UC Berkeley Field Safety Plan

Principal investigator	*Benjamin Blonder,*		
Field Site Location:	*Gothic, Colorado, and nearby*		
Activity Description:	*Alpine plant research (Mt. Baldy)*		
Plan Created for:	*Benjamin Blonder*	**Date of revision:**	*January 2024*
Date(s) of Travel:	*Summer 2024 (template plan)*		

A field safety plan serves as a tool to document your hazard assessment, communication plan, emergency procedures, and training. This plan should identify hazards, as well as precautions and actions taken to address and mitigate those hazards. Instructions:

1. **Complete this field safety plan: insert specifics for your site and operations, delete irrelevant sections.**
2. **Complete appropriate training for your site and operations (e.g. first aid, heat illness, task-specific training).**
3. **Obtain immunizations and prophylaxis for your destination, if applicable (schedule 8 weeks in advance).**
4. **Hold a pre-trip meeting with your group and/or supervisor to review your field safety plan, travel logistics, pack list (including first aid kit), personal safety and security concerns, and any remaining training needs.**
5. **Register trips more than 100 miles from campus via UC Away for travel insurance documentation, location-specific travel alerts via email, and emergency/travel assistance contacts. For international work, the Worldcue Trip Planner is available to assist with planning logistics, identify local services, and provide precautions regarding local hazards. Click on "location intel" and create a "trip brief." A mobile Worldcue app is also available after you register a specific trip/destination via UC Away.**

Site Information

Location	Latitude: 38.959158°N and nearby	Longitude: -106.9897676 °E and nearby
Site Information	*Various aspen forest sites within ~10 miles of Gothic, Colorado*	
Travel to Site	*Access is typically from a range of trailheads and parking lots, after which travel is on foot, partially on trails but typically off-trail on sometimes steep and loose terrain. All sites have been visited multiple times and the PI has extensive memories and notes about the safest and most effective access routes. Prior year field sheets also include notes about site-specific hazards.*	
Site Access	*Sites should only be accessed during snow-free conditions, and during daytime hours.* *Build in time to hike during daytime hours. Do not cross onto private property (e.g. private ranch land, or mine sites). There are field notes and maps of property boundaries on lab GPS units. Teams have in the past been detained by mine employees.* *Sites should never be accessed during lightning or thunderstorm activity. The site has good 4G cell phone service; you can use apps such as 'MyRadar' to get live radar coverage of the site and see when storms are likely to appear. Err on the side of caution and early departure.*	
Environmental Hazards	**Lightning** – Stop work immediately during thunderstorms where lightning is visible and/or when thunder is close by. Return to RMBL. Call off or skip leaving for fieldwork if storms are imminent. If you cannot leave the site, retreat to lower elevation and stay in medium- open forested areas. Avoid wet areas. Stay in lightning safety position until storm has passed. Ensure Garmin beacon is in known location among dispersed team members. Stay at least 10m from other people. Call 911 in event of any lightning strikes. Carry lightning monitor at all times, and keep on any time significant cloud cover or developing storms are present. Abort fieldwork immediately if lightning detected 6 miles or nearer. **Animal Encounter (mostly bears)** – If bear encountered: If at a distance, take a different path and leave the bear be. If at close distance, make noise and do not run; instead, move slowly away and speak in a low soft voice; If attacked, lay in the fetal position and protect head. Never approach cubs. If mountain lion encountered: make noise and make yourself as big as possible. **Sunburn** – the high elevation of the site means consistently high UV exposure. Always wear sunscreen, long sleeve shirt/parts, and sun-hat during work. Apply cool water, aloe or other cooling lotion to affected area if sunburn occurs. Don't forget sunscreen for your nose underside and lower back.	

	Dehydration –Always carry at least 2-3L of water and regularly drink large amounts. Eat foods with electrolytes (e.g. bananas). Take a break in the shade or indoors (in air conditioning) until recuperated. Drink plenty of liquids. Extreme cases: go to ER/ call ambulance. **High Altitude Sickness** – Allow body to acclimatize by gaining elevation slowly. Decrease elevation (e.g. Gunnison) if symptoms become severe. **Insect bites/stings** – Look out for paper wasp nests at ground to eye level – there can be many. Walk slowly and carefully. Carry first aid kit at all times with anti-histamines. Be aware of any pre-existing conditions and needs for students. Apply anti-itch ointment for flies. For bees: have epipen on hand and be familiar with its use if any crew members are known to be allergic to stings. If allergic, go to ER/call ambulance. If not, compress area with ice. **Physical injuries (e.g., broken limb**) – Carry first aid kit at all times. Be aware of any pre-existing conditions and needs for field crew. Go to ER/call ambulance if severe. Don't rush down from the field site – you can trip and fall especially on the off-trail component of the journey. **Lone working** Do not work alone if work can be delayed - only work alone if CRITICAL to project and with PI permission. Always carrying all safety equipment including the Garmin transmitter, take extra precautions with hiking and doing field work, make sure to establish pre-departure check-in with a safety contact, and check in with a safety contact immediately after returning from the field. In rare and unplanned cases when a Garmin transmitter is not available, carry mobile phone instead and restrict fieldwork to areas where cell service is nearby (eg main Baldy site) and on trails, also to daytime conditions only. **Tick-borne illness** – Conduct daily tick check after field work / change to new clothes after field work. If you find a tick on you that is in the process of biting, take a photograph or keep the tick (some carry disease some do not). Seek medical care if tick bite / rash occurs. **Wildfire** – Avoid fieldwork on Red Flag days which are also ones when wildfires are burning within 5 miles of field sites. In case wildfire smoke is spotted within reasonable distance of field sites or necessary access trails, cease fieldwork immediately and evacuate to safe (ideally lower elevation) location immediately; potentially not in the same location you began in. **Wildfire smoke** – Avoid fieldwork on days with AQI values above 250. Use discretion when AQI is above 150 and consider stopping fieldwork. **Slipping and falling onto sharp rocks or downed branches** – Step carefully and surely especially when undergrowth is high. Avoid placing feet on logs that are pointed downslope. Be especially careful with footing when plants or logs are slick (e.g. morning dew). Ensure first aid kit plus trauma supplies are carried when working off trail. **Cattle** – give cattle at least 100' distance (500' for bulls if seen) and approach from upslope to downslope if possible. Do not get between cows and any calves. Detour around animals when possible; if not, make a loud noise from a distance to encourage animals to move. Come back another day if encounters cannot be avoided. **Belligerent member of public** – Be prepared to explain research, its permitting by USFS, and its purpose to members of public. Be prepared for concerns related to limitation of free recreation on public land. Be prepared for concerns related to racism against non-white team members. In cases of conflict, employ de-escalation techniques (https://hub.tmlt.org/tmlt-blog/de-escalation- techniques-and-resources). If possible film the encounter. If serious threatened leave the area immediately regardless of impact on research or research infrastructure.
Security	*See above notes on 'belligerent member of public'.*
No Go Criteria	• Snow present • *AQI (actual or forecasted) above 150* • *Visible lightning or audible thunder at site* • *Current radar indicates thunderstorm will track past site in < 30 minutes* • *NWS forecast indicates <50% chance of 'rain/thunder'* • *COVID-19 positive test or other illness* • *No possibility of avoiding bees/wasps/cattle/bears or other hazards* • *Fear of safe access to the site (don't go anywhere you aren't comfortable)*

Expected Weather	*Summer weather is typically cool to warm; heavy thunder is possible in mid/late summer. Biting flies are common in midsummer. Cold wet rainy days are also possible.*
Drinking Water Availability	*Bring water from the field station; typically 3-4L per person per day especially on sunny or warm days. Always turn back early if water may run out.*
Access to Shade/Shelter	Most sites are forested and provide partial or full shade. There are no structures present in the forest.
High Heat Procedures	In forest clearings and low elevation sites, high temperatures can be experienced. Make sure to drink water at each site, and pause for shade breaks if team members show signs of fatigue, heavy sweating, anger/disorientation, or other heat injury symptoms (see below). Note if team members are not taking breaks to urinate, a potential sign of insufficient hydration. Turn back early and often, and never run out of water.

Emergency Services and Contact Information

Local Contact	*Brett Biebuyck, xxxxxx* **Lodging location:** *Rocky Mountain Biological Laboratory, xxxxxx*	**University Contact**	*Benjamin Blonder, xxxxxx* **Frequency of check ins:** *weekly, by email*
Emergency Medical Services (EMS)	*If cell phone service is available, call 911. If not, use the Garmin to activate the SOS feature. Make sure you have a clear sky view. If Garmin is not operational, hike back to the vehicle and an area with cell service. If it is not possible to make the distance and communication is not an option, move towards the nearest trail and then wait to be found. Try to place brightly colored objects nearby to increase the chance of being found.*		
Nearest Emergency Department (ED)	*The nearest serious medical supplies are in the shower house back room in Gothic (1.5 hour hike + 10 minute drive from the field site); the nearest urgent care is in Mt. Crested Butte a 15 minute drive from Gothic (12 Snowmass Road, 930AM – 430PM); otherwise in Crested Butte (216 6th St Suite #, 8AM – 5PM) 20 minute drive from Gothic. The nearest hospital and emergency room is in Gunnison (707 N Iowa Street), 45 minute drive from Gothic.*		
Cell Phone Coverage	**Primary Number:** *PI, xxxx* **Coverage:** Limited, absent at many research sites	**Satellite phone/device**	**Device carried?** ☒ Yes ☐ No **Type/number:** Garmin inReach; xxxxxxx
Nearby Facilities	Typically none at sites; plan to use the toilet outdoors.		

Check-in / response plan	*The field team leader must identify a local contact, either at field station (e.g. cabinmate, PI) or in personal network (e.g. friend/partner) who will not be going to the field site and who will be available at the expected return time. Before leaving for fieldwork the field team should communicate their vehicle license plate, team composition, expected route, and return time to this person.* ***Sharing the route plan (sites to be visited, in what order, from what trailhead) is critical in case a search effort must be mounted.*** *This document should be shared with them.* *If this return time is exceeded by more than 2 hours (and no message is sent via email or inReach), then that person will:* • *Make an effort to get in touch with the field team leader; if this fails,* • *Contact the PI* • *Contact the field station operations team (Brett Biebuyck) or PI, if onsite, to search for the person in the laboratory (GRC common room workstation), their cabin, and field station common spaces; if this fails* • *Ask a local contact at the field station to organize a search of the departure parking lot for the field team's vehicle; if this fails* • *Contact emergency services (Crested Butte police, 970-349-5231) and potentially Crested Butte Mountain Rescue) to organize a search party; if the team is not found within 4 hours,* • *Contact university risk services:* ○ *xxxxxxx* • *Contact Berkeley field safety:* ○ xxxxxx • *Contact each field team member's emergency contact to make them aware of the situation (information available via emailing or calling the PI)*
Side Trips	*Please read the lab code of conduct document regarding expected behavior standards during free time. You are welcome to spend your free time as you please, but please keep in mind the risks of outdoor recreation alone, and have a safety plan for whatever you decide to do.*
Participant Information	
Field Team/ Participants	Is anyone working alone? ☐ Yes ☒ No If yes, develop a communications plan with strict check-in procedures; if cell coverage is unreliable, carry a satellite communication device or personal locator beacon. Primary Field Team Leader: *TBD* Secondary Field Team Leader: *TBD* ☐ Field Team/Participant list is attached as training documentation ☐ Other attachment: e.g. course roster
Physical Demands	*Team members must be capable of living at high elevation (9500' base, 11800' field site). Daily hikes can require 6-8 miles of off-trail travel in hot and buggy conditions.*
Mental Demands	*The field station can be a high-pressure environment and cause some people to feel isolated or alienated. Field days can be long. The community near the field site is primarily white, which can be alienating or hostile to some people.*

First Aid Training & Supplies	The field team leader must have a wilderness first aid (or higher) certification. Field teams should at minimum carry: • Garmin inReach beacon • Mobile phone, charged • Extra food/water • Rain gear • Sunscreen • First aid kit • Trauma kit with QuikClot • Splint (hiking poles optional but recommended) • Benadryl • Epipen (if available) • Medical documents for all field team members
Immunizations or Medical Evaluation	*None, but prior experience at high elevation can be reassuring.*

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Equipment and Activities – Consult with EH&S for specific training and requirements.	
Research Activities	*Surveying aspen forest plots*
Field Transportation	*Personal vehicles are used with reimbursement for mileage. 2WD with low clearance is suitable except for a subset of sites that are noted in other lab documents.* UC Berkeley Risk Services manages a variety of insurance programs. Please consult their website for assistance: **riskservices.berkeley.edu/insurance-programs**
Research Tools	*Hammer, nails, camera, pencil, paper. There is a risk of hammering fingers by accident; care can be taken.*
Other Research Hazards	*Tripping and falling on steep terrain, or onto a sharp branch, is the main hazard. We will provide training on careful ways to walk through the forest. Going slowly and with hiking poles is the safest option. If you are doubtful about your ability to navigate a terrain feature, let the team leader know so an alternate plan can be made.* *Paper wasps are a common hazard – walk carefully and know how to identify a nest.* *Bears have been seen on occasion.* *Lightning storms are common in the afternoons, but sometimes also in the morning. Keep a close eye on the forecast, use radar apps when cell service is available, and plan ahead with routes to avoid being caught in exposed high elevation sites.* *It is always better to come home early and safe than to get 'one more site'.* *Make sure to keep car keys in a secure inner pocket – due to the off-trail nature of the project, it can be near impossible to retrace routes for lost items.*
Personal Protective Equipment	Required—sunscreen, sunglasses, sun hat, adequate water and food, rain gear, warm layers, first aid supplies (see above) Recommended – hiking poles, white gloves (to keep sun off hands), insect repellent or bug net
Additional Considerations	
Insurance	Review the University Auto Insurance Policy: **riskservices.berkeley.edu/insurance-programs/auto** (Please note, coverage differs for paid staff versus students)
International Activities	Check with the Global Engagement Office (GEO) regarding required approvals. Visas, permits, finances, import/export controls, transportation of specialized equipment, and data security must be considered. See UC Global Operations (ucgo.org) or contact the Office of Legal Affairs or Research Administration & Compliance for further guidance
Personal Safety & Security	Personal safety risks during free time should be considered and discussed in advance, e.g., alcohol or drug use, leaving the group, situational awareness, sexual harassment, or local crime/security concerns. Review expectations and set the tone for a safe, successful trip. **High Risk Travel: UC Support Services** Check the **U.S. State Department** travel site for current travel alerts and you may use the **Worldcue Trip Planner** 'Location Intel' tab to generate a security brief for your destination. UC also offers pre-travel security risk planning, in-country security risk assessments, and contingency planning for those traveling to high risk destinations. As soon as you know you will be travelling to a high risk area, contact Risk Services or Phillip Van Saun (UCOP Risk Services Director of Risk, Security & Resilience) directly at pvansaun@ucsd.edu to arrange assistance.
Campus Contacts	
UCPD	xxxxx,
University Health Services (Tang Center)	**Faculty/Staff:** xxxx **Students:** xxxxx
EH&S	xxxxx

UC Travel Emergency Assistance	Campus Risk Services: xxxx
Report Injuries	Call EH&S at xxxxx and use the **Employer's Report of Injury**. For non-paid students use the **Student Accident Report Form**.

First Aid Reference – Signs & Symptoms of Heat Illness		
Signs & Symptoms	**Treatment**	**Response Action:**
HEAT EXHAUSTION • Dizziness, headache • Rapid heart rate • Pale, cool, clammy or flushed skin • Nausea and/or vomiting • Fatigue, thirst, muscle cramps	1. Stop all exertion. 2. Move to a cool shaded place. 3. Hydrate with cool water.	Heat exhaustion is the most common type of heat illness. Initiate treatment. If no improvement, call 911 and seek medical help. Do not return to work in the sun. Heat exhaustion can progress to heat stroke.
HEAT STROKE • Disoriented, irritable, combative, unconscious • Hallucinations, seizures, poor balance • Rapid heart rate • Hot, dry and red skin • Fever, body temperature above 104 °F	1. Move (gently) to a cooler spot in shade. 2. Loosen clothing and spray clothes and exposed skin with water and fan. 3. Cool by placing ice or cold packs along neck, chest, armpits and groin (Do not place ice directly on skin)	**Call 911 or seek medical help immediately.** **Heat stroke is a life threatening medical emergency. A victim can die within minutes if not properly treated. Efforts to reduce body temperature must begin immediately!**

Signature of PI/Supervisor:

I acknowledge this safety plan has been prepared for field work under my supervision.

Name	Signature	Date	Phone Number
Benjamin Blonder	BB	1/15/24	xxxxxxxx

Field Team/Participant Roster - Training Documentation

I verify that I have read this Field Safety Plan, understand its contents, and agree to comply with its requirements.

Name/Phone Number	Signature	Date	Emergency Contact/Phone Number