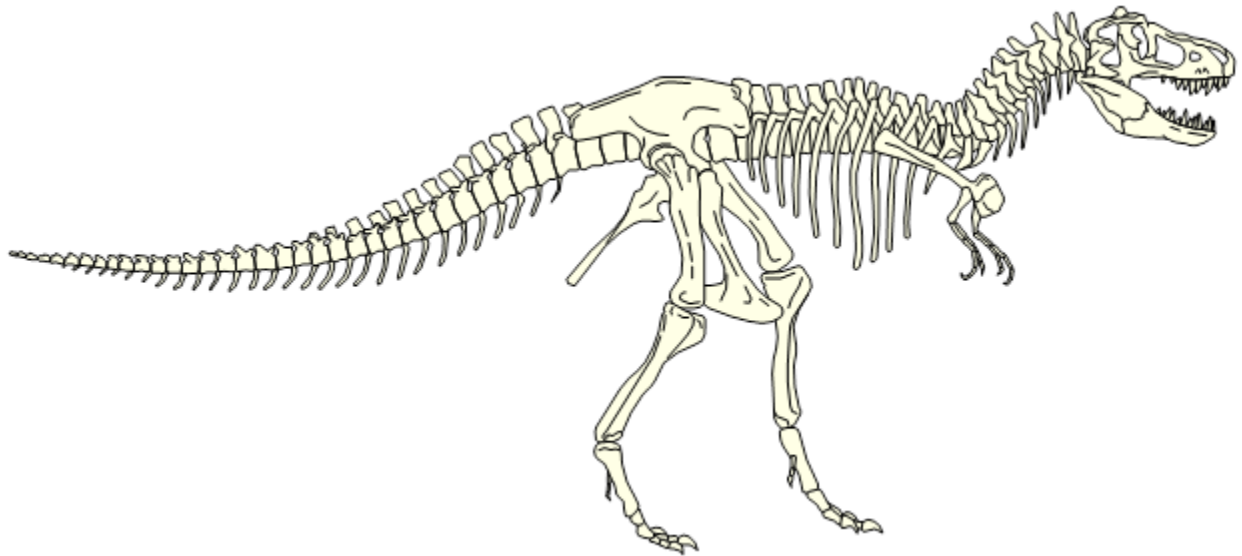
_____.

Medical Allergies: _____.

Medications: (those you are taking, and those to avoid) _____.

Date of Last Tetanus Shot: _____.

Special Medical Problems: _____.



Suggested Equipment List

Sleeping Bag
Ensolite Pad and/or cot
Ground Cloth
Tent (small, compact, may share with a friend)
Day Pack
Small folding Beach Chair
Duffle Bag or Suitcase
Non-disposable Water Container(s); 64 oz. total
Pocket Knife
Flashlight with extra batteries and bulb
Notebook
Sketch Pad
Writing and Drawing utensils
Towel and Washcloth
Toilet Paper and Kleenex
Poncho
Sunscreen-High SPF (the sun out there is much more intense)
Bug Repellent
Small Ice Chest or Insulated Bag
Personal Items: soap, shampoo, lip balm, toothbrush and paste, deodorant, etc.
Mess Kit: plate, bowl, utensils, unbreakable mug/Sierra cup

Clothing 4-5 day supply

Short-sleeve and Sleeveless T-shirts
Shorts
Long-Sleeved Shirts
Long Pants
Socks (extras for hiking too)
Underwear
Sturdy Hiking Boots or Athletic Shoes
Comfortable "in camp" Shoes/Sandals
Jacket
Swim suit

Spending Money (for showers, laundry, snacks, souvenirs, books, etc.)
Camera and spare batteries, flash drives
Rock hammer (optional)

