Strategies for Conducting Field Research Safely

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Overview

- Basic strategy for conducting field research safely
- Recommendations for common situations
- Specific scenarios
- Your questions!!

Five Fundamental Concepts

Be Proactive

- Safety in the field is your responsibility
- Before beginning field research - think about what types of activities you will be conducting and ask yourself:
  - How might I get injured?
  - How might I injure someone else?
  - What can I do to avoid getting hurt or hurting someone else?
  - If you can’t answer these questions – ask someone else

The Buddy System

- In field research the best safety related item is your co-worker
- Work together and watch out for each other
- If you must do field work alone – get someone to be your buddy and let them know where you are going and when you will return

Err on the Side of Caution

- If in doubt about any injury. Either return to the lab or seek medical help. The sampling can wait!
- Important to err on the side of caution in any situation because the hospital may not be close to your field site.
- If in doubt about a situation/scenario. Use your best judgement. Call someone if possible.

Communicate Health Issues

- You are **NOT** required to share medical information. It is your choice. If you are not sure - talk with your doctor and get their advice.
- One of the best way to avoid incidents in the field is for your co-workers to know about your allergies, fatigue, and other medical issues (i.e., the BUDDY SYSTEM)
- If you have an allergy to bee stings and you get stung in the field. Your co-worker will be better able to help you.
- If you have been up all night and are tired. Perhaps your co-worker should drive.

Know Where To Get Help

- Where is the first aid kit?
  - What types of things are in the kit?
- Where is the closest hospital or medical care?
  - Do you know how to get there from your field site?
- Who would you call if you get injured and need help?

Recommendations for Common Situations

Hitting the Open Road

- Field work often involves driving to field sites.
- Practice safe and defensive driving techniques
  - 2004 – 1 person died every twelve minutes in an auto accident
  - 2004 - 1286 deaths as result auto accidents in Ohio
- <u>EVERYONE MUST WEAR SEATBELTS</u>
  - 1975-2004 - Seat belts have saved 195,382 lives
  - 74% of those ejected from vehicle are killed
- Take a cell phone with you, but DO NOT talk on the cell phone while driving
- Each vehicle should have:
  - emergency kit for roadside emergencies
  - first aid kit
  - a field kit with sunscreen, insect repellant, etc.

Machines Gone Wild

- Serious injuries occur with use of mechanical equipment in the field.
- Inspect the machine before using to ensure you are not using an unsafe machine. Are the safety guards in place and in good condition? Are all moving parts fastened tightly? Think about how the machine might injure you and look at those areas.
- What protective gear is needed? Gloves, Helmets, Long pants, Boots, ear plugs. Do you know what you need? If not ask! Do you have what you need? If not, ask for it.
- Riding tractors, mowers, ATVs. Is the area stable? Are their holes in the area? How fast are you going? Will you be riding on a slope?

Avoiding Exxon Valdez Situations

- Use of ethanol, pesticides, and other types of hazardous substances in the field is much different than controlled laboratory situations.
- Do you have protective gear like goggles, gloves, etc? These are needed in field as well as the laboratory.
- Guard against spillage! Particularly important. If spill in the lab, can clean up. However, if spill gasoline in the field, there is no cleaning it up.
- What type of containers are you transporting materials in? Do they leak? Do they drip when pouring? If so, replace. Inspect containers.
- Transporting chemicals: Transport chemicals in good containers within secondary containers that are secured.
  - Chemicals should be separate from people
  - Need to be aware of DOT Hazmat rules. Some chemicals have limitations on the amounts that can be transported

Working In or Around Water

- BUDDY SYSTEM is a **MUST**!
- Know your limitations.
  - Your capabilities in the water determine your safety factor.
  - Can you swim? If so, how well?
- Wear Waders
  - Protect against sharp objects in water. Long pants and shoes are also acceptable. Absolutely NO shorts or bare feet when working in water.
  - DANGER - if water overtops waders in deep water.
  - Consider safety belts and life jackets depending on water depths
- How familiar are you with the site? Be cautious of sudden drop offs and unstable substrates.

Walking Off the Beaten Path

- Watch where you step. Watch for holes, old barb wire fences, and animals that will bite you.
- Long pants, long sleeved shirts, boots or sturdy shoes will protect against unseen hazards in field.
- If using machete or other tools for clearing a path be sure to wear protective gear, clothes, and gloves that will protect you
- Going down hills and streambanks. Look ahead and pick your path. Pick the path you feel safe with taking. Skiers zig zag to control their descent coming down a big hill. Same applies for hiking.
- Know where you are at all times! Where is the truck? Could you get back to the vehicle without your co-worker?

Dealing With The Heat

- Drink plenty of water
  - General rule: If you are thirsty, then you need water.
- Protect against sunburn
  - Use sunscreen, hats, and long sleeved shirts
  - Protects against skin cancer and helps avoid dehydration.
- Heat related injuries – heat exhaustion and heat stroke
  - Heat exhaustion: pale cool skin, headache, nausea, weakness
  - Heat stroke: red, hot skin, change of consciousness, shallow breathing – **CALL 911**
  - General care: cool victim down gradually
- AVOID these heat related injuries by drinking plenty of water and taking breaks as necessary. Also, use the BUDDY SYSTEM

Dealing With The Cold

- Wear several layers of clothing
- Wear a hat, scarf, and mittens or gloves
- Stay dry
  - Take a change of clothes if there is a possibility you might get wet
  - Neoprene waders and gloves if working in water
- Cold related injuries – Hypothermia and Frost Bite
  - Hypothermia (abnormally low body temperature): uncontrollable shivering, cool bluish skin, disorientation, slurred speech
  - Frost Bite (freezing of the tissue): numbness, white or grayish yellow color skin, skin unusually firm or waxy
  - General care: Hypothermia – gradually warm the core body temperature. Frost Bite – gradually warm the extremities, but check for Hypothermia first
- AVOID cold related injuries by taking breaks in warm, dry shelters as necessary and staying hydrated

Close Encounters – Animals and Plants

- Snakes. General rule of thumb - leave snakes alone!!! Ohio has three species of venomous snakes. All inject a hemotoxin, which will cause tissue damage.
  - If bitten by a snake. Remain calm and go to the hospital.
- Ticks – Lyme Disease: Remove ticks if you see them on you. Be sure to remove the head.
  - Long pants tucked into socks and insect repellant
- Mosquitos - West Nile Virus: Insect repellant, long sleeved shirts, long pants
- Do not pet dogs, cats, horses, etc. in field. Getting bit is possible - even from the friendliest of animals.
- Poison Ivy / Poison Sumac/ Giant Hogweed:
  - Gloves, long pants, and long-sleeved shirts
  - Use commercial products like TECNU to clean off oil after contact.

Close Encounters 2 – Humans

- Be friendly but cautious of those you encounter in the field. Identify yourself and tactfully determine who you are talking to
- Encounters with people are the most unpredictable. Use your best judgment and act to protect yourself.
  - BUDDY SYSTEM should prevent most incidents.
- Farmers and others working in the field. They are working and will not be watching out for you.
- Hunters and others with guns. Use your best judgment. Probably best to leave and return site later after the person with the gun is gone.
- If something happens - tell your supervisor immediately.

Scenarios

Scenario #1

- After working in the field for several hours on a hot day your co-worker complains of a headache and nausea. They insist there is no need to discontinue sampling and that they will be ok after a short rest.
- What do you do and why?

Scenario #2

- You and a coworker have been granted permission to collect soil samples from private land. You drive into the site, and before you begin sampling a man drives up and starts yelling at the both of you.
- What do you do and why?

Scenario #3

- You are collecting samples and have one more hour of sampling before finishing. Then all of the sudden you see lightning in the sky.
- What do you do and why?

Summary

- Be PRO-ACTIVE with respect to your safety.
- The BUDDY SYSTEM is the BEST! Work together and watch out for each other.
- Err on the side of caution. Your safety is more important than the data.

Questions???