

EES Wyoming-Idaho Spring Field Course Trip Report

In May, 2019, 24 EES students and three wizened professors flew to Salt Lake City for a 12-day field course in Utah, Idaho and Wyoming (with a brief foray into Montana). After arriving late at night and discovering that Dr D had forgotten his driver's license, then found it and lost it, then found it, then lost it and then found it again, the group set off on a clockwise route with 3 days of thunderstorms and rain in the forecast. Fortunately, a quick stop at the Great Salt Lake (Antelope Island) went smoothly and we were able to see the pretty lake amidst swarms of flies hovering over microbial mats, with views of the distant Wasatch Range and its impressive faulted mountain front. We then drove north into Idaho and turned west to the City of Rocks in the southern Albion Range. We lucked out with the weather and had a marvelous hike in the heavily jointed and weathered granite landscape leaving the students in happy spirits because we had truly entered a very scenic part of the wild west. We arrived late in Twin Falls, but still had time to peek into the Snake River Canyon and watch base jumpers plunging past flood basalt cliffs.

The evening began with a group meal at Idaho Joes with burgers and pie slices for most. A medical incident left some people poorly rested for the next day, but after a brief stop at dramatic Shoshone Falls, we raced up to Craters of the Moon where again, we somehow avoided the rain, (although we watched a tornado) and saw all the main sites of the amazingly raw volcanic landscape of the northern Snake River Plain. Cinder and spatter cones, vast pahoehoe lavas, and a wide variety of landscapes and volcanic products provided a crash course in fissure eruption and flood basalt volcanology. We left time to explore the lava plains and lava tubes and felt as if we had gone back in time to a primeval Earth.

EES crowd maintains positive spirit, despite storm clouds above and volcanic unrest below at Craters of the Moon NM, ID



The following day was spent in the Lost River Range where we explored the 1983 Borah Peak earthquake zone with its interesting multi-scarp ground rupture. During the morning, Borah Peak itself emerged from the clouds displaying beautiful fresh snow cover, enticing us to explore the range further. So, we spent the afternoon at the range's northern end bushwhacking into a high valley with much late spring snow to wade through. We reached the tree line and enjoyed discovering a wide variety of coral and marine invertebrate fossils in the Mississippian carbonate talus blocks. The hike took us to 9000' elevation and was initially challenging for many students, but all persevered and ultimately everybody felt a strong sense of accomplishment. The views of the folded Paleozoic strata at the head of the valley and in the distant mountains was a reminder of the impressive crustal forces that produced the Sevier fold-and-thrust belt. A second night was spent in Mackay, ID, one of our favorite towns on the trip, which included a dinner feast at Amy Lou's.



1983 Borah Peak complex surface rupture (drone photo by Drew Hyatt)



High in the northern
Lost River Range, ID



Borah Peak, Lost
River Range, ID

Mesa Falls, ID



We crossed the Snake River Plain the next day en route to Yellowstone. Highlights of the day included hiking up North Menan Butte – a hydro-volcano tuff cone, viewing Mesa Falls in the Island Park Caldera, and visiting the Madison Landslide and learning about the devastating co-seismic event that buried a campground and created “Quake Lake” in 1959. We arrived late at the KOA in West Yellowstone where we would spend 3 nights in our rustic cabins made cozier by the soporific sounds of three snoring leaders.

At Grand Prismatic Spring, Yellowstone NP



We spent 2 full days in Yellowstone - in sunshine - enthralled by the geothermal sights (and sounds and smells), rich scenery, diverse landscapes, amazing wildlife and the sheer vastness of the park. Highlights included hiking through the Norris Geyser Basin, and Old Faithful-Grand Prismatic Spring-West Thumb geothermal areas, visiting the awesome Grand Canyon of the Yellowstone, and wildlife viewing in the Lamar Valley. We were treated to bison traffic jams, a distant view of a mother grizzly with two cubs, a black bear with cubs, numerous pronghorn, elk, bighorn sheep and a hungry coyote. Old Faithful performed on cue and the mud pots burped and blipped as expected. We left Yellowstone satisfied that we had observed Earth's largest concentration of volcanic and hydrothermal indigestion.



Group discussion near Old Faithful, Yellowstone NP



Grizzly mom with cubs, Lamar Valley, Yellowstone , NP

Then we headed south to Grand Teton National Park. We stopped along Jackson Lake for a superb lunch picnic and panoramic view of the range – again in glorious sunshine - and then drove to the top of Signal Mtn where we had a grandstand view of the glacial landscapes in the northern Teton Valley and the regionally tilted hanging wall valley floor. We arrived later at Teton Village for an afternoon ride up the tram to Rendezvous Peak (elevation 10,500'). There was too much snow for a summit hike, and it became cold and windy, but waffles and cocoa were on offer in the summit hut and the more adventurous huddled on the summit and posed for “hero selfies”. The wide-ranging views of the west-dipping Paleozoic strata that unconformably overlie the tilted Precambrian basement block were impressive. We woke early the next day for a relaxing and blissful float trip down the Snake River through the terraced floodplain. The weather was cool, the scenery gorgeous and we saw bald eagles and a mother moose with 2 calves. In the afternoon, we raced over to Jenny Lake and crossed it by boat and then hiked up Cascade Canyon. It was a bit rushed, but we all managed to reach the hanging valley floor and most scrambled up the boulder talus to elevated outcrops that afforded glorious views of surrounding peaks and the Teton Valley, including Jenny Lake and its bounding terminal moraine. We also examined multiply intruded, metamorphosed and deformed 2.0 Ga Proterozoic basement gneisses which most students soon realized were the oldest rocks they had ever stood on. Late in the day, we zipped over to the Gros Ventre landslide and were awed by the huge scale of the landslide deposit and the large collapse source area clearly visible on the distant mountainside. That evening, we enjoyed dinner and some down time strolling around the very touristy but pleasant town of Jackson. Many students took the opportunity to shop for T-shirts, sweatshirts and various treats for those back home, while a cadre of EES hipsters headed to the cowboy saloon to dazzle the locals with their latest dance moves.



Bryan discussing
Snake River terraces,
Grand Teton NP

Float trip, Grand Teton NP



Three Stooges on Rendezvous Peak, Grand Teton NP



Next, we drove SE to the Wind River Range where we were awed by glacial Lake Fremont and its bordering moraines before heading up Skyline Drive. Snow blocked the road to the highest accessible areas, but we were able to gain views of some of the high summits and examine Precambrian basement rocks that are exposed throughout the range interior. We then stopped at the Museum of the Mountain Man, which all agreed was superb and much better than expected.



We learned a great deal about the Native American heritage and European exploration of the region, including the rendezvous points for the early fur trappers. In the afternoon, we drove into the Pinedale Anticline gas field and examined the regional setting of one of the largest fracking operations and natural gas producing regions in America. We then drove south through rain and the high sagebrush desert of the Green River Basin arriving that evening in Kemmerer.

The next morning we headed straight to the American Quarry in the hills NW of Kemmerer where we split open laminated lacustrine carbonates to find flattened fish, bony fish and then believe it or not, more dead fish. All students were successful in finding beautiful fossils to bring home. A few students found very complete and valuable specimens worthy of museum display. After lunch, we arrived at Fossil Butte National Monument and the displays there revealed what other paleontological wonders can be found in the Green River Formation. A nice presentation and Q&A from the park ranger enhanced our learning of this amazing Eocene lagerstätte. That evening, the students had their final examination and then we all crossed the street to feast and sip refreshments at the El Jaliciense Mexican restaurant, and celebrate our wonderful trip, newfound friendships and fond memories.

We arrived at Salt Lake City the next day for our flight home, arriving back in Hartford in one piece and pleased with all that we had seen, learned and accomplished. The trip was marvelous overall, and one of the best I have ever had the pleasure of leading/co-leading. All students and faculty got along well, the weather held throughout, the geology, scenery and wildlife exceeded our expectations, and we achieved all of our educational objectives whilst enjoying each other's company and returning home safe and sound.



Baby moose, Grand Teton NP, WY



High above Fremont Lake, Wind River Range, WY



EES Majors Joey and Kayla show off their beautiful fish fossils,



(Thanks to Drew Hyatt for most of the photos shown here!)