Recommended Personal Protective Equipment (PPE) and Exposure Follow-Up Procedures for Field Research Activities (Southern California / Wildland Environments)

- Field research activities conducted in Southern California and wildland environments may involve exposure to biological, environmental, physical, and terrain-related hazards. Appropriate PPE should be selected based on the hazards identified during the field risk assessment, environmental conditions, type of activity being performed, and anticipated exposure potential.
- Personnel should inspect PPE before use, ensure proper fit, and receive appropriate training on the use, limitations, cleaning, storage, and replacement of PPE when applicable.
- In the event of an exposure, injury, bite, sting, rash, illness, or other field-related concern, personnel should promptly notify their supervisor and follow applicable emergency response, Occupational Health, Workers' Compensation, and incident reporting procedures.

Tetanus Review: *Field personnel should ensure their tetanus vaccination is current before participating in field work. Any puncture wound, animal bite/scratch, or wound contaminated with soil, dust, or saliva should trigger a tetanus vaccination review through Occupational Health or the treating medical provider.*

Rabies Review: *Field personnel who may have occupational contact with wild mammals or other animals with potential rabies exposure should have their need for rabies pre-exposure vaccination evaluated before participating in field work. Any animal bite, scratch, or other potential exposure to saliva or nervous system tissue from a potentially rabid animal should be reported immediately and evaluated through Occupational Health or an appropriate medical provider to determine whether rabies post-exposure prophylaxis is needed.*

Organize by severity or likelihood

Biological Hazard

Hazard Area	Potential Risk	Recommended Prevention / Controls	Recommended PPE	Follow-Up if Exposure Occurs or Incident Occurs	What to Do After an Exposure or Injury
Snakes / Rattlesnakes	**Snake bite, venom exposure, tissue injury, swelling, medical emergency**	▪ Stay on paths; avoid sitting in grass/brush; ▪ perform tick and buddy checks; ▪ shower/change clothes after field work ▪ Southern California field sites may contain ▪ rattlesnakes, especially in rocky areas, brush, tall grass, wood piles, and warm	☐ Snake gaiters, high-ankle ☐ boots, long pants, long sleeves, ☐ leather/work gloves when handling brush or debris, communication device, ☐ First aid kit	☐ If bitten: Move away from the snake immediately. Call 911 as soon as possible. Keep the person calm and limit movement. ☐ Keep the bitten extremity still and in a neutral or slightly lowered position. ☐ Remove rings, watches, jewelry, or tight clothing before swelling develops. ☐ Wash the wound gently with soap and water if available and cover with a clean dressing. ☐ Do **not** cut the wound, apply ice, apply suction, use a tourniquet, ☐ apply electric shock, consume alcohol/caffeine, or attempt to suck out venom. ☐ Do not attempt to capture or transport the snake. A photo from a	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report ☐ If medical evaluation or treatment is needed, follow UCR Workers'

		shaded areas. ▪ Personnel should remain alert when walking, climbing, kneeling, or handling vegetation or debris. Avoid placing hands or feet where visibility is limited. ▪ Never reach blindly into brush, holes, rock crevices, logs, or under equipment/materials. ▪ Stay on established trails when possible. ▪ Step on top of logs or rocks first, then look before stepping down. ▪ Avoid tall grass, leaf piles, and dense brush where visibility is limited. ▪ Never touch, capture, harass, or attempt to kill snakes, including injured or apparently dead snakes. ▪ Snakes may still bite reflexively after death. Maintain a safe distance and allow snakes to move away naturally. ▪ Avoid wearing earbuds/headphones that reduce situational awareness. ▪ Field teams should identify the nearest emergency medical facility before beginning work and establish communication/check-in procedures for remote locations. ▪ Training should include rattlesnake awareness, habitat recognition, seasonal activity, and emergency response procedures. ▪ CDC and California agencies recommend wearing boots and long pants in snake habitat and using caution around rocks, wood piles, and brush.		safe distance may help with identification, but treatment should not be delayed **California Poison Control** **California Poison Control can help hospitals and the public with snake bite management 24/7:** **1-800-222-1222** Their toxicologists often assist emergency physicians in determining: ▪ whether antivenom is needed, ▪ dosing, ▪ monitoring, ▪ and transfer recommendations. Antivenom is expensive, requires medical oversight, refrigeration/storage controls, monitoring for allergic reactions, and IV administration in a clinical setting. ☐ For best results, antivenom treatment should be given as soon as possible after the bite. ☐ It is usually given within four hours of a bite. Snake antivenom (often called antivenin) is not something individuals or field teams typically carry themselves in California. It is usually stocked and administered through hospitals, especially emergency departments that treat venomous snake bites. ☐ For rattlesnake bites in California: ▪ The main antivenom used is typically CroFab (Crotalidae Polyvalent Immune Fab). ▪ Some hospitals may also use newer antivenom products such as Anavip ▪ Not every rattlesnake bite requires antivenom. Some bites are “dry bites,” meaning little or no venom was injected. **Important California considerations** In Southern California and remote field locations: ▪ The most important thing is rapid access to emergency medical care. ▪ Field plans should identify: ▪ nearest emergency department, ▪ helicopter/EMS access if remote, ▪ communication methods, ▪ estimated transport time. Some smaller hospitals may stabilize the patient and transfer them to a larger medical center with more toxicology resources if needed. ▪ CDC – Outdoor Workers ▪ Rattlesnake Safety ▪ State of California Human – Wildlife conflicts: Snakes ▪ California Poison Control	Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For life-threatening emergencies, call 911 immediately.

Mountain Lions / Wildlife Encounters	Potential wildlife encounter, scratches, bites, traumatic injury, panic-related falls, or defensive/aggressive animal behavior during field activities in remote, canyon, riparian, brushy, or wildland environments. Risk may increase during dawn/dusk hours, in areas with dense vegetation, near deer activity, or in remote locations with limited visibility or limited human activity.	▪ Maintain situational awareness and avoid working alone in remote wildlife habitat when possible. ▪ Use a buddy system and maintain communication during field activities. ▪ Avoid hiking or conducting field work alone during dawn, dusk, or nighttime hours when wildlife activity may increase. ▪ Stay on established trails when feasible and avoid dense brush, animal carcasses, or areas with fresh wildlife tracks/scat. ▪ Do not approach, feed, corner, or attempt to interact with wildlife. ▪ Keep children and pets close when applicable. ▪ If a mountain lion is observed, remain calm, do not run, maintain eye contact, ▪ make yourself appear larger, ▪ make noise, slowly back away, and ▪ provide the animal an opportunity to leave. ▪ If attacked, fight back aggressively and protect the head and neck area. ▪ Field teams should identify emergency communication methods, ▪ nearest emergency medical facilities, ▪ and check-in/check-out procedures before beginning work in remote areas. ▪ California Department of Fish and Wildlife (CDFW) guidance recommends maintaining awareness in mountain lion habitat and avoiding isolated activities in high-risk areas.	☐ High-ankle boots, ☐ long pants, ☐ gloves when handling vegetation or debris, ☐ communication device, ☐ First aid kit, ☐ flashlight/headlamp if low-light conditions may occur.	☐ Report wildlife encounters, aggressive behavior, bites, scratches, or near-miss incidents promptly. ☐ Seek emergency medical evaluation for any bite, scratch, traumatic injury, or suspected wildlife attack. ☐ Notify supervisors and follow applicable emergency response, Occupational Health, Workers' Compensation, and incident reporting procedures. **In remote locations, activate emergency communication procedures and contact 911 as appropriate.** ▪ CDC – Outdoor Workers ▪ California Department of Fish and Wildlife – Mountain Lion Safety ▪ National Park Service – Mountain Lion Safety ▪ California Poison Control	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For life-threatening emergencies, call 911 immediately.
Ticks	Tick bites; possible tick-borne illness	▪ Stay on paths ▪ Avoid sitting on grass/brush	☐ Long sleeves ☐ Long pants ☐ Light-colored clothing pants tucked into socks/boots/gaiters	☐ Report tick bite ☐ Remove tick promptly ☐ Seek medical advice if rash, fever, fatigue, joint pain, or flu-like symptoms occurs ▪ Lyme Disease Prophylaxis After Tick Bite	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal

		▪ Perform tick and buddy checks ▪ Shower/change clothes after field work	☐ EPA-registered repellent ☐ Tick removal tool	**Post-exposure antibiotics** In certain circumstances, a single dose of doxycycline after a tick bite in an area where Lyme disease is common may lower risk of Lyme disease. This must be done within a 72 hrs. window. Ask your healthcare provider if antibiotics after a tick bite are appropriate for you. ▪ Protect Yourself from Ticks Where You Work: ▪ CDPH- Vector -borne disease section: Ticks ▪ Prevent Tick Bites ▪ California Endemic Tick-Borne Diseases At-a-Glance ▪ Interactive Maps of Lyme Disease and Tick Surveillance in California	Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For life-threatening emergencies, call 911 immediately.
Rodents / Hantavirus	Exposure to rodent urine, droppings, saliva, nesting material	▪ Avoid disturbing nests/droppings ▪ Do not sweep/vacuum dry droppings ▪ Wet contaminated material with disinfectant ▪ Store food securely ▪ Follow biosafety procedures	☐ Nitrile/disposable gloves ☐ Work gloves ☐ Eye protection ☐ Protective clothing/coveralls ☐ Respirator only (N-95) if required with clearance/fit testing and medical clearance	**Report Exposure & Seek Immediate Medical Care** Report any rodent bites, scratches, or suspected exposure immediately. Seek medical guidance through **Occupational Health** or **Workers' Compensation**. ▪ CDC- Hantavirus Prevention ▪ CDC - Clinician Brief: Hantavirus Pulmonary Syndrome (HPS) ▪ CDPH - Hantavirus Infection ▪ UCR - Hantavirus ▪ UCR - Spotlight on safety Hantavirus	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For life-threatening emergencies, call 911 immediately.
Mosquitoes / Other Vectors	Insect bites and potential exposure to vector-borne diseases, including West Nile virus, St. Louis encephalitis, and other mosquito-associated illnesses. For Southern California field environments, risk may be higher in canyons, riparian areas, wetlands, irrigation channels, drainage areas, and shaded brush habitats.	▪ Avoid standing water and mosquito breeding areas when possible. ▪ Be aware of ponds, drainage channels, irrigation areas, container, wetlands, shaded vegetation, and other areas where mosquitoes may accumulate.	☐ Long sleeves ☐ Long pants ☐ Light-colored clothing ☐ EPA-registered insect repellent ☐ Mosquito netting if applicable	**Post-Field Work Illness & Vector Exposure** Report symptoms such as fever, rash, severe headache, body aches, fatigue, neurologic symptoms, or unusual illness following field work. **Action Required:** Seek medical evaluation if symptoms develop after mosquito or vector exposure. ▪ CDC-Mosquito-Borne Diseases in Workers ▪ CDC - Preventing West Nile ▪ CDC - Preventing Mosquito Bites	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident

	Additional concerns include increased mosquito activity at dawn and dusk, standing water that may support mosquito breeding, flea exposure near rodents or animal nesting areas, and the need to report unusual vector activity or illness following field work.	▪ Plan field work to minimize exposure during peak mosquito activity periods (typically dawn and dusk) when feasible. ▪ Use EPA-registered insect repellent according to label instruction ▪ Consider permethrin-treated clothing when appropriate ▪ Conduct routine checks for insect exposure during and after field work ▪ Maintain awareness of rodents or animal nesting areas that may contribute to flea or vector exposure ▪ Follow field hygiene practices and promptly report unusual insect activity or large mosquito concentrations.	☐ Gaiters/boots when working in dense vegetation	▪ CDPH – West Nile Virus Information ▪ CDPH- Vector-Borne Disease Section ▪ California Mosquito and Vector Control Association	Reporting System at ehs.ucr.edu/report ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For life-threatening emergencies, call 911 immediately.
Bees / Wasps / Stinging Insects	Bee or wasp stings, allergic reactions, localized swelling, pain, anaphylaxis, distraction-related injuries, falls, or multiple stings during outdoor field activities.	▪ Maintain situational awareness when working near vegetation, flowering plants, trees, wood piles, structures, or areas with visible insect activity. ▪ Avoid disturbing nests, hives, burrows, or swarms. ▪ Inspect work areas, equipment, and vehicles before use when feasible. ▪ Avoid wearing heavily scented lotions, perfumes, or strongly scented products that may attract insects. ▪ Use caution when eating or drinking outdoors, especially with open beverage containers. ▪ Personnel with known sting allergies should notify supervisors before	☐ Long sleeves ☐ Long pants ☐ Gloves when handling vegetation or debris ☐ Closed-toe boots ☐ Light-colored clothing when feasible ☐ Communication device, personal ☐ Emergency medication (e.g., epinephrine auto-injector) if prescribed	**Insect Hazard & First Aid Protocol** **Immediate First Aid:** 1. Remove Stinger: Remove promptly if present by scraping the area with a firm edge (e.g., card edge) when feasible. 2. Clean & Soothe: Wash the area with soap and water and apply a cold compress as appropriate. **Monitor for Anaphylaxis:** ▪ Watch for severe allergic symptoms: difficulty breathing, facial/throat swelling, widespread hives, dizziness, vomiting, or loss of consciousness. ▪ Call 911 immediately for any signs of a severe reaction or anaphylaxis. ▪ Personnel with prescribed epinephrine auto-injectors (EpiPens) should use them according to medical guidance. **Reporting Requirements:** Report stings, allergic reactions, nest/swarm activity, or significant insect hazards through applicable institutional reporting procedures. **Resources & Links:** ▪ **UC EH&S:** Bee and Wasp Stings Safety Guidance ▪ **CDC:** Outdoor Workers: Insects & Scorpions	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For life-threatening emergencies, call 911 immediately.

		field work and discuss emergency planning as appropriate. ▪ Field teams should establish communication procedures and know the location of the nearest emergency medical facility. ▪ If bees or wasps become aggressive, calmly and quickly leave the area without swatting aggressively or disturbing the insects further.			
Spiders	Spider bites, localized pain or swelling, allergic reaction, skin irritation, secondary infection, or anxiety-related injury during field work activities. Risk may increase in areas with wood piles, rock crevices, debris, storage areas, equipment, dense vegetation, abandoned structures, or undisturbed materials where spiders may shelter. Certain spiders found in California, including black widow spiders, may cause more significant symptoms requiring medical evaluation.	▪ Maintain situational awareness when working around rocks, vegetation, equipment, wood piles, stored materials, crawl spaces, sheds, or enclosed areas. ▪ Avoid placing hands into areas that cannot be clearly seen. ▪ Use caution when moving rocks, debris, boxes, tarps, traps, or stored equipment. ▪ Shake out gloves, boots, clothing, sleeping bags, and field gear before use when appropriate. ▪ Maintain good housekeeping and reduce clutter or debris accumulation in work and storage areas when feasible. ▪ Avoid direct handling of spiders. ▪ Personnel should be trained to report unusual bites, significant swelling, or systemic symptoms following field work.	☐ Gloves ☐ Long sleeves ☐ Long pants ☐ High-ankle boots ☐ Protective clothing as appropriate, flashlight/headlamp for low-light areas	**Spider Bite First Aid & Hazard Protocol** **First Aid & Monitoring:** 1. **Clean:** Wash the affected area thoroughly with soap and water. 2. **Soothe:** Apply a cold compress to help reduce local pain and swelling. 3. **Monitor:** Watch for pain, swelling, redness, muscle cramping, fever, dizziness, or worsening symptoms. **When to Seek Immediate Medical Care:** Seek prompt medical evaluation if you experience: ▪ Severe or worsening pain ▪ Spreading redness ▪ Allergic reactions or difficulty breathing ▪ Muscle cramps ▪ Suspected Black Widow spider bites **Reporting:** Report all spider bites, pest infestations, or significant spider hazards through applicable institutional reporting procedures. **Reference Links:** ▪ **CDC:** CDC - Venomous Spiders at Work ▪ **California Poison Control System:** Spider Bites Overview	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For life-threatening emergencies, call 911 immediately.
Poison Oak / Vegetation	Skin irritation, rash, allergic reaction, scratches	▪ Train personnel to identify poison oak. ▪ Avoid dense vegetation.	☐ Long sleeves ☐ Long pants	**Poisonous Plant First Aid & Exposure Protocol** **Immediate Decontamination:** 1. **Wash Skin Immediately:** Wash exposed skin ASAP with plenty of water and a degreasing soap, poison plant wash, or rubbing alcohol to remove plant oils (*urushiol*). Cleansing wipes can also be used in the field.	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal

		▪ Avoid touching face/eyes. ▪ Clean tools/boots/gloves after field work	☐ Gloves protective outer layer/coveralls, safety glasses, barrier cream if appropriate	2. **Launder Gear Separately:** Wash exposed clothing and gear separately in hot water with detergent to prevent cross-contamination **Monitoring & Medical Action:** ▪ Watch for symptoms such as redness, severe itching, swelling, or blistering. ▪ Report worsening rashes, spreading inflammation, or severe reactions to your supervisor and Occupational Health. **Reference Links:** ▪ **UC IPM:** Poison Oak Identification and Management ▪ **CDC:** CDC- Protecting Yourself from Poisonous Plants	Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For life-threatening emergencies, call 911 immediately.
Biological Sampling / Specimen Handling	Contact with biological material, animal tissue, blood, saliva, urine, feces, contaminated soil, environmental samples, or other potentially infectious materials. Potential risks include bites, scratches, splashes, skin or mucous membrane exposure, contamination of clothing/equipment, allergic reactions, zoonotic disease exposure, and improper sample transport or disposal.	▪ Follow approved field biosafety procedures, protocols, and any applicable risk assessment requirements. ▪ Avoid eating, drinking, applying cosmetics, or touching the face while handling biological materials. ▪ Use hand hygiene before and after sample handling and after removing gloves. ▪ Handle specimens carefully to prevent spills, splashes, sharps injuries, bites, scratches, or contamination. ▪ Use leak-proof, labeled, and appropriate secondary containment for sample packaging and transport. ▪ Keep biological materials separate from food, personal items, and clean equipment. ▪ Decontaminate reusable tools, work surfaces, and equipment after use. ▪ Dispose of contaminated materials according to approved procedures.	☐ Nitrile/disposable gloves ☐ Work gloves as needed ☐ Eye protection ☐ Protective clothing or lab coat/coveralls ☐ Face shield if splash risk exists ☐ Respiratory protection only if required and medically cleared	**Biological Sampling & Specimen Exposure Protocol** **Immediate Response & First Aid:** ▪ Skin Exposure, Bites, or Sharps: Wash affected skin thoroughly with soap and water immediately. ▪ Splashes to Eyes or Mucous Membranes: Flush continuously at an eyewash station or water source for 15 minutes. **Medical Action & Reporting** ▪ **Report Immediately:** Notify your supervisor and report any bite, scratch, splash, sharps injury, contamination, or breach in containment. ▪ **Medical Evaluation:** Seek guidance and evaluation through Occupational Health or Emergency Services as appropriate. ▪ **Documentation:** Complete required institutional exposure documentation, Workers' Compensation forms, and biosafety post-exposure reporting procedures.	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For life-threatening emergencies, call 911 immediately.

		▪ Ensure personnel are trained on specimen handling, exposure response, PPE use, and reporting requirements before field work begins			

Environmental Hazards

1. Heat / Sun Exposure
2. Wildfire & Smoke
3. Dust / Airborne Particulates
4. Weather
5. Water Hazards

Hazard Area	Potential Risk	Recommended Prevention / Controls	Recommended PPE	Follow-Up if Exposure Occurs or Incident Occurs	What to Do After an Exposure or Injury
Heat / Sun Exposure	Exposure Heat illness, dehydration, heat exhaustion, heat stroke, sunburn, UV exposure, fatigue, dizziness, confusion, and impaired judgment during outdoor work activities. Risks may increase in Southern California field environments with high temperatures, direct sun exposure, limited shade, strenuous activity, heavy PPE use, or inadequate acclimatization	▪ Monitor weather conditions, heat index, and forecasted temperatures before and during field activities. ▪ Schedule strenuous work during cooler parts of the day when feasible. ▪ Encourage frequent hydration and provide access to cool drinking water. ▪ Utilize shade structures, shaded rest areas, and cool-down breaks. ▪ Encourage personnel to report symptoms early and use a buddy system during high heat conditions. ▪ Allow time for acclimatization, especially during heat waves or when personnel are returning to outdoor work after time away. ▪ Avoid excessive exertion during peak heat conditions and monitor personnel for signs of heat illness. ▪ Follow Cal/OSHA Heat Illness Prevention requirements, including water, rest, shade, training, emergency communication procedures, and high-heat monitoring when applicable	☐ Wide-brim hat ☐ Sunscreen ☐ UV-protective sunglasses ☐ Breathable long sleeves ☐ Lightweight/light-colored clothing ☐ Cooling towels ☐ Hydration supplies	**Heat & Sun Exposure Protocol** **Immediate Response** ▪ **Stop Work:** Stop work immediately if symptoms develop. ▪ **Move & Cool:** Relocate the affected person to a cool, shaded area. Loosen tight clothing and apply cool towels or cooling packs. ▪ **Hydrate Safely:** Provide cool water **only** if the person is alert and able to drink safely. **Call 911 for Heat Stroke Signs** Seek emergency medical care immediately for: ▪ Confusion or altered mental status ▪ Fainting or severe weakness ▪ Vomiting, seizures, or loss of consciousness **Symptom Reporting** Personnel must promptly report symptoms including dizziness, headache, nausea, excessive fatigue, muscle cramps, or confusion to their supervisor. **Reference Links & Regulations:** ▪ **CDPH:** CDPH – Extreme Heat safety ▪ **Cal/OSHA:** §3395. Heat Illness Prevention in Outdoor Places of Employment.	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ For life-threatening emergencies, call 911 immediately.

Wildfire & Smoke	Wildfire smoke, ash, and changing fire conditions may cause exposure to fine particulate matter ($PM_{2.5}$), carbon monoxide, gases, and other combustion products. Potential effects include eye and respiratory irritation, coughing, wheezing, shortness of breath, headache, dizziness, fatigue, chest pain, rapid heartbeat, asthma exacerbation, and worsening of existing heart or lung conditions. Wildfires may also create burns, falling debris, reduced visibility, road closures, evacuation hazards, and rapidly changing escape conditions.	▪ Check current and forecasted air quality, weather, fire activity, evacuation warnings, and road conditions before beginning field work. ▪ Continue monitoring conditions throughout the activity using AirNow https://www.airnow.gov/ or another reliable government source. ▪ Establish a method for communicating changing conditions, work modifications, evacuation instructions, and emergencies. ▪ Do not enter an active fire area, evacuation zone, closed road, or other restricted location unless specifically authorized, trained, and equipped to do so. ▪ Stop work and leave the area immediately if instructed by emergency officials or if fire, smoke, visibility, or access conditions create an immediate danger. ▪ When smoke is present, reduce exposure by relocating work, rescheduling activities, moving indoors to a building with filtered air, reducing strenuous activity, limiting exposure time, or providing additional rest periods. ▪ Keep vehicle windows and doors closed when practical and operate ventilation systems in recirculation mode. ▪ Avoid unnecessarily disturbing ash or burned materials. Do not use dry sweeping or compressed air to clean ash. ☐ Personnel with asthma, COPD, cardiovascular disease, pregnancy, or other conditions that may increase their risk should consult Occupational Health before conducting work when significant smoke exposure is reasonably anticipated. ▪ Notify the supervisor or PI immediately if smoke conditions worsen, the AQI reaches an action level, or planned controls cannot be implemented. When the Cal/OSHA wildfire-smoke standard applies: ▪ At an AQI for $PM_{2.5}$ of 151–500,	☐Safety glasses or goggles when exposed to blowing ash or debris ☐Gloves when handling ash-covered or fire-damaged materials ☐ Long sleeves and protective clothing when appropriate ☐High-visibility clothing when working near roads or emergency-response activity ☐ NIOSH-approved N95 or more protective respirator, when provided or required under applicable wildfire-smoke procedures ☐ Other task-specific PPE identified through the field hazard assessment	**Wildfire-Smoke Exposure Warning** ☐ Wildfire smoke can affect anyone. Individuals with asthma, COPD, heart disease, diabetes, chronic kidney disease, or other underlying medical conditions—and individuals who are pregnant—may face an increased risk of serious health effects. **Symptom Reporting** ☐ Immediately report symptoms occurring during or following smoke exposure, including: ☐ Respiratory: Coughing, wheezing, shortness of breath, chest tightness, sore throat, or difficulty breathing ☐ Eye and nasal: Burning or watery eyes, runny nose, sinus irritation, or significant eye irritation ☐ Cardiovascular: Chest pain, heart palpitations, rapid heartbeat, or unusual weakness ☐ Systemic: Headache, dizziness, nausea, confusion, or unusual fatigue **Medical Action** ☐ Move to an area with cleaner air if symptoms develop. ☐ Seek medical evaluation for persistent or worsening symptoms, asthma exacerbation, suspected significant smoke exposure, or symptoms that do not improve after leaving the affected area. ☐ Call 911 immediately for severe breathing difficulty, chest pain, confusion, fainting, or another medical emergency. ☐ Anyone who experiences breathing difficulty, dizziness, or other concerning symptoms while wearing a respirator should leave the contaminated area and obtain medical assistance. **Hazard and Environmental Reporting** **Personnel must report:** ▪ Visible smoke or ash affecting the work area ▪ AQI conditions reaching applicable action levels ▪ Nearby wildfire activity or evacuation warnings ▪ Reduced visibility, unsafe travel conditions, or	☐ Following any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator as soon as possible. ☐ Report the incident through the **UCR EH&S Incident Reporting System** at ehs.ucr.edu/report ☐ Employees needing medical evaluation or treatment must follow UCR Workers' Compensation procedures and seek care through an approved provider. ☐ Students, volunteers, and other nonemployees should follow the applicable UCR program, Student Health, or emergency-care procedures. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For a life-threatening emergency, call **911** immediately.

		implement feasible engineering and administrative controls. The employer must provide NIOSH-approved respirators, such as N95s, for voluntary use and encourage their use. ▪ At an AQI for $PM_{2.5}$ above 500, respirator use is mandatory and must be managed under the applicable respiratory protection program, including medical evaluation, fit testing, training, and appropriate respirator selection. ▪ Surgical masks, cloth face coverings, bandanas, and similar coverings do not provide equivalent protection from wildfire smoke. ▪ An N95 protects against particles but does not protect against hazardous gases, vapors, carbon monoxide, or oxygen-deficient atmospheres. ▪ These thresholds come from California Code of Regulations, Title 8, Section 5141. https://www.dir.ca.gov/title8/5141_1.html		▪ blocked evacuation routes ▪ Failure or unavailability of required controls ▪ Any condition that may require an Industrial Hygiene, Occupational Health, or emergency-management evaluation **Reference** **Air Quality Mapping & Tracking Monitor live particulate data and smoke coverage using the AirNow Fire and Smoke Map. https://fire.airnow.gov/#6/41/-98**	
Dust / Airborne Particulates	Respiratory irritation, allergen exposure, eye irritation, contaminated dust exposure, asthma exacerbation, inhalation of biological or environmental particulates, reduced visibility, and potential exposure to soil, animal allergens, mold, dried vegetation, rodent-contaminated dust, or other airborne materials commonly encountered during outdoor field work, trail activities, excavation, vegetation disturbance, or dry/windy conditions.	▪ Avoid unnecessarily disturbing dust or dry debris when possible. ▪ Wet down dusty materials or surfaces when appropriate and safe to do so. ▪ Limit time spent in heavily dusty areas and avoid working directly downwind of airborne particulates when feasible. ▪ Monitor environmental conditions such as wind, dry soil, smoke, or wildfire-related air quality concerns. Maintain good housekeeping and proper handling procedures during field sampling or vegetation disturbance activities. ▪ Personnel with asthma, allergies, or respiratory conditions should notify Occupational Health or supervisors if accommodations or additional controls may be needed. ▪ Evaluate the need for Industrial Hygiene (IH) or Occupational Health (OH) review when work may involve significant airborne particulate exposure, allergen exposure, mold, rodent contamination, smoke, or other respiratory hazards.	☐ Safety glasses or goggles ☐ Gloves ☐ Long sleeves ☐ N95 or other approved respirator if required and medically cleared ☐ Protective clothing when appropriate	**Dust, Airborne Particles & Hantavirus Risk** **Hantavirus Exposure Warning:** Deer mice carry Hantavirus. Field work in areas with rodent droppings, urine, saliva, or nesting materials poses a severe risk of exposure if contaminated dust becomes airborne and is inhaled. **Symptom Reporting:** Report any of the following symptoms immediately following exposure: ▪ **Respiratory:** Coughing, wheezing, shortness of breath, chest tightness, breathing difficulty ▪ **Systemic:** Fever, fatigue, dizziness, eye irritation, allergic reactions **Medical Action:** Seek medical evaluation for persistent or worsening respiratory symptoms, asthma exacerbation, or suspected exposure to rodent-contaminated dust or biological material. **Hazard & Environmental Reporting:** Personnel must report significant rodent activity, air quality concerns, or environmental conditions that may require engineering controls or additional evaluation.	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For life-threatening emergencies, call 911 immediately.

		▪ Respiratory protection should only be used when required under an approved respiratory protection program, including medical clearance, fit testing, and training as applicable.		**Reference Links:** ▪ **CDC:** Hantavirus Prevention ▪ **CDC:** How to clean up after Rodents ▪ **CDC:** CDC - Clinician Brief: Hantavirus Pulmonary Syndrome (HPS) ▪ **CDPH:** Hantavirus Infection	
Weather	Extreme heat, direct sun and ultraviolet radiation, dehydration, heat illness, sudden temperature changes, cold exposure at higher elevations or during early-morning/night work, thunderstorms, lightning, heavy rain, flash flooding, high winds, Santa Ana wind conditions, blowing debris, reduced visibility, falling trees or branches, unstable terrain, and rapidly changing wildfire conditions	**Required Controls** ▪ Check the National Weather Service forecast, alerts, HeatRisk, Red Flag Warnings, wind advisories, and flood warnings before departure and throughout field activities. ▪ Identify weather-related stop-work criteria, evacuation routes, reliable shelter, emergency communication methods, and personnel accountability procedures before beginning work. ▪ Reschedule strenuous work for cooler hours when feasible. ▪ Provide fresh, suitably cool drinking water and encourage frequent drinking. For employees, plan for at least one quart of water per person per hour when required under California's outdoor heat standard. ▪ Provide access to shade. Under Cal/OSHA requirements, shade must be present when outdoor temperatures exceed 80°F and available upon request at lower temperatures. ▪ Allow and encourage preventative cool-down rests. Do not require a symptomatic person to continue working. ▪ Use enhanced high-heat controls at 95°F or above, including closer observation, a buddy system or regular check-ins, additional rest, frequent hydration reminders, and a pre-shift safety review, consistent with applicable UCR and Cal/OSHA procedures. ▪ Closely monitor personnel who are newly assigned, returning from an extended absence, or not acclimatized to hot conditions. ▪ Increase rest and hydration when work involves heavy exertion, direct sun, impermeable clothing, respirators, or other PPE that increases heat stress. ▪ Stop outdoor work and seek shelter in a substantial building or fully enclosed, hard-topped vehicle when thunder is heard or lightning is observed. Wait at least 30 minutes after the last thunder before resuming work. ▪ Do not use trees, tents, picnic shelters, open structures, or isolated equipment as lightning shelter. ▪ Do not enter dry washes, slot canyons,	☐ Wide-brimmed hat or other sun protection ☐ UV-protective safety glasses or sunglasses ☐ Broad-spectrum sunscreen and lip protection ☐ Lightweight, breathable, long-sleeved clothing ☐ Cooling vest or other approved cooling equipment when appropriate ☐ Waterproof or insulating layers for rain, cold, or high-elevation work ☐ High-visibility clothing during low visibility or roadside work ☐ Safety helmet when falling-object hazards are present ☐ Sturdy, slip-resistant footwear	**Southern California Weather Warning** ▪ Southern California weather can change significantly between coastal, valley, mountain, and desert locations. ▪ Extreme heat may occur outside the summer months. ▪ Mountain and desert thunderstorms can produce lightning and flash flooding even when little or no rain is falling at the immediate worksite. ▪ Santa Ana winds may create blowing-dust, falling-object, driving, wildfire, and evacuation hazards. **Symptom Reporting** **Immediate report:** ☐ Heat-related symptoms: Heavy sweating, thirst, headache, muscle cramps, nausea, weakness, dizziness, fainting, confusion, unusual behavior, or loss of consciousness ☐ Cold-related symptoms: Uncontrolled shivering, numbness, confusion, slurred speech, loss of coordination, or unusual fatigue ☐ Weather-related injury: Lightning exposure, fall, struck-by injury, blowing-debris injury, or floodwater exposure **Emergency Action** Move a person with possible heat exhaustion to shade or a cooler area, loosen unnecessary clothing, begin active cooling, and obtain medical assistance if symptoms do not improve. Heat stroke is a medical emergency. Call 911 immediately for confusion, altered behavior, collapse, seizures, loss of consciousness, or other severe symptoms. Begin rapid cooling while awaiting emergency responders.	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Notify Occupational Health when post-exposure evaluation, medical surveillance, immunization review, or other occupational health follow-up may be required. ☐ For life-threatening emergencies, call 911 immediately.

		drainage channels, low-water crossings, or recently burned areas when thunderstorms or heavy rain are forecast locally or upstream. ▪ Never cross flowing floodwater on foot or in a vehicle. Move immediately to higher ground when a flash-flood warning is issued or water begins rising. ▪ Suspend work during high winds when falling branches, flying objects, unstable equipment, dust, poor visibility, or unsafe driving conditions are present. ▪ Secure loose materials, tents, sampling equipment, and other objects that could become airborne. ▪ Personnel taking medications or having health conditions that may increase sensitivity to heat, sun, or cold should consult Occupational Health when additional controls may be needed.		Call 911 following a lightning strike. A lightning victim is safe to touch; begin CPR and use an AED if indicated and if trained. Do not leave a person experiencing possible heat illness alone or send the person home without appropriate evaluation. **References:** ▪ **National Weather Service—San Diego and Inland Southern California** ▪ **National Weather Service—Los Angeles and Ventura Counties** ▪ **National Weather Service—Lightning Safety** ▪ **National Weather Service—Flood Safety**	
Water Hazards	Drowning, slips and falls, swift or unexpectedly rising water, cold-water shock, hypothermia, rip currents, waves, tides, unstable banks, submerged objects, contaminated water, harmful algal blooms, sewage or urban runoff, animal waste, sharp objects, marine organisms, equipment loss, and delayed emergency response. Southern California field locations may include beaches, tidal areas, wetlands, rivers, streams, reservoirs, lakes, irrigation canals, aqueducts, storm channels, dry washes, and flood-control structures. Water depth, flow, temperature, and contamination may change without warning because of tides, rainfall, upstream releases, or facility operations.	**Required Controls** ▪ Complete a site-specific assessment before working in, over, or adjacent to water. ▪ Evaluate water depth, current, temperature, tides, surf, rip-current risk, weather, upstream rainfall, dam or water releases, bank stability, access, contamination, and emergency-response capability. ▪ Check marine forecasts, tide tables, beach hazard statements, flood warnings, and posted water-quality advisories before work begins. ▪ Avoid working alone where a fall into water, entrapment, or drowning hazard exists. Maintain a buddy system or continuous observation. ▪ Establish reliable communications, check-in procedures, emergency access points, and the exact location information needed by emergency responders. ▪ Use sampling poles, remote collection devices, platforms, or other methods that eliminate the need to enter water whenever feasible. ▪ Do not enter swift water, floodwater, storm drains, aqueducts, canals, restricted reservoirs, or other controlled water systems unless the activity is specifically authorized and supported by an approved work and rescue plan. ▪ Never cross a flooded roadway, flowing drainage channel, or dry wash on foot or in a vehicle. ▪ Maintain a safe distance from unstable banks, cliffs, spillways, culverts, slippery rocks, and steep-sided canals. ▪ For coastal work, monitor waves continuously and use a designated spotter when personnel could be struck by surf or trapped by a rising tide.	**Recommended PPE and Safety Equipment** ☐ Properly fitted U.S. Coast Guard-approved personal flotation device ☐ Slip-resistant, closed-toe footwear ☐ Waterproof gloves appropriate for the task and potential contaminants ☐ Safety glasses, goggles, or face protection when splashing is possible ☐ Waders or waterproof clothing, when appropriate ☐ Wader belt when chest waders are used ☐ Thermal or cold-water protective clothing based on water temperature ☐ High-visibility clothing ☐ Cut-resistant gloves or puncture-resistant footwear when sharp debris may be present ☐ Sun protection	**Water-Entry and Wader Warning** Waders do not replace a personal flotation device. Water entering waders can impair movement and increase drowning risk. Chest waders should not be used in swift, deep, or unpredictable water without specific training, a wader belt, an appropriate flotation device, and an approved rescue plan. **Contaminated-Water Warning** Natural and urban waterways may contain bacteria, viruses, parasites, harmful algal toxins, sewage, chemicals, animal urine or feces, and sharp debris. Exposure may occur through ingestion, splashes to the eyes or mouth, inhalation of aerosols, or contact with broken skin. **Symptom and Exposure Reporting** Immediately report: ▪ Falling into water, submersion, near drowning, or inhalation of water ▪ Loss of footing or uncontrolled movement in a current ▪ Cuts or puncture wounds sustained in or near water ▪ Contact with sewage, floodwater, harmful algal blooms, or visibly contaminated water ▪ Marine-animal bites, stings, or punctures ▪ **Possible cold-water effects:** Gasping, uncontrolled breathing, shivering, numbness, confusion, slurred speech, or loss of coordination ▪ **Possible waterborne illness:** Fever, headache, muscle aches, vomiting, diarrhea, abdominal pain, rash, eye irritation, jaundice, or an infected wound **Medical Action** ▪ Call 911 immediately for a drowning or near-drowning event, breathing difficulty, loss of consciousness, suspected hypothermia, or inability to exit the water	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ For life-threatening emergencies, call 911 immediately.

		▪ Do not turn your back on the ocean when working within reach of waves. ▪ Do not enter the ocean when high surf, dangerous shore break, lightning, tsunami warnings, or significant rip-current hazards are present. ▪ Boats and watercraft must be operated by authorized and appropriately trained personnel. Complete required inspections and carry communication, emergency, and rescue equipment. ▪ A properly fitted, U.S. Coast Guard-approved personal flotation device must be available for each person aboard a vessel and worn whenever required by law, the site-specific assessment, or UCR procedures. ▪ Provide appropriate rescue equipment—such as a throw bag, ring buoy, reaching pole, or rescue line—when a drowning hazard exists. ▪ Personnel must not enter hazardous water to attempt a rescue unless trained, equipped, and assigned to perform water rescue. Use “reach or throw, do not go” methods and call 911. ▪ Avoid contact with water that is discolored, has surface scum, has a strong odor, contains dead animals or fish, or is subject to a harmful algal bloom or sewage advisory. ▪ Cover cuts and abrasions with waterproof dressings before possible water contact. ▪ Wash hands before eating or drinking. Clean and disinfect exposed skin, footwear, equipment, and reusable PPE after contact with potentially contaminated water. ▪ Do not consume untreated surface water.		safely. ▪ Anyone who inhaled water or experienced a submersion or near-drowning event should receive prompt medical evaluation, even if the individual initially appears to have recovered. ▪ Seek medical evaluation for significant contaminated-water exposure, persistent gastrointestinal or respiratory symptoms, fever, worsening rash, eye exposure, or signs of wound infection. ▪ Notify Occupational Health when post-exposure evaluation or additional medical follow-up may be required. **Reference Links** ▪ California Department of Water Resources—Water Safety ▪ California Division of Boating and Waterways—Life Jackets ▪ National Weather Service—Rip-Current Safety ▪ National Weather Service—Flood Safety ▪ California Department of Public Health—Harmful Algal Blooms	

Physical Hazards

1. Uneven Terrain / Falls
2. Vehicle Hazards
3. Remote Work / Working Alone
4. Manual Material Handling
5. Fatigue

Hazard Area	Potential Risk	Recommended Prevention / Controls	Recommended PPE	Follow-Up if Exposure Occurs or Incident Occurs	What to Do After an Exposure or Injury

Uneven Terrain / Falls	Slips, trips, falls, sprains, strains, fractures, head injuries, musculoskeletal injuries, fatigue-related incidents, and reduced mobility associated with uneven ground, loose rocks, steep slopes, wet surfaces, erosion areas, dense vegetation, poor visibility, or unstable footing commonly encountered in Southern California field environments, canyons, riparian areas, and wildland terrain	▪ Use established paths and designated access routes when feasible. ▪ Maintain situational awareness and visually assess terrain before walking, climbing, or descending slopes. ▪ Avoid rushing, running, or carrying loads that obstruct visibility. ▪ Use caution around loose rocks, wet surfaces, erosion areas, creek beds, unstable soil, or hidden holes obscured by vegetation. ▪ Implement a buddy system for difficult or remote terrain and maintain communication during field activities. ▪ Schedule work during daylight hours when possible and avoid high-risk terrian during adverse weather conditions. ▪ Ensure personnel are physically capable of assigned field activities and trained on field safety, situational awareness, and emergency response procedures. ▪ Take breaks as needed to reduce fatigue and loss of concentration	☐ High-ankle boots with appropriate traction ☐ Trekking poles ☐ Gloves ☐ Knee pads if kneeling ☐ Long pants ☐ Weather-appropriate clothing ☐ Headlamp/flashlight if low-light conditions may occur	**Uneven Terrain & Slips/Trips/Falls Protocol** **Immediate First Aid & Reporting** ▪ **First Aid:** Administer appropriate first aid immediately following an injury. ▪ **Report Promptly:** Report all injuries, near-miss incidents, unstable terrain conditions, or identified environmental hazards promptly to your supervisor. **When to Seek Immediate Medical Evaluation:** Seek medical care immediately—or contact Emergency Medical Services (EMS)—if any of the following occur: ▪ Head injury or loss of consciousness ▪ Suspected fracture or inability to bear weight ▪ Severe pain or marked swelling ▪ Dizziness or persistent symptoms	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Preserve relevant photographs, vehicle information, equipment, witness information, and other incident details when it is safe to do so. ☐ Review the field safety plan and implement corrective actions before resuming the affected activity. ☐ For life-threatening emergencies, call 911 immediately.
Vehicle Hazards	Motor vehicle collisions, rollovers, backing incidents, struck-by injuries, pedestrian injuries, equipment or cargo movement, mechanical breakdown, becoming stranded, fire, heat exposure, and delayed emergency response. Southern California-specific concerns include congested freeways, mountain roads, steep grades, desert travel, unpaved roads, blowing dust, wildfire closures, flash flooding, and limited cellular service.	**Recommended Prevention / Controls** ▪ Take breaks as needed to reduce fatigue and loss of concentration ▪ Only authorized drivers with a valid license may operate a vehicle for University business. ▪ Complete required UCR driver training and obtain any additional authorization required for vans, trailers, ATVs, UTVs, or specialty vehicles. ▪ Select a vehicle appropriate for the terrain, road conditions, number of occupants, cargo, and expected weather. ▪ Inspect the vehicle before departure, including tires, spare tire, brakes, lights,	**Recommended PPE and Safety Equipment** ☐ Seat belt for every occupant ☐ High-visibility vest when outside the vehicle near traffic ☐ Closed-toe, slip-resistant footwear ☐ Work gloves for cargo handling or roadside emergencies ☐ Eye protection when working around dust or debris ☐ Reflective triangles, warning lights, or other roadside warning equipment ☐ Vehicle emergency kit and first-aid kit	**Follow-Up if an Incident Occurs** ▪ Stop immediately in a safe location, activate hazard lights, and assess for injuries and continuing hazards. ▪ Call 911 for injuries, fire, hazardous-material release, traffic hazards, or an unsafe location. ▪ Do not move an injured person unless necessary to prevent additional harm. ▪ Do not enter traffic lanes unless they have been appropriately controlled. ▪ Follow UCR, law-enforcement, rental-vehicle, and insurance reporting procedures. ▪ Document the location, vehicle information, damage, road and weather conditions, and names of witnesses when it is safe to do so. ▪ Report mechanical problems, near misses, vehicle damage, and unsafe road conditions. ▪ Do not continue using a damaged vehicle until it has been determined safe. ▪ If stranded remotely, communicate your location and remain with the vehicle when safe unless the emergency plan directs otherwise.	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Preserve relevant photographs, vehicle information, equipment, witness information, and other incident details

		mirrors, windows, windshield wipers, fluids, fuel or charge level, seat belts, and emergency equipment. ▪ Review the planned route, road closures, weather, wildfire conditions, flood warnings, and alternate routes before departure. ▪ Do not drive on a road or trail that exceeds the vehicle's clearance, traction, load capacity, or intended use. ▪ Require seat-belt use by the driver and every passenger whenever the vehicle is moving. ▪ Follow posted speed limits and reduce speed for weather, visibility, curves, wildlife, pedestrians, loose surfaces, and unpaved roads. ▪ Do not use a handheld phone, enter information into navigation equipment, take notes, or perform other distracting tasks while driving. ▪ Program navigation and communication devices before moving. Pull over at a safe location when adjustments are necessary. ▪ Do not drive while impaired by alcohol, drugs, medication, illness, heat stress, or fatigue. ▪ Rotate drivers and schedule rest breaks during long trips. ▪ Secure tools, cylinders, coolers, samples, batteries, chemicals, and other cargo against shifting, falling, leaking, or becoming projectiles. ▪ Do not transport people in cargo areas or locations without approved seating and seat belts. ▪ Use a spotter when backing, maneuvering near people or equipment, or operating where visibility is restricted. ▪ Park on stable ground, set the parking brake, and	☐ Fire extinguisher when required for the vehicle or transported materials	**Seek Immediate Medical Evaluation or Call EMS For** ▪ Any significant collision or rollover ▪ Head, neck, chest, abdominal, or back injury ▪ Loss of consciousness or confusion ▪ Severe bleeding, breathing difficulty, or suspected fracture ▪ Pedestrian or bicyclist involvement ▪ Fire, smoke inhalation, or hazardous-material exposure UCR vehicle use must comply with the University's Use of Vehicles and Driver Authorization Policy.	when it is safe to do so. ☐ Review the field safety plan and implement corrective actions before resuming the affected activity. ☐ For life-threatening emergencies, call 911 immediately.

		chock wheels when appropriate. ▪ Never drive through floodwater, flowing washes, closed roads, wildfire evacuation zones, or areas restricted by emergency authorities. ▪ Carry sufficient water, communication equipment, maps, first-aid supplies, reflective warning devices, and other emergency supplies appropriate to the destination. ▪ Establish travel check-in and overdue-person procedures for remote trips.			

Remote Work / Working Alone	**Potential Risk**
	
	Delayed discovery of an injury or illness, delayed medical treatment or rescue, loss of communication, becoming lost or stranded, vehicle breakdown, unexpected weather, wildfire, wildlife encounters, equipment failure, personal-security concerns, and inability to obtain assistance during an emergency.
		Recommended Prevention / Controls
		
		▪ Complete a field safety plan and site-specific risk assessment before beginning remote work.
		▪ Determine whether working alone is appropriate based on the task, location, communication reliability, travel time, weather, and emergency-response capability.
		▪ Do not permit lone work for tasks involving fall arrest or restraint, confined spaces, swift or deep water, diving, hazardous wildlife handling, significant chemical hazards, high-risk equipment, extreme weather, or other activities requiring immediate assistance.
		▪ Use a buddy system whenever the consequences of an injury or communication failure could be serious.
		▪ Provide a responsible contact with the following information:
		  ○ Names and contact information for participants
		  ○ Destination and planned route
		  ○ Vehicle description and license number
			Recommended PPE and Safety Equipment
			
			☐ Task- and location-specific PPE
			
			☐ High-visibility clothing
			
			☐ Sturdy field footwear
			
			☐ Weather and sun protection
			
			☐ First-aid kit
			
			☐ Charged cellular phone or radio
			
			☐ Satellite communicator or personal locator beacon when appropriate
			
			☐ GPS device, compass, and offline map
			
			☐ Headlamp or flashlight with spare batteries
			
			☐ Emergency water, food, and shelter supplies
			
			☐ Whistle or other signaling device
				Follow-Up if an Incident or Missed Check-In Occurs
				
				▪ Initiate the established overdue-person procedure immediately after a missed check-in.
				▪ Attempt contact through all available communication methods.
				▪ Notify the supervisor, PI, field contact, site authority, or emergency contact as specified in the field plan.
				▪ Contact emergency services when the individual's location or safety cannot be confirmed within the established response period.
				▪ Provide responders with the individual's planned route, last known location, vehicle information, medical concerns, and available tracking information.
				▪ A lost person should stop, remain calm, communicate their location, and stay in a safe and visible location unless remaining there creates a greater hazard.
				▪ After the event, evaluate whether communication, staffing, equipment, check-in frequency, or route planning must be revised.
				
				UCR's Field Safety Program emphasizes advance planning, training, effective communication, and incident response.
					☐ Reporting & Notification Requirements (Applies to All Field Hazards)
					☐ After any work-related injury, illness, exposure, or near miss:
					☐ Notify your supervisor or Principal Investigator (PI) as soon as possible.
					☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report.
					☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider.
					☐ Preserve relevant photographs, vehicle information, equipment, witness information, and other incident details when it is safe to do so.
					☐ Review the field safety plan and implement corrective actions before resuming the affected activity.
					☐ For life-threatening emergencies, call 911 immediately.

		- Work activities - Departure and expected return times - Scheduled check-in times - Emergency contacts ▪ Establish a written overdue-person procedure describing who will initiate contact, when escalation will begin, and when emergency services will be notified. ▪ Test cellular, radio, satellite, or emergency-locator communication before beginning work. ▪ Do not rely solely on cellular service in canyons, mountains, deserts, or other remote Southern California locations. ▪ Carry a backup communication method when cellular coverage is unreliable. ▪ Carry maps or offline navigation information and do not rely exclusively on a single electronic device. ▪ Maintain scheduled check-ins. Report delays or route changes before deviating from the approved plan. ▪ Carry adequate water, food, medication, first-aid supplies, weather protection, lighting, and emergency equipment. ▪ Identify the nearest medical facility, emergency access point, ranger station, or staffed facility. ▪ Ensure at least one appropriately trained first-aid provider is available when required by the field safety plan. ▪ Stop work and leave the location if communication fails, weather deteriorates, fire or flood conditions develop, or another required control becomes unavailable.		

Manual Material Handling	**Potential Risk** Back injuries, muscle strains, sprains, overexertion, repetitive-motion injuries, shoulder or knee injuries, crush injuries, pinched fingers, cuts, dropped objects, and falls caused by lifting, lowering, carrying, pushing, pulling, loading, or unloading equipment and supplies. Risk may increase on uneven terrain, in heat, when working in awkward postures, or when carrying loads over long distances.	**Recommended Prevention / Controls** ▪ Stop work and leave the location if communication fails, weather deteriorates, fire or flood conditions develop, or another required control becomes unavailable. ▪ Eliminate unnecessary manual handling whenever feasible. ▪ Use carts, dollies, hand trucks, lifting straps, hoists, vehicle-mounted equipment, or other mechanical assistance. ▪ Reduce the weight or size of loads by dividing materials into smaller containers. ▪ Evaluate the load's weight, stability, sharp edges, temperature, and contents before lifting. ▪ Plan the lift and inspect the travel path and destination before moving the load. ▪ Remove trip hazards and confirm that gates, doors, and vehicle compartments are open before lifting. ▪ Keep the load close to the body and maintain stable footing. ▪ Lift with controlled movement. Avoid sudden jerking, reaching, bending combined with twisting, or lifting above shoulder height when feasible. ▪ Turn with the feet instead of twisting the torso. ▪ Do not carry loads that obstruct forward visibility. ▪ Use team lifting when mechanical assistance is unavailable and the load cannot be safely handled by one person. ▪ Designate one person to coordinate and count team lifts. ▪ Do not assume another person's lifting capability. Stop if any team member cannot safely continue. ▪ Avoid lifting heavy or awkward loads on steep, wet, loose, or unstable terrain. ▪ Rotate repetitive tasks and provide rest breaks. ▪ Secure equipment and materials during	**Recommended PPE** ☐ Work gloves appropriate to the material ☐ Safety-toe footwear when crushing hazards are present ☐ Slip-resistant footwear ☐ Cut-resistant gloves when handling sharp materials ☐ Eye protection when materials may break, spill, or produce debris ☐ Long pants or protective clothing ☐ Additional task-specific PPE based on the material being handled	**Follow-Up if an Injury or Near Miss Occurs** ▪ Stop the handling activity immediately. ▪ Place the load in a stable location without creating additional risk. ▪ Do not continue lifting through pain, numbness, weakness, or reduced movement. ▪ Provide appropriate first aid and obtain medical evaluation when indicated. ▪ Isolate damaged containers, leaking materials, or unstable loads. ▪ Evaluate load weight, equipment, route, staffing, and handling method before work resumes. ▪ Report dropped loads, equipment failures, strains, and near misses. **Seek Immediate Medical Evaluation or Call EMS For** ▪ Severe or worsening back, neck, shoulder, or abdominal pain ▪ Suspected fracture, dislocation, or crush injury ▪ Loss of movement or inability to bear weight ▪ Numbness, weakness, or tingling in an arm or leg ▪ Significant swelling, bleeding, or deformity ▪ Loss of bladder or bowel control following a back injury ▪ Injury involving hazardous or contaminated material Cal/OSHA recommends reducing force, awkward posture, and repetitive motion through improved manual material-handling practices.	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Preserve relevant photographs, vehicle information, equipment, witness information, and other incident details when it is safe to do so. ☐ Review the field safety plan and implement corrective actions before resuming the affected activity. ☐ For life-threatening emergencies, call 911 immediately.

		transport to prevent movement or falling objects. ▪ Provide task-specific training when personnel routinely handle heavy, awkward, or specialized materials. ▪ Request an ergonomic or safety evaluation when recurring handling tasks create significant strain or repeated symptoms.			
Fatigue	**Potential Risk** Reduced concentration, impaired judgment, slower reaction time, poor coordination, increased errors, heat illness, slips and falls, vehicle collisions, equipment incidents, and delayed recognition of changing field conditions. Fatigue may result from insufficient sleep, long workdays, early departures, extended driving, strenuous activity, heat, dehydration, altitude, illness, stress, or repeated days of field work.	**Recommended Prevention / Controls** ▪ Plan work schedules, travel, and staffing to provide adequate rest and recovery. ▪ Consider total duty time, including loading, travel, field activity, unloading, and the return drive. ▪ Avoid scheduling long or strenuous field activities immediately before or after extended driving. ▪ Rotate driving and safety-critical assignments when possible. ▪ Schedule regular rest, hydration, meal, and cool-down breaks. ▪ Use a buddy system to monitor reduced alertness, unusual behavior, poor coordination, and heat-illness symptoms. ▪ Encourage personnel to report fatigue before it results in an incident. ▪ Supervisors must modify the assignment, provide rest, arrange another driver, or stop work when a person is not able to work safely. ▪ Do not perform safety-critical tasks or drive when experiencing difficulty focusing, repeated yawning, heavy eyelids, drifting attention, poor coordination, or microsleeps. ▪ Do not rely on caffeine, energy drinks, open windows, loud music, or cold air as substitutes for sleep. ▪ Account for increased fatigue caused by heat, heavy PPE, respirator use, strenuous terrain,	**No PPE can eliminate fatigue.** Prevention depends primarily on work scheduling, adequate sleep, breaks, hydration, task rotation, monitoring, and stopping work when personnel cannot perform safely. **Supporting equipment may include:** ☐ Adequate drinking water ☐ Cooling equipment or shade ☐ Weather-appropriate clothing ☐ Communication equipment ☐ Emergency food and supplies ☐ Appropriate lighting for necessary low-light work	**Follow-Up if Fatigue or an Incident Occurs** ▪ Stop driving or performing safety-critical activity. ▪ Move to a safe location and notify the supervisor or field leader. ▪ Arrange rest, a replacement driver, modified duties, lodging, or alternate transportation. ▪ A fatigued driver should pull over at a safe location. A brief nap may temporarily improve alertness, but adequate sleep is the only effective correction for significant sleep deprivation. ▪ Evaluate whether heat illness, dehydration, medication, carbon monoxide, altitude illness, infection, or another medical condition could be contributing. ▪ Do not allow a person with confusion, altered behavior, collapse, or severe symptoms to remain alone or drive. ▪ Review work hours, staffing, driving distance, environmental conditions, and rest opportunities following a fatigue-related incident or near miss. **Seek Immediate Medical Evaluation or Call EMS For** ▪ Confusion, altered behavior, fainting, or loss of consciousness ▪ Chest pain or breathing difficulty ▪ Suspected heat stroke or severe heat illness ▪ Sudden severe weakness or loss of coordination ▪ Suspected carbon-monoxide exposure ▪ Fatigue associated with a collision or other significant injury NIOSH notes that fatigue can impair concentration, reaction time, and decision-making. Its guidance directs fatigued drivers to stop at a safe location rather than attempting to continue driving: NIOSH—Driver Fatigue on the Job.	☐ Reporting & Notification Requirements (Applies to All Field Hazards) ☐ After any work-related injury, illness, exposure, or near miss: ☐ Notify your supervisor or Principal Investigator (PI) as soon as possible. ☐ Report all work-related incidents, injuries, illnesses, exposures, and near misses through the UCR EH&S Incident Reporting System at ehs.ucr.edu/report. ☐ If medical evaluation or treatment is needed, follow UCR Workers' Compensation procedures and seek care through an approved Workers' Compensation medical provider. ☐ Preserve relevant photographs, vehicle information, equipment, witness information, and other incident details when it is safe to do so. ☐ Review the field safety plan and implement corrective actions before resuming the affected activity. ☐ For life-threatening emergencies, call 911 immediately.

		high elevation, and insufficient acclimatization. ▪ Arrange overnight lodging, an alternate driver, or other safe transportation when personnel cannot safely complete the return trip. ▪ Personnel experiencing persistent or unexplained fatigue should consult a healthcare provider or Occupational Health.			