

# SAFETY OFFICE NEWSLETTER



The WVU HSC complex houses over 300 research laboratories.

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Stephen Alway
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## Small Spill Clean-up in HSC Laboratories

It is important to know what to do in the event of a spill. Effective planning and training are necessary to prevent and handle a spill effectively. If a chemical spill should occur, a quick response with a stocked chemical spill kit will help minimize potential harm to personnel, equipment, and laboratory space. HSC employees who work in laboratories should be familiar with the properties and hazards of materials with which they work. In the event of a small chemical spill, the individual(s) who caused the spill is responsible for a prompt and proper clean up. It is also their responsibility to have spill control and personal protective equipment appropriate for the chemicals being handled readily available.

HSC Laboratory personnel should properly prepare and plan for small spills in the laboratory. The following information provides tips to ensure that small laboratory spills are handled properly.

### Prevention

The majority of chemical spills can be prevented or minimized by:

- Maintaining a neat and organized work area
- Ensuring staff has adequate knowledge and training regarding job procedures, emergency response and spill clean-up
- Performing a laboratory procedure review prior to conducting new experimental procedures



- Keeping reagent chemical containers sealed or closed at all times, except when removing contents
- Ordering reagent chemicals in plastic or plastic coated glass containers whenever possible
- Using secondary containment to store and move chemicals
- Review and be informed on the location of MSDS forms and other references that can help in cleaning up spills, and also the locations of all safety equipment in the laboratory

### Planning

It is essential to safely and properly handle a spill. Individuals should prepare themselves for small spill control. They should:

- Acquire sufficient quantities and types of spill control materials to contain any spills than can be reasonably anticipated.
- **All HSC laboratories should have a spill kit!**
- Place spill control materials in a readily accessible location, close to the areas where chemicals are used or stored. Make sure to have these items labeled and inform all personal in the laboratory on their location.
- Laboratory Workers (staff, students, and summer workers) shall have laboratory safety and small spill response training.



### Small/Low hazard Spills Can Be Handled by Laboratory Personnel

Laboratory personnel can clean up the majority of chemical spills that occur in the lab. If a hazardous material spill is less than one liter and has a hazard rating below 2 in all hazard categories, the following procedures should be followed. In the event of a larger or more hazardous spill - pull fire alarm, evacuate the building and call 9-911. Detailed emergency response procedures for large or extremely hazardous spills will be in the Winter Newsletter.

## Small Spill Clean-Up in HSC Laboratories (Continued)

- Immediately notify the lab supervisor and others in the area of the spill.
- Restrict access and mark the area to prevent others from coming in contact with the spilled material. Depending on what type of chemical is spilled, it may be necessary to evacuate the lab until the material is effectively cleaned up.
- Protect floor drains or other means for environmental release. Spill socks and absorbents may be placed around drains, as needed.
- Appropriate absorbent will vary depending on the chemical class. Vermiculite can be used for acids, bases, and solvents as it is a multi-purpose absorbent. Distribute the best absorbent over the entire spill area, working from the outside, circling to the center. This reduces the chance of splashing or spreading of the spilled chemical.
- When the spilled material has been absorbed, use a brush and scoop (spark-resistant if flammable materials are involved) to place materials in an appropriate bag, which is housed in a secondary container (spill container, not regular trash). A chemical spill **MUST NEVER BE MIXED** with anything other than itself!



- A spill may involve broken glass. Be careful not to get cut during the clean-up process. Use tongs to pick up the broken glass and place it in the hazardous waste bag or container.

- Carefully place the secondary container in a hood or other properly ventilated area until the chemical waste can be collected. Label the container.
- Once the spill is cleaned up, it is necessary to neutralize any remaining residues and decontaminate the area. This can be accomplished by using an acid or base neutralizer for corrosive chemicals or using warm, soapy water for other chemicals. NOTE: Water should never be used for chemicals that are water reactive. The materials used in cleaning up the residue must be placed in a bag/container and stored with the rest of the spill.
- A Hazardous Chemical Disposal form will need to be filled out in order for it to be picked up. This form can be found on the HSC Safety Office's website under *Forms and Instructions*. Remember that chemical spills do not get disposed of with the everyday trash in the laboratory.
- Formally, report all spills to your supervisor and/or the principal investigator.
- Restock clean-up materials used.
- Evaluate the reason for the spill and effectiveness of the response and clean-up. Take steps to prevent future incidents.
- Notify the HSC Safety Office at 293-6924. Additional information can be found at: <http://www.hsc.wvu.edu/safety/>



## Get to Know a HSC Researcher

### Favorites:

**Food:** Salsa; cheese cake

**Music:** Country & Southern gospel

**Movie:** Anyone of Arnold's action flicks *Terminator*, *Predator* etc.

**Book:** The Bible.

### Travel Destination:

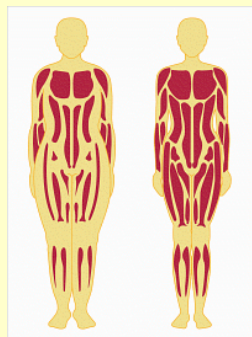
Banff National Park  
(Alberta Canada)



Stephen Alway, Ph. D.  
Exercise Physiology

### Describe your research in 50 words or less.

Our lab studies mechanisms that are involved in



the aging associated loss of muscle mass and muscle function, which is called "sarcopenia". We are particularly interested in strategies for reducing sarcopenia through exercise and diet.

**If you received a five million dollar grant for research,**

### what would your dream research project be?

Calorie restriction is one of the only ways known to increase the lifespan of non-human models, but this has not been tested in humans. A long term (dream) project would be to calorie restrict a group of persons over their entire life time and to follow health outcomes over time (no cheese cake allowed for those folks!). In another piece to this project, I would like to be able to study if in humans, exercise over the entire life span is needed for long term benefits, and to what degree life span and general function might be improved if exercise is started at various parts in their lives (e.g., start at 20, 30, 40 etc to look at the effects at age 80 yrs). Finally, the third piece would be a group that combined caloric restriction combined with exercise beginning at aged 20, 30 etc. then look at them when they are 80.

Unfortunately, one cannot live long enough to see this type of study to its conclusion. Maybe the loss of cheesecake for the investigator is not worth it.

### What is one thing that people might be surprised to know about you?

In another life when I was a graduate student (i.e., before NIH applications) I had qualified to compete at the World Bodybuilding Championships. However, I decided that I was going to pursue a life in science and not sport, it was a better career choice to turn down this opportunity to compete, to instead participate in a National Scientific Meeting. So, instead of competing at the World Championship in France that year, I gave a research talk and accepted a National research award in Physiology in Montreal Canada.

### What are some of the safety issues in your laboratory?

Our lab like most, have multiple safety things that we always are concerned about. This ranges from working with any chemicals in many different assays, disposals of wastes, and sharps in an appropriate manner and working with anesthesia in animals.

### What do you like most about working at WVU?

In general, I have found that the faculty working at WVU was friendlier than most other institutions I have visited or participated as a faculty. This collegiality, along with the potential for growth (scientific growth as well as physical spaces to grow), attracted me to WVU.

### What do you like most about West Virginia?

Well, it is not the condition of most of the roads here. However, I have always loved the mountains, and there are plenty in West Virginia.



# Storing Flammable Liquids In Refrigerators

Any flammable liquid defined by the fire code as having a flash point of less than 100°F (38°C) must be stored in a refrigerator. Due to low cost, ordinary household refrigerators are what most laboratories contain. Flammable liquids must never be stored in this type of refrigerator. Explosions, injuries, and costly laboratory fires have resulted from this risky practice due to the potential of vaporization of these materials in the closed space and explosion of those vapors from a spark generated by electrical contacts from relays, switches, or thermostats that could ignite flammable vapors inside the refrigerator.

To prevent such incidents from happening, there are two types of refrigerators to consider; a Flammable Storage Refrigerator and an Explosion Proof Refrigerator.

## Flammable Storage Refrigerator:

- UL approved for storage of flammable chemicals
- No electrical sparking devices, relays, switches, or thermostats that could ignite flammable vapors inside the cabinet.
- May incorporate design features such as thresholds, self-closing doors, magnetic door gaskets, and special inner shell materials that control or limit the damage should a reaction occur within the storage compartment.
- A label stating "Flammable Materials Refrigerator: Keep fire away" can identify such refrigerators.



## Explosion Proof Refrigerator:

- Rated UL explosion-proof
- Are similar in design to the flammable storage units, but also have all operating components
- Sealed against entrance of explosive vapors
- Electrical junction boxes are also sealed after connections are made
- Approved for storage of volatile materials in areas with explosive atmospheres



Label refrigerators in the laboratory that are not explosion proof or "Lab Safe" with the signage stating: **Caution – Unsafe to Store Flammable Solvents**. All contents in the refrigerator/freezer should be labeled with the name of the material, amount, person responsible and date of storage. The contents should be tightly sealed and placed in secondary containment to further prevent vapors from escaping.

**CAUTION**  
**Unsafe to Store**  
**Flammable**  
**Solvents**

### Do You Know?

Sodium azide waste should never be put in sinks or down the drain because it reacts with copper, lead, and other heavy metals to produce explosive compounds!

Contact the HSC Safety office at (304) 293-6924 or [HSCsafetyoffice@hsc.wvu.edu](mailto:HSCsafetyoffice@hsc.wvu.edu)

Please feel free to visit our website at [www.hsc.wvu.edu/safety](http://www.hsc.wvu.edu/safety)

