

Activity Name: **PS-AAPG Field Trip #1: Malibu Beach**

Dates: **1 April 2019**

## To: Activity Participant

Congratulations on your opportunity to participate in this field activity! This letter outlines the technical objectives, logistics, field activities and associated health and safety issues and serves to inform you of potential hazards that need to be considered for your participation. It is important for you to evaluate these risks with regard to your own personal health and safety, request reasonable modifications (“accommodations”) to course delivery, and modify your participation or attendance accordingly. Ultimately, you are personally responsible for your safe and successful participation—your attitude and awareness is key!

### ACTIVITY OVERVIEW:

This field trip will examine a beautifully exposed ~750 meter-thick (~2500’) section of the Miocene Monterey/Modelo between Point Dume and Paradise Cove in Malibu Beach. Based on lithofacies associations, the Monterey section is divided into four members: the Dolomitic Phosphatic Shale Member, the Porcelanite and Shale Member, the Mixed Clastics Member and the Cherty Diatomite Member that show some similarity to Monterey members in the well studied distal basins (e.g., Santa Barbara, Santa Maria). The field trip will entail a single 2-mile hike from drop-off to pick-up locations.

### TECHNICAL OBJECTIVES:

- Participants will be able to recognize characteristic sedimentary rocks and lithofacies associations of the Monterey/Modelo Formation.
- Participants will understand the significance of synsedimentary and post-depositional sedimentary structures.
- Participants will recognize and be able to identify different mechanical behaviors of rocks based on lithology, cementation and bed thickness.
- Participants will understand the relationship between stratigraphy and depositional setting.

### ACTIVITIES:

- Field Lectures & Discussions
- Field Exercise
  - The field trip to examine the Monterey/Modelo formation in Malibu Beach and will consist of a single 2-mile-long beach walk from Paradise Cove Resort to Point Dume.
  - We will make stops in 8 locations for group observation and discussion.

### FIELD AREAS:

- **Terrain:**
  1. **Heights or Drop offs:** field area is mostly a relatively flat beach, but there will be a ~100’ stair climb at end of field trip to top of bluffs.
  2. **Exertion Level:** The field day consists of a single 2-mile beach walk with no elevation change, ended by a ~100’ climb up metal stairs with railings and an enclosed trail. Low to moderate exertion.
- **Environment:**
  1. **Temperature:** Daytime typically ranges from 60 to 75°F, and can be as cold as 50°F and hot as 95°F
  2. **Humidity:** typically dry - ranges from 50 to 80% relative humidity

3. **Wind:** 0 to 15 mph
  4. **Precipitation:** unlikely in April, but possible
  5. **Vegetation:** Field area is mostly on the beach with no vegetation. Coastal sage scrub on top of bluffs and locally at base of cliffs on beach. No poison oak or stinging plants known in field trip area.
- **Hazards, Prevention & Mitigation Measures:**

The following are the key hazards that might be encountered during this field activity, along with measures to prevent and mitigate injuries. We strongly urge you to follow these measures and others that are suggested during the field activity. Anyone acting in an unsafe manner will be counseled and if unsafe behavior continues, will be dismissed from the activity.

    1. **Ground Transportation** → collision → traumatic injury:
      - Wear seat belts at all times when vehicle is in motion
      - Do not distract the driver
      - Provide real-time feedback on driver's condition and behavior and vehicle condition
    2. **Roadside Activity** → collision → traumatic injury:
      - Stay off roadway while boarding or disembarking buses
      - Be aware of traffic and fellow participants
    3. **Uneven/slippery terrain** → slip and fall → traumatic injury:
      - Wear appropriate footwear and clothing
      - Pay attention to pathway for loose or slippery surfaces, especially on intertidal rocks
      - No running, jumping, climbing above other participants
    4. **Large surf/rogue waves** → knock-down → traumatic injury or drowning:
      - Never turn your back to the water when close to or within the swash zone.
      - Watch for rogue waves.
      - Do not unintentionally venture close or into the water to avoid getting wet or pulled in.
    5. **Rock fall** → injury to head and body → traumatic injury:
      - Stay back from vertical or steep cliffs.
      - Wear head protection if deemed necessary.
    6. **Hazardous Weather** (heat, sun, precipitation, lightning) → exposure → injury:
      - Drink sufficient water and liquids
      - Take appropriate measures for weather (pace yourself, wear hat and appropriate clothing)
      - Follow lightning avoidance protocol (Hear it— Clear it, See it—Flee it; 30-30 rule, etc.)
    7. **Long hikes with one point of significant elevation change** → overexertion → injury/illness:
      - Self assess your level of fitness relative to described exertion level of activity and modify your participation as appropriate
      - Pace yourself. If you become excessively fatigued or experience significant pain, STOP and notify trip leader.
      - Wear appropriate footwear and use hiking staff/trekking pole.
    8. **Illness** → exacerbation of existing condition/new illness → acute episode:
      - Read description of exertion level planned, consult your health-care provider if you have concerns, and decide upon appropriate level of participation.
      - Carry sufficient medications as needed. Discuss your condition with activity leader and how you want her/him to help you in case of emergency.
      - Prevent food-borne illness by washing your hands often and handle food properly.

## LOGISTICS

- **Starting Point:** Pyramid at California State University Long Beach at 7 AM, 1 April, 2019.
- **Transportation:** Chartered Bus, 1.5-2 hours each way
- **Ending Point:** Pyramid at California State University Long Beach at 4-5 PM, 1 April, 2019.
- **Personal Equipment:**
  - **Required:**
    - Hiking boots or shoes, sturdy, soles (Vibram or equivalent)**
    - Backpack for lunch, water and gear**
    - Head protection as needed

- **Recommended:**
  - Long trousers
  - Long-sleeve shirt
  - Wide-brimmed hat
  - Sun protection cream/spray
  - Gloves
  - Seasonal clothing (hat, gloves, jacket, etc.)

## **The OTHER 10 Essentials for Outdoor Survival—How to Stay Alive and Safe**

*Bohacs, K.M., 2008*

We are all familiar with the classic 10 Essentials for survival taught by scouts and outdoor groups: pocketknife, first-aid kit, extra clothing, rain gear, water bottle, flashlight, trail food, matches and fire starters, sun protection, and map and compass. Just as important are key attitudes and behaviors to go along with this gear. These address all the main causes and death, injury, and illness identified by decades of global experience and accident statistics\*. Making these essential behaviors part of your outdoor kit will go a long way towards getting you home—healthy and in one piece.

1. **Don't get killed**—it could ruin your whole day, along with everyone else's...
2. **Buckle up**—increase your odds of surviving a wreck... The most dangerous portion of any expedition is on the road—tens of thousands die every year in vehicle accidents.
3. **Slow down**—on the road, on the trail, in the heat, in the bar... give yourself additional time to recognize and respond to hazards.
4. **Drink up**—hydrate or die...
5. **Watch your step**—loose rocks, steep trails, ...
6. **Watch your back**—for traffic, fauna & flora, companions, bad guys...
7. **Wash/Watch your hands**—avoid illness, food-related issues, as well as where you put them...
8. **Keep an eye to the sky**—lightning, flash floods, wind, heat/cold
9. **Wear the right stuff**—PPE, footwear, bug juice, hat, sunscreen—live longer...
10. **Take care of your feet**—and they'll take care of you!

\* Royal Geographical Society, American Alpine Club, U.S. National Weather Service, ExxonMobil Field Safety program, U.S. National Safety Council.