Appendix C
Field Research Safety

All science, whether conducted in a controlled indoor laboratory or in an outdoor field setting, requires regular safety training and thorough consideration of safety issues specific to individual research projects. The office of Environmental Health and Safety exists as a safety consulting resource for all university departments and personnel. Also available are several examples of safety protocols, guidelines and procedures developed by various units within the college to help in the formation of safety protocols for particular projects or activities. Ultimately, safety rests with each individual. Individuals are responsible for their own safety and, through their actions, the safety of those around them.

Field research is defined here as comprising work activities conducted primarily for the purpose of research, undertaken by employees or students of the university outside of an office or research laboratory. Ultimately, field research involves some risk from both the research activities and chance events that are unpredictable and unavoidable. Part of the risk can be greatly reduced by awareness of hazards and exercising good judgment. Risk in field research may include, but is not limited to, the risk to physical health, emotional well-being and personal safety. The risks may arise because of the nature of the research itself, from the physical climate, or from the political, social, economic and cultural environment of the field work location. For these guidelines, the following definitions are employed:

- A **principal investigator (PI)** is a faculty member who assembles a team to carry out field research.
- A **field supervisor** is a person appointed by a principal investigator to directly oversee field research on location. A field supervisor is expected to have a safety plan and all of the suitable training for conducting field research. Field supervisors should have the following training: general safety orientation, CPR, wilderness first aid, and general knowledge of all first aid equipment. The following safety factors should be considered when developing the safety plan.
- A **field worker** is a person who carries out research under the direction of a field supervisor.

Scheduling

To the extent possible, field research should be planned in advance. The PI should know when and where field research is being conducted. If the PI is away, then department staff should be advised of pending research.

Protective Equipment

A properly equipped first aid kit, a cell phone, and extra water are required on all field excursions. Appropriate personal protective clothing and equipment are required to the field workers.

Contacts

The home phone number of all field workers and supervisors, as well as phone numbers of emergency contacts, should be included in the safety plan maintained by the supervisor. The home and work numbers of the PI needs to be kept in the plan in case field researchers need to contact PI during an emergency.

Medical Facilities

The telephone number, location and directions to a medical facility in the vicinity of the field site should be written into the safety plan maintained by the field supervisor.

Vehicles

All state and local laws, rules and regulations must be followed.

Every field researcher has the right, at any time, to refuse to participate in any activity that they feel may endanger their health or safety or that of another person.

Safety Issues for Principal Investigators

- When in the field, the PI has the same responsibilities as a field worker and may take on the responsibility of being field supervisor, or may designate that responsibility to the field supervisor in charge. When not in the field, the PI should make an effort to ensure that field work is performed in compliance with the safety plan, that all personnel are provided the necessary safety training and equipment.
- The PI is responsible for:
    - Facilitating the field supervisor with determining the specific health and safety risks and level of risk associated with the particular field project.
    - Assembling a field team and establishing a clear chain of command, which is understood by all team participants
    - Participate in pre-trip planning specific to the trip, including a review of the safety plan.
    - Documenting that each field worker is aware of the provisions of the safety plan, the risks associated with the project, training, and verifying that all safety procedures are in place.
    - Ensuring that appropriate controls and safety procedures are in place to deal with the risks reasonably expected to be associated with the field research, as well as provision of appropriate protective equipment and training.

Solitary field research activities in remote areas are strongly discouraged. Field research involving particularly hazardous locations or activities should be conducted by two or more people and only after full assessment of the risks and available controls and safety procedures has been made. In circumstances where solitary field research is necessary, the solitary field worker assumes the responsibilities of field supervisor. A method of regular communication should be implemented, including steps to follow if a scheduled contact is not made.

Basic preparations that should become routine before every sampling activity

- Use safety checklists when preparing for a field trip. Develop your checklists from existing site safety information and site reconnaissance (job hazard analysis or site safety plan).
- Keep a field folder for each surface-water and ground-water site at which water-quality data will be collected. The safety related contents of a field folder include:
    - Copies of the checklists mentioned above.
    - Site type (hazardous waste, confined space, cableway, wading site, bridge site, boat site) and site description.
    - Site location (include map, site sketch, and description).
    - Locations and phone numbers of emergency facilities, such as a hospital or first aid station, police and fire departments, utility companies.
- Additional information specific to the site: for example, if it is open to hunting, and season dates; appropriate clothing (such as orange safety vests).
- Make an itinerary for every field trip and leave a copy at the office and with family or colleagues. Schedule times to check in at work and with family or colleagues when field trips require overnight stays. Follow the established schedule. Notify all concerned parties if your schedule changes.
- Obtain or reserve communication equipment, such as a cellular phone or two-way radio.

Training

Awareness is the most basic and most important step in preparing to work in the field. To adequately prepare for field research, the worker needs to understand what the specific field research project entails and what safety concerns may arise. Field workers should be aware of the locations of emergency equipment, as well as basic emergency procedures. This is analogous to “site-specific” training in laboratories. CPR and Wilderness First Aid training is highly recommended.

All field research workers should be informed of the potential physical and environmental hazards in the area such as poisonous plants, animals, insects, terrain, biological hazards, weather conditions, crime, and disease. The PI and/or field supervisor shall maintain completed medical history forms for each field researcher consisting of emergency contact information.

Advanced Planning

If you are involved in international research, it is important to obtain your passport and visas in order well in advance. Make sure that you have health insurance coverage. Obtain any recommended vaccinations and make sure that you are aware of any health concerns and what food is safe to eat in the country and region of the country in which you will be working. Check with the State Department so you know if there are any travel warnings or restrictions.

If you perform field work studies, you need to know and understand the potential hazards presented by the area in which you will do field work. For example, there may be predatory animals (e.g., bears), venomous amphibians, or toxic plants. The dangers may also be human as the area in which you work may be an area in which there has been past/present civil or political unrest. You should make sure that you know what the precautions are for each potentially hazardous situation and that you have received the training to handle these situations. Accidents are always possible when working outdoors – cuts, sprains, falls, insect bites, sunburn, and dehydration are not uncommon. Consequently it is vital that you follow the direction of your supervisor in the field at all times. Do not engage in horseplay.