UVA EVSC Field Safety Plan

Field Site Location:	*Descriptive name of research location (e.g. Shenandoah Valley, VA; Blandy Experimental Farm)* *Coastal Research Center (CRC) LAGOON*		
Activity Description:	*Type, length, and purpose of activity (e.g. hiking 3-4 miles, collecting specimens, etc.)*		
Plan Created for:	*Name of Research Group / Course / Trip Leader* *LTER scientists and students and other visitors of the CRC*	**Date of revision:**	*Mo-Day-Yr* *5-12-2022*
Date(s) of Travel:	*Start date, duration, expected return to campus* *To be completed individually*		

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. As you complete your plan, be mindful in considering the unique safety concerns that can apply to students with marginalized racial, sexual, and gender identities.

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. **Share via email with all participants in the field group to allow them to review, post questions, and evaluate risk for themselves.**
5. **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.**

Site Information		
Location	Latitude: **37.28988**	Longitude: **-75.92566**
Site Information	*Elevation, terrain, environment.* *Land type: federal/state/private* Research sites surrounding the CRC and frequented by LTER researchers are coastal and low-lying with little elevation gain. Most research sites are owned by the Nature Conservancy, but island sites can be verified against www.exploreourseaside.org. Subtidal sites are regulated by VMRC; some oyster reefs are privately leased. Terrestrial and intertidal sites are permitted by DWR. Some mainland sites are on private property.	
Travel to Site	*How will participants get to the field site? Note any dangerous roads, conditions. Are there racial symbols, such as confederate flags, xenophobic signs, etc. along the route?* The CRC is on the Eastern Shore of VA, which is accessed from the south via the Chesapeake Bay Bridge Tunnel, which is a toll bridge and may have restricted access in inclement weather (www.cbbt.com). The CRC can only be accessed by car along a single access point to the CRC, through the small town of Oyster, VA. Visitors will encounter Confederate flags and other bigoted symbols. The facility is located within a small neighborhood in a rural region. Deer and farm equipment can pose hazards while driving. Occasional flooding may occur on seasonal high tides.	

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Site Access	*Are there any particular restrictions or challenges to accessing site? Note any alternate routes or suggested parking areas; gate access codes, etc. Make special note if isolated or remote.* See bridge restrictions in the travel section (above). The facility is handicap ADA approved (including an accessible suite, handicap parking, and ramps) Does the site or facility have a restroom or access to drinking water? Sites at Brownsville Preserve and GATR tract are gated; correspond with staff for access codes.
Environmental Hazards	Hazards in our study region include exposure to wind, sun, extreme temperatures, potentially unexpected thunderstorm events, and biological hazards. Heat stroke and exhaustion, dehydration, and hypothermia are all possible in terrestrial and marine field conditions. Stingrays, small sharks, jellyfish, and biting insects (flies, mosquitoes) are often encountered, as well as ticks which can carry tick-borne diseases including Lyme Disease and Alpha-GAL Syndrome. Other natural hazards include poison ivy, sharp oyster shells and barnacles, and pathogenic bacteria (*Vibrio*) associated with cuts from these objects. There is a possibility of sharp objects around the lab (e.g. glass) and in the field (e.g. PVC edges, wire, cut zip ties). Physical injuries are possible when working with heavy equipment. The shark sighting response protocol should be used if a shark is spotted during lagoon research: https://myuva-my.sharepoint.com/:w:/g/personal/pbe8et_virginia_edu/EVFCqDIws7ZFnuj5_k1_LUIBPSIIJkmuhCqAHXmuO6vFRw?e=irWcdD Insect repellent and permethrin are available to all researchers to mitigate insect bites. Staff coordinate weather forecasts from multiple sources to avoid working in unsafe weather conditions. Sunscreen, wetsuits, personal flotation devices (PFDs/life jackets), winter coats, and limited other temperature gear are provided. Measures are taken to ensure that all researchers going into the field are properly prepared for potential conditions, and researcher health is assessed by staff throughout field days wherever possible. Becoming cold or experiencing hypothermia is a risk even in the warm months when working for long periods in water. This resource provides guidance on remaining warm while working in water: https://www.scubadiving.com/how-to-stay-warm-diving-in-any-water-temperature. If you are not able to stay safely or comfortably warm using the gear and steps suggested, including wearing fleece and wool that are warmer when wet and a windbreaking layer, consider getting a thicker wetsuit or shortening your field days to reduce your time in the water. If, after trying these recommendations, you still need help finding ways to stay warm while completing your research, please reach out to station staff and/or your PI so that we can discuss additional options.

Hypothermia Chart

IF THE WATER TEMPERATURE (F) IS:	EXHAUSTION OR UNCONSCIOUSNESS	EXPECTED TIME OF SURVIVAL IS:
32.5	Under 15 Minutes	Under 15 - 45 Minutes
32.5 - 40.0	15 - 30 Minutes	30 - 90 Minutes
40.0 - 50.0	30 - 60 Minutes	1 - 3 Hours
50.0 - 60.0	1 -2 Hours	1 - 6 Hours
60.0 - 70.0	2 - 7 Hours	2 - 40 Hours
70.0 - 80.0	3 - 12 Hours	3 Hours - Indefinitely
OVER 80.0	Indefinitely	Indefinitely

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	Hazards can arise during boating; for example, through sudden stops when running aground. Basic guidance on what to do in case of a boating emergency is provided here: https://www.safeboater.com/learn-the-rules/emergency-preparedness.html Gloves are provided and shoes are required in all research and field spaces to reduce injury from field equipment, including boat engine equipment, and sharp natural objects. Researchers are instructed in safe approaches for exiting boats and working among marine hazards.While moving through the seagrass meadows, researchers are instructed to slide their feet along the bottom instead of picking up feet while walking to mitigate the risk of stingrays. Potential exercises for boating incidents: Getting unconscious person back in the boat: 1 person https://www.youtube.com/watch?v=AiVbmpdQ2Ag https://www.youtube.com/watch?v=P3WqY69Q8JQ&feature=youtu.be SSI's two persons small boat rescue https://youtu.be/dkg3kc3AALw SSI ladder rescue (two persons) https://youtu.be/o3Md0P5ue1g Lifejacket rescue over the transom https://youtu.be/MueOU3ixQQI
Security	*Is the field site located on private property? If so, be sure the owners are contacted and approve of the proposed trip. Owners should be contacted and reminded the day before arrival and made aware of the number of participants to expect on the property.* *Is there a high risk for harassment or violence? Note intended mitigation measures; discuss prior to trip. For international travel, check the U.S. State Department travel site for current travel alerts and look up the security rating for your destination via the Worldcue Trip Planner.* The field station is located on UVA property. Unoccupied dorms are locked; keys are provided through a lockbox (code provided before check in). The lab is locked when unoccupied; a code to the front door can be acquired from staff. The facility is lighted at all times. Random violence and theft are rare in our region. Incidents of harassment and violence on site are very rare. Any that occur should be reported to station staff. In case of emergency, you can call or text 911. For non-emergency assistance with unsafe situations, users may contact the Northampton County Sheriff's office (757) 678-0460 (David Doughty, Sheriff) or dispatch (757) 678-0458.
No-Go Criteria	*What are the conditions under which approach to - or activities at - the site should be stopped or canceled? e.g. heavy rains, electrical storms, snow, temperatures > 100 degrees, within 2 hours of high tide, wave heights over 1 meter, etc.* *For complex trips, consider using the GAR Risk Management Model.* All activities are canceled when there are thunderstorms. Field work is restricted to daylight hours. Boats cannot leave the dock until sunrise. All boats must be back to the dock one hour before sunset. Boat trips will be canceled under the following conditions: thunderstorms, heat lightning, heavy rain, winds > 15 mph or gusting > 25 mph, heavy fog, ground swells. If combined air and water temperatures do not also exceed 100°F, field work involving any amount of submersion in the water is not advised and only allowed on a case-by-case basis with proper PPE and safeguards in place to prevent hypothermia. Fieldwork off the boat on submerged intertidal oyster reefs.

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	Access to Brownsville Forest Disturbance Experiment is prohibited in high winds, and discretion should be used when at this site to mitigate risk of falling trees. Operate at this site in pairs (or more) where possible, and check out with staff by text if visiting alone.
Expected Weather	*Note extreme conditions that could impact the trip or require additional planning, (e.g. high heat, wind, rain, snow, approaching storm).* Trips may be impacted by weather conditions (thunderstorms, heavy wind and rain) and boat trips are often planned around the tides (e.g. most work is carried out at low tide, and boats may be delayed returning to the station if they get stranded in shallow water). Temperatures in the summer can exceed 100 °F; winter temperatures fall below freezing. Extreme temperatures required additional consideration.
Access to Drinking Water	☐ Plumbed water available ☐ Water cooler with ice provided (when temperatures exceed 95 degrees) ~~☐ Bottled water provided~~ ~~☐ Natural source and treatment methods (e.g. filtration, boiling, chemical disinfection~~): **Please note:** review OSHA guidelines for heat-related illness identification and first aid
Access to Toilet	☐ Facility has ADA compliant toilet ☐ Facility has non-compliant ADA toilet ☐ Facility does not have a toilet ☐ Toilet at boat ramp ☐ No toilet in field ☐ Wag bags ☐ Other:
Access to Shade/Shelter	If forecast exceeds 80°, shade **must be provided** by natural or artificial means for rest breaks. ☐ Building structures ☐ Trees ☐ Temporary Canopy/Tarp ☐ Umbrella ☐ Vehicle with A/C ☐ Boat t-tops and biminis ☐ Other:
High Heat Procedures	Required when temperatures are expected to exceed 95° F: If possible, limit strenuous tasks to morning or late afternoon hours. Rest breaks in shade must be provided at least 10 minutes every 2 hours (or more if needed). Effective means of communication, observation and monitoring for signs of heat illness are required at all times. **Pre-work safety discussion required.** ☐ Direct supervision ☐ Buddy system ☐ Reliable cell or radio contact ☐ Other:

Emergency Services and Contact Information

Local Contact →	*Name, address & phone #, may be a local colleague/institution, reserve manager, USFS office, etc.* *Boat and terrestrial leads are required to check out with a land contact and check back in at a prearranged time. Crews left alone at field sites are required to check in with their boat lead hourly or at an otherwise pre-arranged time or interval.* **Lodging location:** *name, address, phone #*	**University Contact →** *Someone not on the trip. Provide them with a copy of this plan.*	*Name, number, email; may be a Professor/PI, department contact, supervisor back on campus, etc.* **Frequency of check ins:** *daily, at end of work day, etc.* *To be completed by individual research groups.*
Emergency Medical Services (EMS)	*Procedures for contacting emergency medical services.* Call or text 911 or Eastern Shore EMS: 757-678-0411 For more minor incidents: Cape Charles Rescue Service (757-331-2392) and Cheriton Volunteer Fire Company (757-331-1555)		
Nearest Emergency Department (ED)	*Evacuation plan and transportation options to the nearest Emergency Department; include estimated transport time, contact information and driving directions from the site to the nearest provider of emergency medical care. Attach map with specific directions.* Closest and for most minor field accidents (e.g. no heavy bleeding):		

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<table>
<tr><td></td><td colspan="3">
- Cape Charles Rescue Service
  - 22215 South Bayside Road, Cheriton, VA 23316 (7 min from field station, right off of Rt 13 near the Food Lion)
  - Phone 757-331-2392
- Cheriton Volunteer Fire Company
  - 4083 Sunnyside Road, Cheriton, VA 23316 (5 min from field station down Sunnyside Road, near the 2 churches)
  - Phone 757-331-1555

For larger emergencies:

Riverside Shore Memorial Hospital: (757) 302-2100, located 40 minutes North on Rt 13
https://www.riversideonline.com/shore/
</td></tr>
<tr><td>Cell Phone Coverage</td><td>Primary Number:
Coverage: good, spotty, none
Nearest location with coverage:</td><td>Satellite phone/device</td><td>Device carried? ☐yes ☐no
Type/number:</td></tr>
<tr><td>Nearby Facilities</td><td colspan="3">What facilities are available at or near the site: restrooms, water, gas, public phone, store? If not, where are the nearest services along the route?
Potable water, landline phones, and non-gendered single-stall restrooms are available throughout the facility. Groceries and medical services are available within 10 miles. Nearby resources, like grocery stores and medical centers, are listed on our website: https://www.abcrc.virginia.edu/siteman2/index.php/user-resources/.</td></tr>
<tr><td>Side Trips</td><td colspan="3">Are side trips planned or allowed during free time? Before or after the planned activities? Are there restrictions, specific rules, or expected code of conduct?
The CRC does not restrict side trips.</td></tr>
<tr><td colspan="4">Participant Information</td></tr>
<tr><td>Field Team/ Participants</td><td colspan="3">Is anyone working alone? ☐ ~~Yes~~ X No Field work should never be completed alone. If other assistance cannot be found, contact CRC staff.
If no: describe the buddy-system to be implemented
All researchers should work at least in pairs. All excursions should be documented on the ‘Float Plan Board’ on the back hallway of the CRC; this should include a ‘land contact’, who is the person keeping track of your safe return
Boat leads (including student-lead crews) and island crews carry EPIRB emergency beacons for calling the Coast Guard. Loaner cell phones are also available for those who need them.
If yes: describe the communication plan, which should include strict check-in procedures. If cell coverage is unreliable, will participants be provided a satellite communication device or personal locator beacon?
Staff may on rare occasions perform drop-offs or quick field retrievals solo on boats. Extra efforts are taken in these instances to coordinate and check-in regularly with other staff members. EPIRB emergency beacons are always carried in these and other situations.

Primary Field Team Leader: Name, phone number
Secondary Field Team Leader: Name, phone number
☐ Field Team/Participant list is attached as training documentation
☐ Other attachment: e.g. course roster</td></tr>
<tr><td>Physical Demands</td><td colspan="3">List any physical demands required for this trip and training/certification provided. e.g. diving, swimming, hiking, climbing, high altitudes, respirators, heights, confined or restricted spaces, etc. (consult with EH&S regarding appropriate training & documentation).</td></tr>
</table>

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	Physical demands depend on the specific work completed. Wading, swimming (in shallow water), and carrying cumbersome gear are often required. To be further completed by individual lab groups.
Mental Demands	*List any unique mental demands required for this trip, e.g. long travel days, high stress environments, different cultural norms, etc.* *Resilience, patience, adaptability are often required due to shifting weather conditions and the busy research environment.*
First Aid Training & Supplies	OSHA requires at least one trained person (with current certification) for work at remote sites. CPR also recommended. *List team members trained in first aid and the type of training received.* Location and description of group medical/first aid kit: *Who is carrying it, where is it stored. Brief description of contents.* First aid kits are provided in all lab trucks and boats. A first aid kit is located in the front hallway of the lab building; an AED is available in the adjacent hallway. If any supplies are missing, staff have spare supplies or can reorder them.
Immunizations or Medical Evaluation	*List required immunizations/prophylaxis or required medical evaluation, if applicable.* For travel-related immunizations or medical advice, contact the UVA International Travel Clinic at 434-982-3915 8 weeks prior to your trip. For required or recommended personal protective equipment related to your research protocol, contact the UVA Occupational Health Services at 434-297-6379 (e.g. asbestos, first aid certifications, respirators, etc.)

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Equipment and Activities – Consult with EH&S for specific training and requirements.	
Research Activities	*Briefly describe the goal of your field operations, e.g. collection of samples, observation of animals/environment, interviews with human subjects, etc.…* To be completed by individual lab groups
Field Transportation	*What vehicles will be used during field operations? e.g. chartered boat, paddle craft, car, ATV, truck with trailer, snowmobile, chartered plane or helicopter, etc. Note any required characteristics such as minimum clearance or all-wheel drive, snow tires etc.* Mainland sites and boat launches are accessed by personal vehicles, university vehicles, or station trucks. Staff are responsible for operating and authorizing usage of four flat-bottomed skiffs for use in marine field work and accessing island sites. Four trucks are available in the UVA fleet with prior staff permission for those employed by UVA only - this includes faculty and graduate students but not REUs. Kayaks are available for recreational use near the lab. UVA Office of Property & Liability manages a variety of insurance programs. Please consult their documentation on insurance coverage for assistance.
Research Tools	*Briefly describe tools or equipment that will be used to access the research site or during research activities. Indicate specific training required before use, e.g. sharps (knives, razors, needles), hand tools, chainsaws, power tools, heavy machinery, tractors, specialty equipment, firearms; lasers, portable welding/soldering devices; other hazardous equipment or tools.* Equipment is not required to reach most research sites. To be completed by individual lab groups
Other Research Hazards	*Describe other potential research-associated hazards e.g. boating hazards, handling or shipping hazardous materials (chemical, biological, radiation, and explosives), handling animals, diving, snorkeling, climbing or working at heights, difficult terrain, rigging; shoring/trenching, digging/entering excavations, other confined spaces; drone use.* Sun exposure Sharp oyster reefs and handling of oysters. We fly drones over the lagoons and marshes. Some amount of chemical usage for preservation. A limited amount of climbing on towers. Getting on and off the boat. Marsh and mudflat environments – navigating the mud and avoiding getting stuck (have a buddy and tools to get yourself out). Running the boat aground in shallow water environments and work scheduled during low tides. To be completed by individual lab groups.
Personal Protective Equipment	Required—*e.g. boots, waders, safety glasses, hardhats, harness, hardhat, PFDs, EPIRB etc.* Recommended – *e.g. wetsuit. walking sticks, gloves, long pants, hats, insect repellant, sunscreen* *What equipment will be provided and what are participants expected to provide for themselves?* Required: PFDs (life vests) while underway on the boats (provided by the CRC), shoes around the facility, proper PPE. Close-toed shoes when on boats and while working with laboratory chemicals. Close-toed shoes such as dive booties/boots/sneakers when on boats, walking around oyster reefs, mudflats, seagrass meadows, and marsh. Gloves for any type of oyster work. Mudders (limited supply provided by the CRC), walking poles, and or sled (provided by the CRC) for marsh and mudflat work. Recommended: Sunscreen (provided by the CRC), insect repellent (provided by the CRC), long sleeves and pants, hats and sunglasses, change of clothes for water work, cold weather gear and float coats (limited supply provided by the CRC) that are appropriate for cold weather.

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	Cold weather gear Change of clothes Recommended gear for the nearby ecosystems is described here: https://docs.google.com/document/d/1E0luZX5GvZGZ0xjR5AsfRi7_yOplsVoou0PIrO6f5YA/edit?usp=sharing
Additional Considerations	
Insurance	Review the University Auto Insurance Policy: https://uvapolicy.virginia.edu/policy/FIN-006#Rental_Veh Researchers from other institutions should verify their institutional insurance policies.
International Activities	N/A
Personal Safety & Security	Personal safety risks during free time should be considered and discussed with all participants in advance. These risks may include alcohol or drug use, leaving the group, situational awareness, sexual harassment, local crime/security concerns, among others. Establish and review expectations for the group and set the tone for a safe, successful trip. Use the buddy system for outdoor recreation (make sure someone knows where you are going and when to expect you back). Wear high visibility gear on roadways. All visitors must abide by UVA drug and alcohol policies while on site: https://www.abcrc.virginia.edu/siteman2/index.php/codeofconduct/. *Off site expectations should be set by individual research groups.* **High Risk Travel:** 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.
Campus Contacts - UVA resources are below. Researchers from other institutions should add their campus information.	
UVAPD	434-924-7166; https://uvapolice.virginia.edu/
University Health Services	uvahealth.com **Faculty/Staff:** 434-243-0075 (Occupational Health- UVA WorkMed) **Students:** Student Health and Wellness 434-924-5362, after hours call 434-297-4261
EH&S	http://ehs.virginia.edu/
Travel Emergency Assistance	Enroll in UVA Travel Assistance Program (no cost for faculty and students). Enroll by contacting the Procurement and Supplier Diversity Services. U.Va. Faculty and staff on University business may refer to the Office of Property & Liability Risk Management/International Insurance for information about the insurance protection that is in place for them while traveling outside of the United States.
Report Injuries	Complete the employee Incident Report Form; alert station staff to any incidents (including bodily injury or damage to equipment or the facility).

First Aid Reference – Signs & Symptoms of Heat Illness		
Signs & Symptoms	**Treatment**	**Response Action:**
HEAT EXHAUSTION ● Dizziness, headache	1. Stop all exertion. 2. Move to a cool shaded place.	Heat exhaustion is the most common type of heat illness. Initiate treatment. If no

● Rapid heart rate ● Pale, cool, clammy or flushed skin ● Nausea and/or vomiting ● Fatigue, thirst, muscle cramps	3. Hydrate with cool water.	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!**

Include any additional resources: route/location maps, photos of general terrain and areas requiring extra caution, etc.

General risk management advice is available through the UVA Office of Property & Liability Risk Management (434-924-3055).

Pre-departure checklist:

- ❏ **Field site has been investigated and thoroughly evaluated for physical, mental, and racial safety concerns**
- ❏ **Participants have reviewed and signed field safety plan; emergency contact info collected**
- ❏ **All required approval forms, licenses, etc. have been obtained and printed – ensure that all project personnel have copies of sampling and access permits.**
- ❏ **Station and site liability waivers are complete and on file for all participants (station staff can clarify appropriate forms)**
- ❏ **Transportation details and documentation are in order - including vehicle rentals and drop-off details, if applicable**
- ❏ **Communication plans for field work are established; any satellite devices have been gathered**
- ❏ **Research tools and necessary PPE have been obtained**
- ❏ **Necessary trainings have been completed by all participants**
- ❏ **First aid kits are stocked**
- ❏ **Emergency plan is established, including group communication and driving route to nearest medical center**

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Signature of PI/Supervisor:

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

Name	Signature	Date	Phone Number

Field Team/Participant - Training Documentation

I verify that I have read this Field Safety Plan, understand its contents, and agree to comply with its requirements. I will disclose to the PI/supervisor any pertinent health information (e.g., epilepsy, diabetes, severe allergies, etc.)

Name/Phone Number	Signature	Date	Emergency Contact/Phone Number