

Safety and Liability Issues Related to Field Trips and Field Courses

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Fieldwork plays an important role in initiating students into the geoscience community of practice, providing learning opportunities not possible through classroom lectures, lab work, or computer exercises alone [Mogk and Goodwin, 2012]. It's no wonder, then, that fieldwork is a mainstay of any well-balanced university geoscience program, with activities ranging from local field trips to in-residence field camps at remote sites.

Increasingly, modern field instruction offers a diversity of experiences beyond traditional geologic mapping and may include a disciplinary focus (e.g., hydrology, geophysics, paleontology), use of modern instrumentation (e.g., geochemical, geophysical, or digital devices), long-term monitoring, and international settings [Whitmeyer *et al.*, 2009]. Advanced field courses may provide original research experiences but require extended time in remote areas. While allowing for broader learning experiences, the expanding scope of field instruction (see Figure 1 in the Additional Supporting Information in the online version of this article) may expose students to greater safety risks and increase the potential liability of instructors and institutions.

When planning field activities, an ounce of risk prevention is truly worth a pound of cure—awareness of potential risks and liabilities and careful planning and preparation can mitigate situations that could affect the health and safety of students and the overall success of field programs.

Because field experiences are part of pre-professional training, an overarching principle is to emulate the safety and risk mitigation protocols employed by the geoscience workforce [Oliveri and Bohacs, 2005]. What is the best way to do that? To answer this question, AGU and the American Geosciences Institute hosted a webinar on legal issues related to field trips (see http://www.youtube.com/watch?v=m_fu0ZHtMtg). To encourage reflection and discussion by field instructors to proactively address these issues, a summary of the themes and ideas covered in the webinar plus some additional thoughts are presented here.

Although these ideas are neither exhaustive nor the definitive answers to issues related to liabilities in the field, discourse on these issues can help departments and institutions develop policies that will lead to safe and effective field learning experiences for all.

Before Departing for the Field

Many safety issues can be addressed before leaving the classroom by preparing

field trip policy forms and information sheets. At a minimum, these forms should encompass principles of safety in vehicles and at outcrops, responsibilities of all participants to the larger group, a student code of conduct that includes consequences for failure to abide by the code, personal and group gear required to ensure safety and comfort, and medical and emergency contact information. Students, as well as teaching assistants and vehicle drivers, should review and sign all of these forms before the field excursion. This information is essential to have on hand during the confusion that accompanies an emergency, helping field trip leaders more easily inform first responders.

The student code of conduct must make it clear that the field is an extension of the classroom and that all university policies apply. University alcohol, drug, and sexual harassment policies should be explicitly reiterated, with consequences clearly defined. Any disruptive or unacceptable behavior should be documented. (Note, however, that all written documentation and correspondence is subject to the Freedom of Information Act.)

Leaders should provide a detailed, written itinerary of the field trip to students and their departments before departure—the document not only helps participants understand the expectations of the trip but also serves as the initial record of communication should an accident occur. This itinerary should include contact information for field trip leaders, a list of participants, a schedule of field locations, and lodging information if pertinent.

The itinerary should define and describe expectations and tasks for students, with potential risks clearly identified. Students need to know what to expect regarding weather and physical demands so that they bring appropriate personal and professional gear and are mentally prepared for the intellectual tasks that will be expected of them.

An emergency response plan should be in place, with contact and location information immediately available for local medical personnel, police, and search and rescue squads. All participants should be familiar with this plan. The field environment is unpredictable—weather can turn bad, roads may be closed, wildfires can spring up—so having a contingency plan for alternative routes and activities may help salvage an otherwise bad situation.

As property owners become increasingly reluctant to allow access to their land, it becomes imperative for field trip leaders to respect property rights and ask permission of landowners. Increasingly, permits are required to gain access to public lands (e.g., the U.S. Forest Service, the Bureau of Land Management), and leaders should consider formulating a memorandum of understanding

detailing when and how they will enter these areas. Sampling permits are required for all U.S. national parks and many other areas. Respect for property applies to students as well: They must be careful not to harm or disturb wild and range animals, they should leave gates and fences as they find them, and they must be aware of smoking and other fire dangers.

En Route to the Outcrop

Vehicle safety is an increasingly important issue. Traditional 15-passenger vans are being phased out due to safety concerns (the high center of gravity increases the risk of rollovers). The use of smaller field vehicles means more vehicles will be needed, thus increasing transportation costs and the liability of more drivers.

It is generally advisable to use official department or institution vehicles, though field trip leaders should verify that these vehicles meet the needs of the trip (e.g., four-wheel drive, snow chains). All vehicles used for field trips should contain safety equipment, such as a first aid or crash kit, flares, cones, and jumper cables. Many universities have a policy of certifying drivers for university vehicles, and it is helpful to have at least two authorized drivers for each vehicle.

The use of students' personal vehicles is not recommended, as it is hard to determine in advance their road-worthiness. However, if circumstances allow for the use of student vehicles, drivers and passengers should sign disclaimer forms to limit institutional liability. In the unfortunate event that an accident does occur, field trip leaders and drivers must follow university procedures. Accident procedures include reporting the incident, documenting the names of all involved, listing any treatments given and any external help used, and describing what happened, what actions were taken by authorities, and any courses of action that were recommended by authorities at the scene.

On the Outcrop

On the outcrop, field trip leaders need to reiterate that the field is an extension of the classroom and all university policies apply. However, the field is an atypical environment for most students, and safety becomes paramount. Students should know that they have license to refrain from any activities if they feel unsafe or have anxiety about their situation.

Instructors will have to determine the degree of supervision that is required in the field, as appropriate for the students' experience. In some cases solo fieldwork may be warranted (e.g., for final projects at a capstone field camp), but in most cases a buddy system of small groups is recommended so that in case of an injury someone can attend to the victim while others seek help. A daily

plan for check-in times and locations to be visited throughout the day will help instructors make sure that all students are accounted for and are staying on task. Any disruptive or unsafe behavior by a student should be subject to disciplinary action and suspension from further field activities.

It is important that field trip leaders and teaching assistants have first aid experience, perhaps at the Wilderness First Responder or Emergency Medical Technician (EMT) level. All leaders should have portable first aid kits in their backpacks, with more complete first aid gear available in each field vehicle.

Communication in the field is equally important. Mobile phones might work in some areas, but walkie-talkies with a range of a couple of miles often work better for field sites with limited cell coverage. Field leaders might want to consider bringing a satellite phone for extremely remote field sites.

Advanced Fieldwork

Advanced field-based research (e.g., for graduate or undergraduate theses) often entails multiday field excursions to remote settings. Though these projects usually have a single primary investigator, it is advisable that fieldwork be conducted by groups of at least two people for both safety and scientific discussions onsite.

Advanced fieldwork for extended periods necessitates that all participants have field safety gear and first aid kits with them in the field. Cell phones or other communication

devices are critical for contact with authorities outside of the field area in case of an emergency. International field settings present their own complexities, and field-workers need to familiarize themselves with local customs and methods for contacting emergency service providers.

Personal Liability

Field trip leaders need to be aware of the liability policies of their institutions. Proactive discussions with the university's legal authorities might help with formulating field policies to mitigate potential liability issues. Note, however, that university liability coverage is typically restricted to "educational activities," and many of the ancillary activities that accompany field trips (e.g., meals, campfires, camping, free time) may not be covered by the university's insurance policy. As an additional precaution, field trip leaders should consider adding additional personal liability coverage to their individual insurance policies.

Every Field Trip is Unique

Field education and field-based research have inherent risks, and every field situation is different [Mogk, 2011]. Instructors and assistants should take the time to analyze specific regional risks and other unique issues. For example, leaders of field trips in the western United States should have rudimentary knowledge of how to treat snake bites, and students

who venture across man-eating bogs in western Ireland need to know how to extract themselves should they fall into one.

It is impossible to know everything that might happen to students or their leaders in the field, but they should expect (and prepare for) the unexpected. The supporting information accompanying the online version of this article includes a list of additional resources and references.

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—STEVEN J. WHITMEYER, Department of Geology and Environmental Science, James Madison University, Harrisonburg, Va.; email: whitmesj@jmu.edu; and DAVID W. MOGK, Department of Earth Sciences, Montana State University, Bozeman