

Better Safe than Sorry: Steps towards safe and successful research in physical geography

Workshop Goals

To review and discuss the objectives of the "Student Safety Plan and Protocol" to be presented at your Spring Review meeting.

To provide advice on identifying potential safety issues for individual research.

1. Student Safety Plan and Protocol

Timing: Presented to student's thesis committee at Spring Review

Participants: Student, faculty supervisor, and thesis committee

General format: Prepared by supervisor and student prior to Spring Review meeting; revised, discussed, and ultimately approved by thesis committee at or following Spring Review meeting

Details: Each student, working with their faculty supervisor, will design and write a detailed safety protocol for the period they plan to conduct research in the field (see 'Safety Procedures' for example, below). We expect that each plan will be tailored to the individual needs of each student which may be unique to the environment and the activities of the research. Information provided in the plan should include, but is not restricted to:

- a. Emergency contact information (e.g. local emergency services phone numbers, search and rescue phone numbers)
- b. Schedule and system for regular check-in with supervisor, family, or friends
- c. Emergency evacuation plan
- d. Potential hazards
- e. Necessary skills to deal with named hazards
- f. Training the student has already received (including dates of completion/expiration, if relevant)
- g. Training the student requires (including proposed dates of completion)
- h. Safety equipment list

In addition, all students working in the field should be required to receive training and certification in basic first aid, identifying whether they have already received this training (f) or when they plan to complete it (g). Should the student require certification, we propose that the department subsidize part of the course fee and faculty supervisors provide the remainder. First aid courses are offered weekly at the University Fire Station-Hall 10 (2992 Westbrook Mall) for a fee of \$110.

Lastly, students should be required to complete a medical form (see example provided below), containing personal medical information such as allergies or previous injuries that may be important to emergency care providers. Two copies of this medical form should be kept on file with both a) the student's faculty supervisor and b) the department main office (in a secure and locked file cabinet), so that this information can be accessed in case medical care is required in an emergency.

2. Safety Plan Follow-Up

Timing: After Spring Review; prior to the start of field work

Participants: Student and faculty supervisor

General format: Review and revision (if necessary) of Safety Plan; preparation for field

Details: Once the Safety Plan has been approved by the committee, the student and their faculty supervisor should continue to meet and discuss the provisions and preparations outlined in the plan, to ensure that all requirements are met. For example, if a student requires training in a certain skill, such as firearms use or wilderness first aid, the supervisor should make sure the student locates, registers, and attends an appropriate training program. If special equipment is required, the student and supervisor must arrange to order and purchase the equipment with enough time to test its functionality before taking it into the field. In sum, it is the supervisor's responsibility to consult with the student and make sure all the preparations outlined in the Safety Plan have been completed prior to the start of the field season. Once field work begins, regular check-ins should be maintained between student and supervisor, or other contact named in the Safety Plan. After field work ends, the student and supervisor should again meet to discuss any unexpected safety problems, review the Safety Plan, and revise procedures and preparation for future field seasons, if necessary.

3. Advice for Preparing Safety Plans in Physical Geography

Field Team

People - how many field assistants to meet your goals? for safety? cost effective?

Skills and training - required basic skill set, training for specialized research skills
- safety training and team building

Identifying Risks and Hazards

a. Travelling to your study area and accessing study sites

Vehicles - rentals, insurance, maintenance, use of personal vehicle

- student drivers and responsibilities (do all team members have a license?)

Logging roads - access, etiquette, radios - general and emergency communications

Access by boat - required operator's license, standard safety equipment, emergency response on the water, proper transport/storage of boat and trailer

Access by hiking - access on marked trails, off-trails, appropriate equipment

Access by skiing - snow conditions, avalanche risk, emergency beacons

Access by helicopter - required safety briefing, distribution/transport of equipment

Access by ATV - license or training, safety equipment, emergency response on the water, proper transport/storage of ATV and trailer

b. Biological hazards

Plants, food, insects (bites, stings) - first aid supplies, epi-pen, topical/oral medication

Wildlife - bears (black, grizzly, polar), wolves, cougars - training, group strategy, bear spray, bear bangers/horns, rifle (certification, operation training, transport)

c. Physical hazards

Highly variable among projects and requires substantive forethought by you

- slope stability; avalanche risk; water hazards and flooding; hiking on/off trail, long distances, steep terrain; adverse weather; danger trees and windthrow; equipment use (boats, ATVs, chainsaws etc) etc.

Abatement - equipment, preparations and plans, exit strategy, emergency response plan

Safety Equipment

First Aid - basic kit, epi-pen, topical/oral medications, treatment of blisters and other foot injuries, insect repellent, sun screen

Vehicles- road side safety equipment, spare tire, repair kit

- maps of study area, roads, location and access to local hospitals

Communications - phones (cellular or satellite), radios, other devices

Basic day-pack requirements - food, water, clothing, other

Long-term equipment needs - provide a required/recommended list for field assistants

Communications During Research

Scheduled updates - by phone or email on a regular schedule

- depending on your research, this may be daily, weekly, monthly

- options for communication - check-in service, satellite phone, orange spot

Missed updates - what steps are taken if you do not check in?

- When should we start looking for you? 1-2 hours overdue? 1-2 days overdue?

3-5 days overdue? >5 days overdue?

- How and where do we look for you? With whom have you provided your schedule and places you planned to conduct your research? (e.g., local contact, family or friend, or both)

Emergency Contacts

Who must be contacted? Under what circumstances?

Who do you want contacted in the case of an emergency involving you?

Who do you contact if one of your field assistants is involved in an emergency?

How? Register names, phone numbers and emails of your emergency contacts with the appropriate person (local collaborator, your supervisor etc)

4. Addition Thoughts On Successful Field Work

Leadership

Role as team leader - communications, inclusive/exclusive behaviours

Power relationships - identify the strengths and weaknesses of your team members, apply the principle of the "rate limiting step", listen to your field team, develop strategies for group decision-making, gender awareness

Field accommodation - length of field season and living arrangements, defining and dividing tasks (household versus field), personal time and space

Managing Self-Expectations

Research timelines and delays

- be prepared for inevitable unanticipated difficulties and delays

Flexibility and feedback

- know that few research projects go exactly as proposed and you must be flexible (prepare plan A, B, C etc)
- prioritize work tasks so that the core research is accomplished and additional components are completed as time/opportunity allows
- schedule an opportunity to get feedback from your supervisor during the first third of your research time to ensure that you are on track and they understand/agree with the changes you have had to make to meet your research goals

Time off

- self awareness, time off when it is needed to stay healthy and avoid burn-out

Travelling to Research Sites Overseas

Canadian Embassy (or your nation's embassy)

- location, access by phone or email
- registering and updating as your plans change

Logistics

- visas, passports, permits, insurance - plan in advance and have low expectations of bureaucracies and timely responses
- money - cash, currencies, credit cards, access to additional funds
- Local contacts or "fixer" = individual or organization such as an NGO or University who assists with local logistics, security and paperwork

Health concerns

- medical insurance and documentation to take with you
- vaccinations - timing, types, options, follow-up, documentation

- symptoms/prevention/treatment of common ailments (cold/flu to water-borne diseases) - be prepared with your own medications and advice from your Canadian doctor
- do you have a first aid kit and are you trained in basic first aid

Political stability and advisories

- registering with embassy,
- Canadian government policies
 - how do you learn of and respond to new advisories as issued
 - repercussions if you do not to adhere to advisory warnings

Risk of kidnapping/political instability

- realistic risk assessment
- worst-case scenario: line of communications with supervisor and family, how to ask for support from the Canadian government