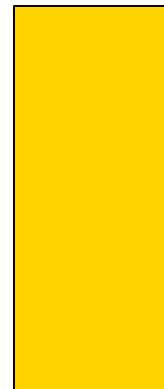


Spencer Laboratory

Safety and Building Information

This presentation provides specific information pertaining to Spencer Laboratory. It is also a supplement to other safety training sessions.



Evacuation Protocol

- When an alarm event occurs, promptly evacuate the building. There are evacuation signs on each floor.



- Remember to close the door and turn the lights ‘OFF’ as you leave; this will help containment efforts in the event of a fire, or hazardous gas release.

- If the power goes out, and does not come back ‘ON’ within about a minute, evacuate the building, and wait for the emergency responders to give the okay to enter back into the building. Emergency lights will come ‘ON’ , in the event, to aid in quick and safe exiting.
- Minimizing property damage during an emergency is important, but your safety is number one!

- During the evacuation, you will hear a pulsing alarm sound and see flashing lights.



- Remember to **NOT** use the elevator at any time during the evacuation.



- Evacuating to the meeting area allows the emergency responders to move unimpeded by and through the building. Be sure that all occupants of your office or lab group meet here for a head count first to ensure that everyone is safely out the building; you can then leave.



The Du Pont Hall loading dock area behind Spencer Laboratory is the gathering place.

Be sure to stand far enough back to allow the emergency responders to have easy access.

Emergency Alert

- When an emergency situation occurs, there are **RED** phones that directly connect to campus Public Safety.



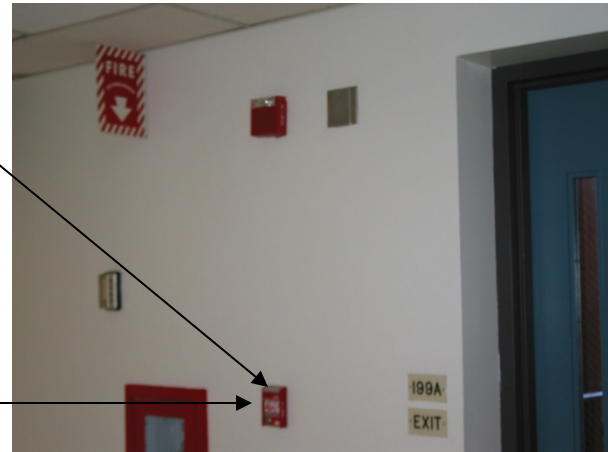
← Inside

Outside →



- You can also dial 911 (not 9-911) from a regular phone.

- If a fire event occurs, there are several **RED** alarm stations, near doorways, in the building. These will trigger the building alarm and signal campus Public Safety.
- To activate, lift the upper latch and then pull the handle.



Action Supplies

- For minor cuts and scrapes, there is a first aid kit near the bathrooms on each floor.
- For other injuries, contact Student Health Services @ 2226.



- For minor chemical spills that may occur in the lab, there is a spill control station on the third floor next to the water fountain.
- For larger or more hazardous spills, contact Facilities dispatch @1141.



Lab Safety

- When entering a lab, be sure to wear ANSI Z87.1 approved safety glasses at all times. These are kept inside the lab near the doorway.
- Maintain a Materials Safety Data Sheets (MSDS) binder in the lab near the entrance door.



- An MSDS provides important information for safe use, Personal Protective Equipment (PPE) selection, and guidance to responders during emergency situations and medical treatment procedures.
- Wear the appropriate gloves for the hazardous material(s) used (do not re-use gloves); avoid contact with surfaces outside the lab; exercise caution during removal; discard contaminated gloves in laboratory waste container.
- It is important, also, to maintain a neat and orderly work area to both minimize physical hazards and maximize space efficiency.



Chemical Storage

- Some labs use acids and organic solvents. Keep these separated and stored in an approved cabinet.
- As with all chemicals and hazardous materials, keep the contents in the original container.
- Do not store containers at or above the shortest eye level. This is especially true for open containers or beakers with liquids!



Chemical Waste

- Store chemical waste in a properly labeled plastic container.
- Some labs have biological chemical waste.



- Use a sharps container to discard needles and razor blades.



- Use a plastic-lined box for contaminated lab waste and broken glass.



Hazardous Materials Shipment

- Contact the Department of Environmental Health & Safety at 831-8475 for approval when shipping hazardous materials or if you have concerns about a received package.
- Only sign for packages in good condition; otherwise, the responsibility of any damage or contamination is on you and UD rather than on the supplier or shipper.

Compressed Gas Cylinders

- When transporting compressed gas cylinders, use an appropriate cart.
- First, be sure the screw cap is threaded on the cylinder before moving. Then, move the cylinder onto the cart, and attach the restraining chain/strap.
- Remember to **NOT** ride in the elevator with the gas cylinder; rather, meet up with it via the stairs. Nitrogen, for example, could leak, displace oxygen, and thus cause asphyxiation. In addition, if you see a cylinder on a cart, wait for the elevator to return empty before using.



- Once in the lab, secure the compressed gas cylinder to a mount. There are wall, bench, and portable floor mounts available. Always cap an unused cylinder.



- Make sure you use the appropriate valve regulator (check the CGA number needed for that gas).
- Compressed gas cylinders are charged to 2000+ psi, and are, thus, highly energetic!

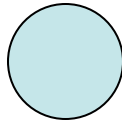
- The loading dock area behind Spencer Lab is where the compressed gas cylinders are stored.
- Remember to mark the empties and leave a small amount of gas to minimize internal cylinder contamination.



Lasers and Safety

- Some laboratories may have lasers or other high energy radiation sources in use.

Beam Spot

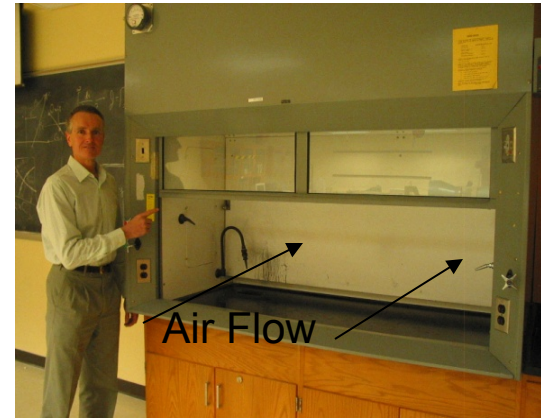


- Lasers can operate in both the visible and invisible part of the spectrum. Some function with a continuous output beam while others are of the pulsed-beam type.

- Lasers are also categorized/labeled with a CDRH (IEC) Class rating: I (1), IIa (2a), II (2), IIIa (3a), IIIb (3b), and IV (4), with Class IV (4) being the most powerful.
- All lasers require some administrative controls (e.g., safety instructions and work practices), but this mainly applies to class IIIb (3b) and IV (4) lasers. Class IIIb (3b) and IV (4) lasers also require engineering controls (e.g., safety interlocks and beam stops).
- Be careful when using laser pointers as these contain a Class IIIa (3a) laser.
- Be sure to wear wavelength-specific (see side of goggle for the Optical Density rated wavelength range) ANSI Z136.1 laser goggles for all class IIIb and IV lasers.

Fume Hoods

- Use a certified fume hood when preparing chemical mixtures or hazardous materials.
- The use rating of a fume hood is based on the feet/min air flow value at the opening. This flow rate is determined for a given sash (door) vertical height (horizontal separation on some models) which sets the cross-sectional area.
- It is important to not clutter the inside of a fume hood with too many items as this can generate eddy currents at the opening to disturb the laminar flow and thus impede the intended function of fume removal.



- Fume hoods have several functional controls and utilities.

Pressure Gauge

Inside Light

Air Valve
Water Valve

120VAC Power

Alarm

Exhaust Blower

Natural Gas



- Some fume hoods may also have vacuum and 208VAC power.

Recycling

- You can place all single stream recycling items (i.e., paper, plastic, glass, and cardboard) in any blue recycling bin around campus.
- Accepted materials include: newspaper, copier paper, brown bags, junk mail, plastic bottles/bags, clear/green/brown glass bottles, and aluminum cans. Visit www.udel.edu/recycling.



Final Words

- When you are the last to leave a room, be sure to lock the door. Also, before leaving, do a quick check to see if anything was left 'ON' that does not need to be.
- Before performing lab activities, conduct a hazards assessment to expose any potential safety issues that may affect you or others.
- Remember to wear ANSI 87.1 approved safety glasses, splash goggles, or ANSI Z136.1 approved laser goggles, and any other personal protective equipment (PPE) in the lab as applicable (consult the MSDS).
- If you are unsure about a lab procedure or have a safety concern, you can reach me, Roger, at (302) 831-8455 in room 335 Spencer Lab (rrogerr@udel.edu).