Laboratory Emergency Preparedness
Checklists for Advanced Planning, Preparing to Close & Safe Re-Entry

Disruptions, utility outages, and severe weather events may require a laboratory closure. These events have the potential to impact research activities. Sometimes these disruptions are predictable (e.g., significant weather event) and sometimes they occur with little to no advanced warning (e.g., sudden utility outage). Advanced planning and preparing for these situations will protect laboratory materials, equipment, animals, and research from losses, and will minimize the risk of hazardous conditions developing during the temporary closure.

Reduced Services during a Temporary Campus Closure

During utility disruptions and significant weather events, buildings may lose power, requiring the activation of limited backup power systems. Emergency lighting only lasts for 90 minutes and may not be available in all labs. Cell phone service can be unreliable. If this is a regional event (e.g., blizzard, hurricane) local emergency support services may also have delayed response times to campus. During campus closures, there may also be limited resources at the University Health Center. These reductions in normal services can extend hours to weeks, depending upon the severity of the disruption. Therefore, when the campus is closed for significant events, it is advisable that research operations involving hazardous materials be suspended.

The following guidance outlines critical actions to take when preparing to temporarily shut down laboratory operations in the event of a **facility service outage** (e.g., ventilation, electrical, water), **pending weather event** (e.g., hurricane, snow/ice storm) or other **extended absences** (e.g., winter recess, extended research travel or conference attendance). The guide has three sections: actions for general advance preparation, actions to take to when it is identified that labs must temporarily close, and actions to take when returning. Many items will not apply to every laboratory. Check N/A, or customize this form, as needed.

Advanced Planning: Prepare Before an Event
[On-Going]

The items listed below are actions and topics laboratories should consider discussing and addressing well in advance of an event. The actions may take time to complete.

Advanced Planning Actions	Complete	N/A	Notes
Ensure all laboratory staff obtain prompt notification of pending weather conditions, utility outages, and other events that affect campus closures. • Register cell phones for UMD Alerts at: https://alert.umd.edu/ UMD emails are automatically enrolled in UMD Alerts; however, during power outages, the only communication may be through cell phones. Registering your cell phone ensures you receive prompt updates. • Visit https://prepare.umd.edu/ to sign up for UMD emergency preparedness social media accounts such as @prepareUMD.	☐	☐	
Develop a plan for notifying all affected laboratory personnel, and other appropriate personnel (e.g., department chair), prior to and during a closure. Keep this list in an accessible location. All affected students, faculty, staff and visiting scientists should have the Principal Investigator's contact information readily available.	☐	☐	

Advanced Planning Actions	Complete	N/A	Notes
Establish roles for laboratory personnel and identify essential functions and responsibilities, such as shutting down and restarting the lab after a closure. Identify who has authority to make decisions, under what conditions. Identify activities that are restricted or prohibited during the event. Determine if there are conditions that would require external reporting/notifications and who is responsible for making these reports. Train personnel in these roles and responsibilities.	☐	☐	
Ensure laboratory staff have key contact information for the campus. Two important campus contacts to ensure are programmed into cell phones: • Report emergencies to UMPD (301-405-3333 or #3333) • Place work requests through Facilities Management Customer Response Center (FM CRC) at 301-405-2222.	☐	☐	
Identify specific procedures for responding to the loss of various utilities (e.g., water, steam, electrical, ventilation) and shut downs for variable amounts of time (e.g., less than 24 hours, several days, more than a week). If particular areas of the spaces are prone to flooding or water intrusions, place work orders with FM CRC in advance.	☐	☐	
Identify critical research equipment and plug into emergency electrical outlets. Emergency electrical outlets are red and provide emergency power to equipment during a power outage. If this is not possible or available, investigate the possibility of installing an appropriate Uninterruptible Power Supply (UPS) to deal with short-term outages. Facilities Management can provide support to determine the size of the UPS needed for the laboratory equipment.	☐	☐	
Develop written procedures for safely shutting down in-process research operations. Procedures should be readily available and should include securing hazardous operations and hazardous materials such as chemicals, biological materials, and radioactive materials. (See the "Prepare" checklist below.) Train personnel in their specific roles in shutting down equipment and securing experiments.	☐	☐	
Identify equipment that requires special procedures to restart after a power outage. The procedures should be readily available to the laboratory personnel responsible for restarting this equipment.	☐	☐	
Develop a maintenance schedule for safety sensors or alarm systems. Perform a test of the monitoring alarm in advance of the day the lab is to be closed. Allow adequate time to address any repairs needed.	☐	☐	
Review approved plans for the special precautions needed to ensure the care and feeding of research animals where there are disruptions to power, ventilation or environmental controls.	☐	☐	
Periodically back up critical research data.	☐	☐	

Advanced Planning Actions	Complete	N/A	Notes
To minimize materials that could be involved in an incident, periodically dispose of unwanted chemicals and ensure timely requests for waste pick-ups when waste containers are full.	☐	☐	
Ensure emergency contact information is up to date in the BioRAFT Safety Management System, ESSR's Laboratory Signage System and on laboratory entrance postings.	☐	☐	
Survey potential external entry points of water intrusion due to inclement weather including windows, doors, vents, wall air conditioners, wall penetrations, etc. Place work orders to report facility issues identified. Contact Facilities Management Customer Response Center at 301-405-2222 for support.	☐	☐	
During campus closures building access may be suspended, or limited to card-swipe only. Essential personnel and those individuals, who plan to remain on campus during a closure, should work with their department administrators to ensure their building access cards allow access during non-routine hours.	☐	☐	
Identify emergency equipment (flashlights, spill kits) that may be needed, who is responsible for maintaining them and where they are stored.	☐	☐	
Routinely review preparedness procedures with the laboratory staff to adjust based upon needs as research changes.	☐	☐	
Lab-specific advanced planning preparations:	☐	☐	

Preparing to Close: What to do Before the Event

[1-2 Days Before or Immediately]

Follow the laboratory's specific written procedures to shut down the laboratory. Specific actions should be appropriate for the scope of the situation expected. While power is off, work with hazardous materials, ignition sources or work requiring mechanical ventilation must not be conducted. Considerations for laboratories include (may not apply to all labs):

Preparing to Close Actions	Complete	N/A	Notes
Ensure notification to affected laboratory personnel. Remain in communication with laboratory members for addressing questions or concerns and establishing return procedures.	☐	☐	
Work with staff from the Department of Laboratory Animal Resources to ensure arrangements for the care and feeding of laboratory animals.	☐	☐	

Preparing to Close Actions	Complete	N/A	Notes
Terminate ongoing, in-process experiments. Postpone starting any new experiments.	☐	☐	
Safely stop work with biological materials. Decontaminate surfaces and autoclave infectious wastes, if time permits.	☐	☐	
Safety stop work with radioactive materials. Conduct after-use surveys and consider conducting monthly laboratory surveys to ensure surfaces are free from contamination prior to exiting the lab.	☐	☐	
Close all chemical containers. Check to ensure they are properly labeled to identify the contents and secure the containers in their proper storage locations.	☐	☐	
Stop work within chemical fume hoods. Close the sashes.	☐	☐	
Safely store and secure all hazardous materials and regulated research materials (toxins, radioactive materials) to prevent breakage and theft.	☐	☐	
Ensure all gas cylinders are secured. If the campus closure is expected to last a long time, determine if unhooking and capping gas cylinders is appropriate. If a low flow of an inert gas is used to blanket a reactive compound or mixture, then the lab may need to maintain the flow of gas "on". This should be part of a preapproved written procedure for this material or process.	☐	☐	
Ensure cryogenic liquids are properly vented.	☐	☐	
Verify that any safety sensors (e.g. toxic gas alarms, low oxygen sensors, required security alarms) are operating within specifications.	☐	☐	
Check pressure, temperature, air, or moisture, sensitive materials and equipment. Reactions in progress may need to be terminated depending on the type of closure and the duration expected.	☐	☐	
Ensure appropriate storage for condition sensitive materials. For example, store water-reactive materials so they that are unlikely to become wet in case of flooding or sprinkler activation.	☐	☐	
If possible, shut off circulating water, chillers, water polishers, etc. to prevent possible flooding.	☐	☐	
Turn off heat-generating equipment (e.g., hot plates, stir plates, ovens) and nonessential electrical devices.	☐	☐	
If time permits, request removal of regulated waste containers that are ready for disposal.	☐	☐	

Preparing to Close Actions	Complete	N/A	Notes
Check that refrigerator, freezer, and incubator doors are tightly closed. Ensure critical storage areas (incubators if cultures are to be maintained in vitro) are on backup power. Ensure notification for temperature alarms, as appropriate.	☐	☐	
Refill dry ice/liquid nitrogen storage tanks for cryogenic storage equipment.	☐	☐	
Consider adding dry ice or cold packs to freezers that cannot be connected to emergency power, or securing a supply of dry ice in the lab that can be added if necessary.	☐	☐	
Remove or secure any research equipment that may be in an outdoor area or rooftop location.	☐	☐	
If flooding is a possibility, elevate items off the floor and low shelving, especially electrical equipment and extension cords.	☐	☐	
Secure lab notebooks and critical research documents. Consider saving digital copies in multiple locations.	☐	☐	
Turn off and disconnect equipment and electronics. Power may cycle on and off or it may return with momentary "surges" or "spikes" that can cause damage to sensitive equipment if it is left plugged in. Equipment that cannot be unplugged should have surge protection device installed.	☐	☐	
Make sure all windows and doors are secured. Move research materials away from windows, if rain or wind is a factor.	☐	☐	
Exit the laboratory, turn off the lights and close the door. If it is safe and within procedures to do so, lock the laboratory door and offices.	☐	☐	
Lab-specific immediate preparation procedures:	☐	☐	

Safe Re-Entry: What to do After the Event

When reentering the laboratory after a temporary shutdown or extended closure, enter the lab with a sense of caution. Look through entry-door windows to see if any materials may have been damaged or if water or liquids are present on the floor or surfaces. Listen for any local alarms indicating a safety issue.

Safe Re-Entry Actions	Complete	N/A	Notes
Return to the laboratory buildings only when it is safe to do so and entry has been authorized.	☐	☐	
Do not enter a laboratory if an alarm is sounding. Contact UMPD 301-405-3333 or #3333 to report the alarm.	☐	☐	

Safe Re-Entry Actions	Complete	N/A	Notes
If you discover a hazardous condition that poses a threat to you or to others, such as a hazardous material release, isolate the hazard (e.g., close the door to the lab), notify occupants in the area, activate the appropriate incident response action, exit the building if required, and call UMPD 301-405-3333 or #3333 to report the situation. Use a blue emergency phone outside the buildings, if necessary.	☐	☐	
Check equipment that may have been affected by a power disruption as soon as possible. Keep refrigerator and freezer doors closed until temperature levels return to normal. Check for leaks that may have occurred when the temperature was compromised.	☐	☐	
If any damage has occurred as a result of the closure, submit an insurance claim to ESSR Risk Management within 24 hours of discovering the loss. Insurance claims will only be considered if they are filed within 60 days of the closure event.	☐	☐	
Do not use laboratory equipment, such as a chemical fume hood or biological safety cabinet if the alarm is sounding or the equipment is not working properly. Contact Facilities Management Customer Response Center at 301-405-2222 for support.	☐	☐	
Conduct a hazardous material inventory to ensure no loss of material (chemicals, radioactive material stocks, toxins, controlled substances, etc.).	☐	☐	
Report hazardous material incidents any missing materials, to the UMPD at 301-405-3333 or #3333, and other institutional officials, as necessary. Follow laboratory incident response plans.	☐	☐	
Lab-specific re-entry procedures:	☐	☐	

If you have safety or health questions, or request assistance or support contact the Office of Research Safety at (301) 405-3960, or via safety@umd.edu or any of the following emails.

- Lab Safety (general) - labsafety@umd.edu
- Environmental Affairs and Waste Pickup - envaffairs@umd.edu
- Biological Safety - biosafety@umd.edu
- Radiation Safety - radiationsafety@umd.edu
- Fire Marshal - firemarshal@umd.edu
- Risk Management/Insurance – insurance@umd.edu