



Safety Guidelines for Field Work

Syracuse University

DRAFT v. 1 (Fridley Lab; primary author Robert Griffin-Nolan, 6-24-21)

Adapted from UT-Austin and Michigan Tech

Introduction

Fieldwork is an important component to scientific research Syracuse University. This guide is intended to help SU students, staff, and faculty plan and prepare for the health and safety risks associated with field research activities locally, nationally, and abroad. The guide is organized into four sections. **Section 1** covers activities that all field researchers need to do to be prepared for work in the field. **Section 2** addresses specific hazards that may be associated with field work in North America with a description of their cause, symptoms, and methods of prevention. All hazards are not listed here, so some additional research may be needed to identify hazards specific to each study location. International field work requires additional precautions which are outlined in **Section 3**. Some researchers may experience identity prejudice while in the field. Specific guidelines for responding to and reporting these incidences as well as precautions for avoiding potentially dangerous situations are outlined in **Section 4**. **Section 5** provides additional resources related to field work safety.

1. General Field Safety Guidelines

Before you leave: Prepare a written Safety Plan of your trip before you leave. Provide a copy to each member of your team and leave a copy with a responsible party. Include the following:

1. Your itinerary: Locations, arrival and departure dates, names, addresses and phone numbers of all fieldwork participants.
2. Contact person: Name and phone number of a person to contact in case of emergency: a spouse, parent or friend, as well as a campus contact.
3. Activities: General nature of activities being conducted.
4. Local contacts: Names of people at or near your fieldwork site who can reach you if necessary, as well as your check-in/check-out arrangements.
5. Risk assessment: Potentially hazardous plants, animals, terrain and weather conditions where you plan to work.

A Safety Plan template is below. The Safety Plan should be shared with all the members of the field research team and kept on file with the PI. Multiple trips to the same location can be covered by a single Safety Plan.

Syracuse University Field Research Safety Plan

Principle Investigator: _____

Department: _____

Phone number: _____

Email address: _____

Dates of Travel: _____

Location of Field Research:

Name: _____ Phone: _____

Address or coordinates: _____

City: _____ State: _____

Country: _____

Nearest Hospital: _____ Emergency phone code (e.g. 911 in the US): _____

Field Research: (Include a brief description of the field work.)

Contact #1:

Name: _____

Address: _____

Phone: _____

Email: _____

Contact #2:

Name: _____

Address: _____

Phone: _____

Email: _____

Emergency Procedures: (Include detailed plans for field location including evacuation and emergency communication)

First Aid Training: (List any members who have first aid training and training type).)

Required Training: (List all required training, e.g. chainsaw training, SOP for a specific chemical, etc.)

Physical Demands: (List any physical demands required for this field research, e.g., Climbing, Temperature Extremes, High Altitude).

Risk Assessment: List identified risks associated with the activity or the physical environment (e.g., extreme weather, wild animals, endemic diseases, firearms, chemicals). List appropriate measures to be taken to reduce the risks	
<i>Identified Risk</i>	<i>Control of Risk</i>
1.	
2.	
3.	
4.	
5.	
6.	
7.	
8.	
9.	
10.	
Field team membership (names and phone numbers):	
Packing List:	

Preparation for Field Work: Assemble safety provisions and check everything before departure. Examples of safety provisions may include the following, although this list will vary depending on the type of work. For more specific information on the safety provisions needed, talk to your supervisor or SU Environmental Health and Safety Office (315.443.4132; ehss@syr.edu). Additionally, ensure that all required specific

training on field equipment or chemicals be completed and filed. Provisions may include:

1. First aid kit and manual. These should be taken on every trip, and all participants should know how to use it.
2. Compass, map, and whistle if going to a remote location
3. Protective clothing (sun hat, bug jacket, etc.)
4. Water purification tablets or filter devices
5. Vehicle emergency kit
6. Flashlight
7. Personal protective equipment for fieldwork activities (safety glasses/goggles, gloves, hard hat, sturdy work, boots, etc.)
8. Copy of Field Research Safety Plan
9. Apparel with SU logo/affiliation (yellow Biology safety vests are available in the Biology Office, contact Katherine Geraghty (kygeragh@syr.edu)).
10. Personal identification (Driver's license, SU ID)
11. Know where you are staying if trip is overnight
12. Identify where nearest cell tower for best cell service is (alternatively, ask your supervisor about a satellite phone or walkie talkie)
13. Identify the nearest hospital or medical facility in case of an emergency.

During Field Work:

1. Fieldworkers should check in with their supervisor regularly and should notify the supervisor of any changes in schedule or points of contact.
2. After each day's work, fieldworkers should notify the contact when they return.
3. The contact(s) should be provided with the telephone numbers of people to call (group office, university contact, etc.) if the workers do not return or report within a predetermined interval of the scheduled return time. Do not rely on cellular phones. There are still many locations without cell phone signals.
4. Avoid working alone. Always make sure your supervisor knows where you will be and when you will return.

Medical Care: Field workers should seek medical attention in the event of an accident or injury. Medical attention will be made available to employees whenever an employee develops signs of illness or symptoms associated with their work.

Medical consultations and examinations shall be provided without cost to the employees, without loss of pay and at a reasonable time and place, and be administered by or under the direct supervision of a licensed physician. If a university employee suffers a job-related injury or illness, they must notify their supervisor within 24 hours. The employee's department/supervisor must

complete an incident report. If the injury is “serious” (amputation, permanent disfigurement, overnight hospital stay, fatality) notify your supervisor immediately.

2. Physical and Environmental Hazards

There are many general physical and environmental hazards that exist in nearly every location worldwide. All field researchers, regardless of the work location, should read through this section to learn more about some general physical and environmental hazards

Hazard	Cause	Symptoms	Prevention
Vehicle accident	-Fatigue -Impaired driving -Driver error -Roadway factors -Vehicle factors	-Various trauma injuries	-Obey traffic laws -Wear your seatbelt -Don't drive impaired -Don't speed or drive recklessly -Don't use a 12 or 15 passenger van
Slips, trips, falls	-Loose, irregular or slippery surface -Wrong footwear -Poor lighting -Obstruction -Improper (or lack of) use of ladders -Inattention or distraction	-Strains, fractures, bruises and contusions (head, wrist, elbow, shoulder, back, hip, knee, ankle)	-Proper “housekeeping” -Wear proper footwear -Adequate lighting -Don't carry oversized objects -Use ladders properly
Dehydration	Not enough water intake	-Increased thirst -Dry mouth -Flushed face -Dizziness -Headache -Weakness	-Drink plenty of water (at least 2 quarts per day), more if working strenuously or in a warm climate or high altitude
Impure Water	Harmful organisms and pathogens living in water sources	-Gastrointestinal illness -Flu-like symptoms	-Carry your own water -Treat water before use with tablets, purifiers, or by boiling for > 3

			minutes
Sunburn	Excessive exposure to the sun	-Irritated skin, pink or red in color	-Wear long sleeved clothing and a hat -Apply SPF ≥ 30 sun block
Heat Exhaustion	Prolonged physical exertion in a hot environment	-Fatigue -Excessive thirst -Heavy sweating -Cool, clammy skin	-Acclimate to heat gradually -Drink plenty of liquids -Take frequent rest breaks
Heat Stroke	Prolonged physical exertion in a hot environment	-Exhaustion -Light-headedness -Bright red warm and/or dry skin	-Acclimate to heat gradually -Drink plenty of liquids -Frequent rest
Hypothermia	Prolonged exposure to cold temperatures	-Shivering -Numbness -Slurred speech -Excessive fatigue	-Dress in layers -Wear appropriate clothing -Avoid getting damp from perspiration
Frostbite	Exposure to cold temperatures	-Waxy, whitish numb skin -Swelling, itching, burning, and deep pain as the skin warms	-Dress in layers -Cover your extremities with warm clothing, e.g., hats, facemask, gloves, socks, shoes
Carbon monoxide	Running a vehicle or burning a fuel stove in an enclosed space	-Severe headaches -Disorientation -Agitation -Lethargy -Stupor -Coma	-Keep areas adequately ventilated when burning fuel -Ensure that vehicle tailpipe is not covered by snow
Extreme Weather	Snow squalls, blizzards, heavy rains, lightning, tornadoes, hurricanes, flash	Severe weather can result in physical injury and/or death	-Be aware of special weather concerns -Bring appropriate equipment to deal

	floods		with severe weather -Identify and seek shelter in the event that severe weather develops -Download weather warning apps depending on your location
Altitude sickness	Decreased oxygen intake and increased breathing rate	-Headache -Nausea -Weakness -Trouble sleeping -Muscle aches -Confusion	-Allow your body to acclimatize by gaining elevation slowly -Return to lower elevation -Drink plenty of water -Avoid alcohol consumption
Hunting Season	Local hunting seasons and regulations vary	A hunting accident may result in serious injury or death	-Wear appropriately colored safety clothing (blaze orange) -Avoid animal-like behavior (e.g. hiding in thickets)
Poisonous plants	Exposure to, e.g., poison ivy, poison oak, or poison sumac plants; many other plants cause contact dermatitis	-Itchy rash -Red, swollen skin	-Avoid contact with poisonous plants -Use pre-exposure lotion -Wash clothes and skin with soap and water after exposure
Property disputes	Venturing into private property without permission	Can lead to conflict with property owners	Knowing where property lines are (e.g., are you on public or privately-owned land).
Lyme and other	Tick bites	Fever, headache,	-Brush away tick if

tick-borne diseases		fatigue, and a characteristic skin rash called erythema migrans (i.e., 'bullseye')	not attached -If attached remove tick quickly and store in plastic bag for testing. Or flush if you do not have a bag; duct tape can also immobilize ticks -Wear long clothing with tightly woven material -Wear insect repellent -Tuck pants into boots -Drag cloth across campsite to check for fleas/ticks -Avoid shrubbery -Stay on widest part of paths
Wild animals (e.g., poisonous snakes, spiders, bears, coyotes, mountain lions, bobcat, moose, elk)	Working in natural habitats that these animals inhabit	Wildlife conflict can lead to injury (e.g., bites, trampling, poisoning)	-Avoid areas with high abundance of dangerous animals -Wear protective equipment (gloves and bug spray) -Make regular noises (e.g., bear bells) to avoid surprise encounters -Carry bear spray and read directions prior to field work
Hantavirus and other transmissible diseases	Exposure to rodents	Early symptoms include fatigue, fever and muscle aches. There may also be headaches, dizziness, chills, and abdominal problems. Late symptoms include	-Eliminate or minimize contact with rodents (e.g., deer mice) - seek medical attention if symptoms arise

		coughing and shortness of breath	
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3. International Work

The risks associated with field work outside the United States are location specific. Make sure to discuss these potential risks with your principal investigator and prepare a specific international pre-travel safety plan. In addition to the hazards listed above, common risks and hazards associated with international field work include:

Hazard	What to do if encountered	Prevention
Violence caused by political unrest or military conflict	Leave the area as soon as it is safe to do so	-Be aware of current travel advisories (travel.state.gov)
Theft (can also occur in North America)	Report theft immediately to local authorities	-Keep wallet in front pocket -Carry shoulder bag diagonally and keep bag in front under your arm
Miscommunication/ Language issues	Leave the area if in danger. Get in contact with local who speaks your language	Talk to someone who has been to the field site before. Have a local contact
Disease	Contact local health authorities Receive medical attention immediately.	Read CDC guidelines on prevalent diseases and vaccination requirements in travel destination (wwwnc.cdc.gov/travel)

4. Identity Prejudice

Certain individuals are more vulnerable to conflict and violence when they are in the field due to identity prejudice. Depending on the location or type of fieldwork, at-risk individuals include, but are not limited to, identities of race/ethnicity, gender, religion, sexual orientation, and disability. The following guidelines, summarized from [Demery and Pipkin 2020](#), are meant to provide both supervisors and researchers with the tools necessary to avoid and respond to potential threats related to identity prejudice while conducting field work.

Guidelines for Researchers:

1. Talk with colleagues and/or supervisors about the risks, preparation to minimize risk, and reporting mechanisms.
2. Contact others that have previously used the field site to discuss their experiences and potential risks.
3. Take advantage of field safety trainings.
4. Know who manages your field site and contact them before your arrival.
5. If possible, introduce yourselves to neighbors in surrounding areas of your field site.
6. Bring a field buddy with you. If this is not possible, have a point of contact (see Field Research Safety Plan).
7. Carry SU credentials and wear apparel with SU logo supplied by your supervisor (e.g., Biology yellow safety vests; contact Katherine Geraghty (kygeragh@syr.edu)).
8. Contact your supervisor or other campus entities (STOP Bias initiative; <https://www.syracuse.edu/life/accessibility-diversity/stop-bias/>) if you feel unsafe and look into changing your field site.
9. Report an incident immediately to your supervisor.
10. Create/participate in a support group for reporting/documenting risk.
11. Have a 1–3-minute elevator pitch about your research and why you are in the area conducting research.
12. Bring a copy of this field safety plan to help describe why you are working in the area.

Guidelines for Supervisors:

1. Self-educate on the potential experiences of your own team members.
2. Prior to fieldwork, survey field sites for potential risks.
3. Have a conversation with all research team members on the risks and preparations to minimize risks, associated with the distribution of this document.
4. Introduce researchers to land/site managers.
5. Assist researchers in establishing safe housing.
6. Review and agree upon fieldwork and safety plans with researcher.

5. Resources

SU Environmental Health and Safety:

315-443-4132

<https://ehss.syr.edu/>

SU Public Safety and Police Services:

315-443-2224

<https://dps.syr.edu/>

General Travel Health Advisories (both domestic and international):

<http://travel.state.gov>

<http://wwwn.cdc.gov/travel/default.aspx>

Weather:

<https://www.weather.gov/safety/>

Impure Water:

<http://www.cdc.gov/healthywater/>

Diseases:

<https://wwwnc.cdc.gov/travel/diseases>

General Outdoor Safety:

<http://www.fs.fed.us/safety/outdoor/>

Lyme Disease:

<http://www.aldf.com>

Poisonous plants:

<http://poisonivy.aesir.com/>

Hunting season:

<http://www.fs.fed.us/>

Digital maps:

<https://www.avenza.com/avenza-maps/>

Discrimination and Identity Prejudice (from Demery and Pipkin 2020):

- Summary discussion of discrimination and bias in the field for geoscientists, with additional resources for promoting safe and inclusive fieldwork.
<https://serc.carleton.edu/207372>
- Recordings of a seminar on the topic of how to confront barriers to inclusion in the geosciences. <https://go.nature.com/2ZZs4JS> AND <https://go.nature.com/2FTtZsr>
- NeurOnline: Guidelines for supervisors on how to mentor diverse graduate students. <https://go.nature.com/3mTw7RR>
- Guidelines for supervisors on how to mentor all graduate students.
<https://go.nature.com/3iX6OvH>

- Resources outlining mentoring needs for a diverse community organized by demographics (that is, age, experience, family needs, gender, race and so on). <https://go.nature.com/3609LI9>
- Blog with anonymous documentation of microaggressions. Examples are organized by demographic group (that is, race, gender and so on). <https://www.microaggressions.com/>
- Challenges to inclusion and tolerance of LGBTQIA+ professionals in the biological sciences. <https://go.nature.com/3cswcai>