

## Cautionary Notes About Field Camp

This document is not designed to frighten you, but to ensure that you are aware of the risks inherent in working in wilderness areas. The field camp will be taking place primarily in desert environments and at higher elevation (ca. 5,000 feet) and lower oxygen levels than most people are used to. Field camp can be quite strenuous at times and will involve long days of hiking in mountainous, or at least very hilly, terrain at altitude. Therefore, we warn all field campers that you should prepare yourself for physical exertion BEFORE coming to field camp. This is not to say that field camp will be grueling, but it may be difficult for anyone not used to extensive physical exertion. Even if you feel you are in good shape, we recommend starting on an exercise routine at least a month prior to leaving for field camp. Such a routine should include at least 30 minutes of cardiovascular exercise, for example jogging, biking, or swimming, several times a week. Stair machines are particularly effective for this kind of work.

### Safety

The Department of Geosciences at UT Dallas recognizes that field work can be dangerous, especially in desert environments and rough terrain, and that serious injuries can occur. We take this issue very seriously. UTD faculty and staff members at field camp have received training in wilderness first aid from the American Red Cross. In the event of serious injury in the field, any and all effort should be made by the partner(s) of the injured to report the incident to a UTD official or otherwise qualified personnel<sup>1</sup>.

All field campers will be required to sign a medical release form and information sheet prior to departing for New Mexico. These forms will be provided at the rendezvous at UTD.

### Advice on Working in Desert Environments

The following guidelines are designed for your safety and should not be taken lightly. We take this matter VERY SERIOUSLY. Don't become another statistic by learning the hard way how dangerous the desert *can* be. The desert is an excellent place to do field work as long as precautions are taken and good sense is used. Be responsible (for yourself and others) and we will all have fun.

**Water** Dehydration can be a severe health problem. Always carry plenty of water, in fact more than you will need. The consensus is a minimum of one (1) gallon per person per day. Don't be fooled: even if you are not very active, you are still sweating. In deserts, sweat commonly evaporates before sweat droplets form on the skin. So, drink lots of water at regular intervals all day long. Your body can only absorb about 0.5 liters of water in half an hour, so the key is to drink water throughout the day, not all at once. Keep your water bottle in an accessible place, like on your belt, not at the bottom of your pack. At camp, continue drinking. The best indicator for good hydration is frequent urination. If you don't pee in the desert, you are SERIOUSLY DEHYDRATED!

**Electrolytes** Generally speaking, water is not enough. Your body also needs to replenish the necessary electrolytes (Na, K, Ca) lost through perspiration. Carry sport drinks or electrolyte tablets to replace necessary salts. If using sport drinks,

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<sup>1</sup> Any participant accredited as a Physician, Registered Nurse, Firefighter, Police, or Emergency Medical or Emergency Response Technician.

dilute them to about half strength so they do the job and last longer. Plus many sport drinks have lots of sugar, which is bad in a hot environment, so diluting will decrease the sugar intake. A good sugar-free substitute for sports drinks is Pedialyte® children's electrolyte drink.

### **Blisters**

Heat causes feet to swell and sweat, which are primary causes of blisters, in addition to “unbroken”, poor fitting, or loosely tied boots that allow feet to slip. Carry blister treatment with you. We recommend 2 items:

- Band-Aid Advanced Healing for Blisters – self adhesive, flexible pads for covering “hot spots” and comforting minor blisters. The pads are waterproof and stay on for days. This is the only real product endorsement you will find. They are far superior to moleskin.
- 2<sup>nd</sup> Skin® (actually a sterile, gel-coated burn dressing) for severe blisters.

Both of these products are available at drug stores like Walgreens. The best preventive techniques for blisters are clean, dry socks and well fitting, well broken-in boots.

### **Sun**

The desert is no place to work on a sun tan. The desert sun can cause sunburn much faster and more severe than in other environments especially where we are at high elevations, so limiting sun exposure is critical. Sunburn is painful, and a vitamin-D overdose from sun exposure can make you physically sick. Wear a hat at all times in the field, preferably one that provides protection for your neck and ears (i.e., not a ball cap). Otherwise, a bandana around your neck can help keep the sun off. ☐ Wear long sleeved shirts and make sure to cover all exposed skin, including lips, with sunscreen of at least SPF 15; most lip balms come with sunscreen, but make sure when you buy it. Sunscreen needs to be applied before going out into the sun and reapplied at least once later on (i.e. at lunch).

### **Heat**

Desert temperatures can reach over 125° F (52°C) in some locations, and in many deserts, elevation makes matters worse. In summer, wear light-colored, loose fitting, layered clothing to slow dehydration and minimize exposure.

### **Cold**

Deserts are notorious for blistering heat, but commonly unrecognized for chilly nights. Desert temperatures can drop to freezing at night, so be sure to bring pants and a light coat, fleece jacket, or sweatshirt. Gloves and a warm hat are also recommended.

### **Rain**

Although deserts are known for aridity, sudden rainstorms are common and lead to flash floods. Be aware of what the sky is doing: look for cumulonimbus clouds (tall, anvil-shaped clouds, that look black from below and white from a distance on the sides), thunder, and lightning. If rain is imminent, get out of any canyons, streams, dry washes, etc., and move to higher ground. Narrow canyons are excellent places to escape the heat, but the last place you want to be when it starts raining.

### **Exertion**

When hiking uphill, take small, slow steps. This will keep your muscles from

getting overexerted and prevent lactic acid build-up, which causes the “burn”. If you start feeling the burn, take a break. Then resume walking, but slow down and make every other step a rest step.

**Wildlife**

The desert may seem lifeless, but contains abundant plant and animal life. Some of the more nasty varieties of plants include lechugilla, cactus, and century plants, all of which wield large spines that will easily penetrate skin and thin shoes. Besides the pain of a puncture wound, some of the spines are coated with mild toxins that can cause inflammation and a painful swelling. Animals to be aware of include scorpions, tarantulas, spiders, rattlesnakes, and centipedes, all of which are or can be poisonous. Also, look out for javelina (feral pigs), skunks, raccoons, and although we are unlikely to see any, mountain lions and black bears. Stay clear of them all (especially the skunks). **WARNING!** Before you pick up a rock, turn it over with your rock hammer or foot to make sure that a scorpion or spider is not lurking beneath waiting for a delicious meal of succulent human flesh.

**Heat exposure problems**

We expect all participants to be aware of the potential danger of “heat stroke”, how to look for signs of it, and how to begin treating it. **THIS IS A SERIOUS MATTER!** Heat-related health problems (including dehydration) are the number one cause of illness and death in desert environments. Heat coupled with dehydration can lead to heat exhaustion, heat stroke, coma, and possibly death. If you, or your partner(s), exhibit symptoms of heat related problems, let others know and do something about it immediately.

	Symptoms	Mental Status	Core Temperature	Treatment
HEAT CRAMPS	<ul style="list-style-type: none"> <li>Painful muscle contractions, usually in hamstrings or calves</li> </ul>	Alert	~100°F (38°C)	<ul style="list-style-type: none"> <li>Rest</li> <li>Shade</li> <li>Cool water</li> <li>- Replace electrolytes</li> </ul>
HEAT EXHAUSTION *excessive water loss	<ul style="list-style-type: none"> <li>Headache</li> <li>Nausea</li> <li>Fatigue</li> <li>Dizziness or Lightheadedness</li> <li>Actively sweating</li> <li>Cold, clammy skin</li> </ul>	Usually conscious (may faint)	>102°F (39°C)	<ul style="list-style-type: none"> <li>Shady place or AC room</li> <li>Keep cool</li> <li>Increase fluids &amp; electrolytes</li> <li>Cold wet towels</li> <li>Fan</li> <li>Drink cool water with electrolytes</li> <li>- May require IV fluids</li> </ul>
HEAT STROKE *Failure of body's heat controlling mechanisms. <b>EMERGENCY!</b>	<ul style="list-style-type: none"> <li>Headache</li> <li>Flushed skin</li> <li>Dry skin</li> <li>Warm skin</li> <li>Rapid, bounding pulse</li> </ul>	<ul style="list-style-type: none"> <li>Incoherent speech</li> <li>Disorientation</li> <li>Confusion</li> <li>Aggression</li> <li>Delirium</li> <li>Seizures</li> <li>Possible unconsciousness</li> </ul>	>105°F (41°C)	<ul style="list-style-type: none"> <li>Immediate action necessary</li> <li>Shady place or AC room</li> <li>Remove most of clothes</li> <li>Apply cool, wet towels</li> <li>Fan to increase air flow</li> <li><b>Transport to Emergency Room</b></li> </ul>

The best advice is to drink lots of cool water, reduce sun exposure, and don't over-do it.