



## SAFETY

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Safety doesn't just happen by itself; we have to make it happen. The key is to plan ahead and to anticipate what could go wrong. Every REU PI or site manager should be familiar with potential hazards—whether on campus, in the field, online, or at a conference—and plan accordingly.

## → Introduction

Most accidents can be prevented with proper planning and training, and most emergencies can be mitigated by having an emergency plan. Safety is an issue of teamwork and cooperation. Engaging participants in safety planning, and working toward creating a sense of team camaraderie during orientation and throughout the REU program, will go a long way toward keeping everyone safe. Actively working to create a safe and inclusive environment free of harassment and discrimination is critically important, and discussed both in this chapter as well as the [chapter on Developing an Anti-racist REU Program](#).



This chapter shares some general safety guidelines, based on the resources provided by the Geological Society of America (GSA), National Association of Geoscience Teachers (NAGT), Science Education Resource Center (SERC), and the ADVANCEGeo partnership. The common thread in these guidelines is the importance of advance planning.

Since all REUs are different and pose different safety risks, it is essential to identify and assess risks specific to your REU. A sample risk assessment is provided under “Additional Resources” below.

## → Leadership

Leadership is essential to safety. Ensure that all REU leaders and staff understand that they are role models. Leaders should adhere to all rules and guidelines, and validate their importance as guiding principles for the whole group.



REU leaders and staff should be prepared to deal with any emergency at any time, which requires they have 24/7 access to first aid kits, medical forms, communication, and transportation.

To ensure preparedness, leaders should complete relevant training, which (depending on your program) could include Basic or Wilderness First Aid, CPR, field safety and/or laboratory safety. A designated leader should be available 24/7 to respond to emergencies, and their contact information should be shared with students.

## ➔ Policies and Forms

Before the REU begins, have participants (including program leaders) complete various forms to acknowledge and agree to policies, as well as to share information. (See “Additional Resources” for sample forms). At a minimum, these forms should include:



1. Code of conduct agreement form: As part of program design, develop a code of conduct that specifies behavioral expectations for all program participants, including during times when they are not participating in program activities. Clearly articulate your alcohol policy, as a disproportionate number of incidents (including injuries and harassment) have been linked to alcohol use. If you allow alcohol in your program, restrict its use to evening socializing after all work is completed for the day. Alcohol should never be included in work functions, lunch breaks, or where minors are present. You can look to professional societies such as the Geological Society of America (GSA) for Codes of Conduct examples.
2. Medical form: Participants should provide information about health conditions, insurance, physicians, and emergency contacts. Participants with health conditions (e.g., allergies, diabetes) should describe what they will bring to care for themselves (e.g., epi pens, snacks). Medical forms must be accessible to REU leaders at all times, and be destroyed after the REU, for confidentiality. Note that some universities offer insurance plans for summer students.
3. Liability waiver: To ensure students understand the risks inherent in program participation as well as to protect trip leaders and their institutions, have all participants sign a liability waiver. Many examples are available that can be used as models, and some are joint waivers for liability and media release with liability. However, be sure that your waiver complies with the regulations of both your institution and state.



## ➔ Indoor Work Spaces

### Student Work Spaces

For on-site programs, identify and inspect student workspaces before they arrive and ensure that they comply with your institution's safety regulations. Your institution might have an ergonomics expert who can visit with participants after they have arrived to set up desks and monitors to avoid workplace injuries. If participants will work in climb towers or assemble equipment, they should receive safety briefings.

### Safe Dorms and Living Quarters

When contracting housing for your REU, ensure that the facilities are safe and up to standard. Double-check what the safety regulations of the dorms or housing are, and make sure to share them with your participants when they arrive.

### Laboratory Safety

All laboratories used in REU programs should meet or exceed institutional and governmental safety standards and have up-to-date inspection certificates. All students working in a laboratory should be trained in basic safety topics such as: appropriate usage of protective equipment and clothing; safe handling, transport, and disposal of materials; safe operation of equipment; hazard assessment; applicable government regulations and emergency responses (*Institute of Medicine*, 2009). Students should never work in laboratories unsupervised.



## ➔ Field Safety

### Field Safety Policies and Procedures

For an example of a detailed safety planning document for field excursions, see the Geological Society of America's [field safety policies and procedures](#). This document includes three sections:

- » Trip Leaders' Responsibilities
- » Participants' Responsibilities
- » Reporting Unacceptable Behavior

Using this document as an example, go ahead and create a safety planning document appropriate to your program's field excursions. Even better, make it a team exercise.

### Designating a Safety Officer

Designate one trip leader as the safety officer. They would check in regularly with students who have disclosed medical issues as well as generally monitor everyone's condition (e.g., for exhaustion, sun overexposure, dehydration). This person would also be responsible for watching the time and monitoring the weather.

### Communication

If you will be outside of normal cell phone coverage, purchase a satellite communicator (e.g., satellite phone or inReach device). Each participant and leader must have phone access,

24/7. Two-way walkie talkies can also be useful. Remember to carry extra batteries or power sources/chargers, and be sure to test all devices before going into the field each day.



### File a Travel Plan

Let someone at your home institution know who's going, where you're going, when you're expected back and how to contact you. They should have a copy of all participants' medical forms, which lists their emergency contacts. Remember to let this person know when you return safely, as well as what to do if you do not return on time.

### Preparing Students

Make sure that students and teaching assistants are aware of potential hazards, how to mitigate them, and what you would like them to do in case of an emergency. A leader may not always be around to help.

### Personal Equipment and Clothing



Your REU program may require students to provide certain types of clothing (e.g., warm jackets, rain gear that is truly waterproof, hiking boots, life jackets, water shoes, wetsuits) or equipment (e.g., camping gear, compasses, anemometers, hard hats, hammers, hand lenses). However, not all students have this gear or can afford to purchase it. Whenever possible, purchase essential items for all students to ensure everyone has access to appropriate gear, without being shamed or stigmatized. Even small items such as sunscreen or mosquito repellent should be purchased for the group. Ensuring that all students are adequately equipped before departure is a key safety precaution.

### Transportation and Drivers



First, check your institution's driver policy. While it is tempting to accept anyone who is willing to be a driver, this can be disastrous. If allowable by your institution, select drivers from your team but take the time to select drivers carefully.

Drivers should be at least 25 years old, have a clean driving license, and have taken a course in defensive driving or driving high occupancy vehicles. (GSA Field Safety Policy). Drivers should never use personal

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vehicles or be expected to provide their own insurance. They should always follow speed limits and other posted signs, and all participants should wear seat belts. Consider developing a Driver Agreement Form, along the lines of a code of conduct.

### Head Counts



Have you ever returned from a field trip and later learned that someone was left behind? It has happened! This can easily be avoided by taking a head count at the beginning and end of your trip and at every stop in between. If multiple vehicles are used, participants should remain in the same vehicle for the full day, to facilitate keeping track of everyone. When outside of vehicles, use the buddy system; no one should ever be working alone. Working in groups of at least three is even better: if someone is injured, one person can stay with them while the other gets help.

### Common Sense Safety & Security



Certain safety practices we might think of as “common sense” include having a companion when walking at night, taking rides from others, or keeping one’s belongings in sight. It is still important to mention these practices to students. Don’t assume that your students are knowledgeable about – or comfortable with – walking around big cities, using public transportation, or working by the ocean or in remote areas.



## ➔ Dealing with Emergencies

Be prepared rather than caught by surprise, and things will go more smoothly if an emergency occurs. Here are some strategies to help.

### Emergency Gear



If your REU involves a field component (even if only a short excursion), it's important to be prepared for all eventualities by carrying [The Ten Essentials](#): navigation, headlamp (with extra batteries), sun/rain protection, first aid, knife, lighter/matches, space blanket, extra food, extra water, and extra clothes. Such preparation will both mitigate the need for rescue, as well as ensure that participants can survive until emergency personnel arrive. It is also wise to carry a whistle and something brightly colored, in case a rescue is needed. For work on water, ensure adequate access to flotation devices such as safety throw rings.

### First Aid Kits



First aid kits should fit the situation, be numerous, be visible, and be readily available to all participants at all times. A first aid kit should be taken on all field excursions, regardless of duration. Directions to the nearest urgent care facilities and emergency rooms should be printed and put inside the kit.

## Emergency Response

In the event of an emergency, first assess whether the danger has passed. For example, if a rockfall injured a student, move all students away from the area immediately. This exemplifies the importance of having at least two leaders: one leader can move the other students to a safe location while the second can attend to the injured student. Lastly, fill out an incident report form, in accordance with your institution's policy.

If a situation requires a rescue, follow these tips (*HTMC, 2019*):

- » Call 911 – ask for Fire Rescue
- » Be Visible
- » Be Audible
- » Stay Calm
- » Stay Put
- » Stay Warm

## → Inclusivity and Respect

### Inclusive Practices



In addition to setting clear policies, it's important to pro-actively work to create a safe and respectful environment where all participants can thrive. This entails respecting that everyone has different thresholds for safety and comfort. Explicitly state that participants should always feel free to share concerns and should never feel pressured to engage in activities or perform tasks that they find unsafe or uncomfortable.



Women, LGBTQ+, ethnic/racial minorities and people with disabilities are at particular risk of experiencing discrimination or harassment from community members, program mentors and leaders, and other students. These concerns are often exacerbated during fieldwork, where privacy is limited, work/personal boundaries are blurred, and students lack access to support networks and reporting mechanisms. Hierarchical power structures, alcohol, long hours, and stress all increase the likelihood of harassment (see *Developing an Anti-racist REU Program*).

A recent survey revealed that 40% of women of color reported feeling unsafe in the workplace because of their gender or sex, 28% reported feeling unsafe because of their race; and 18% reported skipping professional events, including fieldwork, because they did not feel safe (*Clancy et al., 2017*).

Students might be hesitant to share such concerns with an REU director, particularly if they are of a different race, culture, or gender. It can be helpful to employ undergraduate peer mentors or graduate teaching assistants that reflect the diversity of the student population. It is essential to ensure that, regardless of location, all students have 24/7 access to communication without gatekeepers, in case they need to report an incident.

### Preventing Sexual Harassment

The [chapter on Sexual Harassment Prevention](#) provides information strategies related to preventing sexual harassment in the office and in the field. Be sure that mentors and other staff are trained in this area, along with the students.

Note that sexual harassment can involve unwanted interactions in virtual work settings as well. Be sure to identify what these are for the students and provide guidance on who they can speak to about any incidents.

[Virtual sexual harassment](#) includes behaviors such as:

- » Comments or rumors about the victim's sexuality
- » Comments or rumors about the victim's sexual activities
- » Sharing sexually explicit photos without consent
- » Using sexual or gender-based derogatory terms to describe the victim

Harassers may post this content on their social media pages or online forums, or send it to others via email, text message, or other digital application.

Tell students to be cautious about posting photos of themselves or others on social media. A good litmus test is whether they would be comfortable with an employer or colleague seeing the photos.

Show your REU's commitment to a harassment-free workplace. Write a strong [anti-sexual harassment policy](#) including online behaviors, and enforce the policy without exception.

Encourage students to speak up if they are experiencing harassment. All students should be informed of who they can talk to and where they can file a complaint.

### Preventing Racism and Discrimination

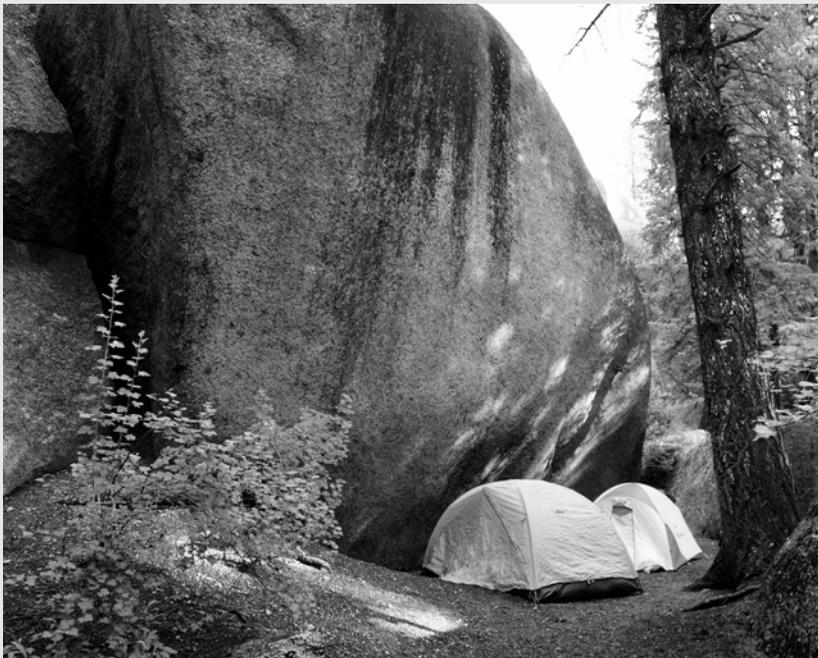
Current events relating to issues of racism are prominent in the news, heightening awareness to the topic and calls for anti-racist action. With the increased online activity in recent years—particularly amongst young adults—the incidents of racist behaviors in the digital world and cyber-bullying have increased. Here are some tips to consider:

- » Acknowledge that racial discrimination is entrenched in public policy and the history of racial oppression of Black people, Native Americans, and others
- » Have a strong anti-racist policy statement
- » Enforce rules to make clear those behaviors that will not be tolerated
- » Don't tolerate the normalization of hate through seemingly harmless humor
- » Teach about the importance of impact rather than the intent of statements and actions



- » Create a supportive environment among students, and acknowledge events in the news as being upsetting
- » Encourage the development of empathy as a way of understanding differences in interpretation
- » Ask everyone to play a part in reducing harm online

### Camping While Black



In an article on [the experience of being in the great outdoors as a Black woman](#), Lauren G. shares the following:

“As a woman, I’m often fearful about doing certain things alone and I take as many precautions as I can. However, as a Black woman I have yet another set of circumstances to consider. I have to reconcile that as much as I love being in nature and seeing the world,

there are those who wholeheartedly believe someone like me has no right to be there — simply because I am Black.”

“Camping while Black shouldn’t be this anomaly or strange occurrence. Enjoying nature or traveling to a lesser-known destination shouldn’t produce admonition and insulting commentary or worse, question your perceived blackness. No really, it has happened to me. I was told traveling to find waterfalls was a “white people thing” and I must not be a real Black girl. Needless to say, I had to set them straight.”

 **Resources**

Field trip policy documents, Hamilton College:

- » [Field trip policy form for students to sign](#) (doc)
- » [Field trip itinerary and emergency contact form](#) (doc)
- » [Field trip health form](#) (PDF)
- » [Field trip report form for injury, accident, or illness](#) (doc)
- » [Field trip liability form](#) (doc)

Geological Society of American Field Safety Guidelines:

- » [Field Safety Policy](#)
- » [Code of Conduct](#)
- » [Liability Waiver](#)

 **Further Reading**

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