

## **Paleontology Field Study Program Information**

We will perform real world paleontology! Our study will focus on global climate change during the last 40 million years. We will look at fossil evidence for one of the most dramatic climate events in Earth history: the change from the Eocene "hothouse" to the Oligocene "ice house." Based at OMSI's Hancock Field Station, we will be exploring the fossils of the world-famous John Day Fossil Beds National Monument. Learn why the monument is fast becoming a testing ground for different theories of evolutionary processes. Participants will gain an understanding of the regional geology, fossil animals, plants and soils of Central Oregon from the framework of climactic change, evolution and geologic process. Students will be involved in field excavation, laboratory preparation and analysis, and the basics of field geology including stratigraphy and mapping. This is a great introduction to the longer high school Paleontology Research Team.

The campers will take an overnight excursion to the Thomas Condon Paleontology Center at the John Day Fossil Beds National Monument near Dayville, exploring new landscapes and camping out at a nearby campground.

### **Course Syllabus**

#### **OBJECTIVES: Academic and outdoors training goals**

- ◆ To gain an understanding of field paleontology and Oregon geology
- ◆ To realize the importance of careful scientific study of fossil locals and field techniques
- ◆ To gain an understanding of the process that field paleontologists use today
- ◆ To determine changes in paleo-climates using information from fossilized leaves and mammals
- ◆ To gain a geologic perspective of the John Day River Valley

#### **ACTIVITIES: Hands on learning in the field**

- ◆ Assist the Bureau of Land Management and National Park Service in on-going vertebrate paleontology research projects in several different locations
- ◆ Explore and investigate several Central Oregon geologic formations and fossil locales
- ◆ Safely use lapidary equipment
- ◆ Identify minerals, gain familiarity of crystal structure, and in-field identification techniques
- ◆ Collect and identify leaf fossils
- ◆ Learn about the functional morphology of present day omnivores, carnivores, herbivores and compare to those in the fossil record
- ◆ Investigate fluvial geomorphology including river dynamics, erosion, and depositional environments

#### **SCIENTIFIC CONCEPTS: Scientific Principles to be introduced**

- ◆ Oregon's geologic history -- concepts of stratigraphy, formations, rock forming processes
- ◆ Plant adaptations throughout time and their implications for past climate changes
- ◆ Introduction to anatomy, present day functional anatomy and how that will aid us in understanding extinct mammals
- ◆ Proper use of field notes, aerial photography, data collection, specimen handling, cyclic prospecting, data analysis, and scientific procedure

## **SAMPLE DAILY SCHEDULE\*** **Paleontology Field Study**

6:30 a.m.	Optional Morning Walk
7:00 a.m.	General camp wake-up
7:30 a.m.	Breakfast
9:00 a.m.	Field activities (Lunch included)
2:00 p.m.	Rest hour
3:15 p.m.	Snack
3:30 p.m.	Interest groups
5:00 p.m.	Recreation and free time
6:00 p.m.	Dinner
7:15 p.m.	Evening activity
8:30 p.m.	Campfire
9:15 p.m.	Return to cabins, prepare for bed
9:30 p.m.	Lights out

**\*ALL SCHEDULES ARE SUBJECT TO CHANGE**

Programs that are partly or entirely field-based will follow a unique schedule each day, depending on the activities planned. Drive times between field sites and campgrounds will include stops for short hikes and games, meals, and bathroom breaks.

### **TECHNOLOGY AND COMMUNICATION**

Cell phones are not allowed on any OMSI Science Camp program. Cell phones are too easily lost or damaged. Campers have an excellent support system at camp including their fellow campers, the counselors, the instructional staff, and the lead staff. We will ensure that any necessary communication between parents/guardians and campers can take place through the main phone at each site. Instructional staff carry cell phones during transportation and on off-site programs for emergency purposes only. An important part of the camp experience is for each camper to gain independence, develop greater resilience, and enjoy the unique opportunities offered by OMSI Science Camps without technological distractions. We are grateful for the trust parents and guardians put in our staff to care for each camper, and we appreciate the time taken in discussing this important issue with your camper before his or her program begins.

Digital cameras are allowed, but remember that, at camp, things can easily be lost or damaged. We recommend single use cameras or film cameras. Please keep in mind cell phones with cameras will not be allowed.

For the safety of your child and OMSI Science Camps staff, we strongly discourage our staff from having contact with your child after camp since we cannot supervise it. Making new friends is one of many positive outcomes of OMSI Science Camps programs, and campers who want to stay in touch with each other may exchange phone numbers, addresses, or e-mails. Please understand that any communication between your child and another camper or a staff member after the camp session is over is the responsibility of the camper's parent or guardian to oversee.

If your child would like to contact a staff member, then email a letter to: [hancock@omsi.edu](mailto:hancock@omsi.edu).

### Equipment List

Please note that this trip includes a camp-out, students should bring a warm sleeping bag and sleeping pad of their own, and a two or more person tent if they have one.

- SLEEPING GEAR:        \_\_\_ sleeping bag  
                             \_\_\_ sleeping pad  
                             \_\_\_ tent  
                             \_\_\_ pillow with pillowcase (optional)  
                             \_\_\_ sheet (optional)  
                             \_\_\_ pajamas
- FIELD EQUIPMENT:    \_\_\_ 2 water bottles (1 quart/liter each)  
                             \_\_\_ flashlight or headlamp  
                             \_\_\_ bound notebook, pencils, and pens  
                             \_\_\_ daypack with straps  
                             \_\_\_ two or more person tent  
                             \_\_\_ mess kit (plate, bowl, cup, fork, and spoon)  
                             \_\_\_ **sack lunch for the first day**
- CLOTHING:            \_\_\_ boots (sturdy, comfortable, well-fitting and broken in)  
                             \_\_\_ boot socks (3 pair minimum, 1 slick pair for blister protection)  
                             \_\_\_ 3 pairs long pants (1 jeans and 2 lightweight, light-colored)  
                             \_\_\_ 1 or 2 pairs of shorts  
                             \_\_\_ 3 shirts, 1 long-sleeved, 2 short-sleeved  
                             \_\_\_ adequate underwear  
                             \_\_\_ warm layers: hat, gloves, scarf, long-underwear etc.  
                             \_\_\_ jacket  
                             \_\_\_ rain gear (jacket w/hood & pants, or poncho)  
                             \_\_\_ bandannas or handkerchiefs  
                             \_\_\_ broad-brimmed or billed hat for sun protection  
                             \_\_\_ swimsuit  
                             \_\_\_ tennis shoes or sport sandals for camp
- PERSONAL GEAR:     \_\_\_ sunglasses  
                             \_\_\_ toiletries: soap and container, toothbrush/toothpaste, comb/brush  
                             \_\_\_ wash cloth and towel  
                             \_\_\_ sunscreen (SPF 15 or SPF 30)  
                             \_\_\_ lip balm with sunscreen  
                             \_\_\_ personal hygiene items

ALL CLOTHES AND EQUIPMENT SHOULD BE MARKED WITH THE PARTICIPANT'S FULL NAME. OMSI IS NOT RESPONSIBLE FOR LOST ITEMS.

**PLEASE DO NOT BRING SNACKS OR CANDY**

(rodents enjoy searching cabins for food).

**NO ELECTRICAL EQUIPMENT SHOULD BE BROUGHT (CELL PHONES, CD PLAYERS, RADIOS, BLOW DRYERS, COMPUTER GAMES, ETC.)**