

Guidance for the Suspension of Research Laboratory

Operations Due to COVID-19 Outbreak

**Purpose:**

The university is working with the state Department of Health and Environmental Control and the U.S. Centers for Disease Control and Prevention to actively monitor the novel coronavirus (COVID-19) pandemic. This guidance on safely suspending laboratory operations is not intended to be an all-inclusive resource. The purpose is to provide general recommendations to minimize the adverse impact of a potential suspension of lab operations on research safety and compliance. Our goal is for research lab personnel to plan in advance and be prepared to implement their plan based on the level of operations communicated by university officials.

As part of the COVID-19 planning process, Principal Investigators are asked to meet with their lab groups to analyze their research operations and determine what actions need to be taken to protect critical research during a brief or extended disruption of normal operations. All labs are encouraged to compile an inventory of sensitive research that requires continued support during a disruption; and prepare a plan to provide that support with limited staff, resources, and vendor services. Labs should review existing plans for continued management of sensitive research specimens or hazards if they become unable to access some lab areas. Updated guidance to prevent the spread of COVID-19 is on the university’s [COVID-19 landing page](https://www.sc.edu/safety/coronavirus/).

The EH&S Research & Laboratory Safety Bureau priorities to support research laboratories during a reduced workforce or University closure due to COVID-19 will include:

* Reduce normal support services to prioritize essential operations
* Provide guidance on essential research safety and compliance issues or requests
* Respond to serious laboratory incidents involving hazards (e.g. exposures)

**If University officials instruct our research labs to suspend operations, the following general guidance and checklist can be used to promote a safe shut down of operations.**

**Key External & Internal Dependencies**

List below the products, services, suppliers and providers upon which your laboratory depends. It is recommended that you identify them as part of your laboratory’s COVID-19 Continuity of Operations Plan. Examples may include compressed gas supplier and scientific supply vendors.

**External Dependencies**

|  |  |
| --- | --- |
| Dependency (product or service): |  |
|  | Primary | Alternate |
| Supplier |  |  |
| Phone Number |  |  |

|  |  |
| --- | --- |
| Dependency (product or service): |  |
|  | Primary | Alternate |
| Supplier |  |  |
| Phone Number |  |  |

|  |  |
| --- | --- |
| Dependency (product or service): |  |
|  | Primary | Alternate |
| Supplier |  |  |
| Phone Number |  |  |

|  |  |
| --- | --- |
| Dependency (product or service): |  |
|  | Primary | Alternate |
| Supplier |  |  |
| Phone Number |  |  |

**Internal (within USC) Dependencies**

|  |  |
| --- | --- |
| Dependency (product or service) |  |
| Provider (USC Department) |  |

|  |  |
| --- | --- |
| Dependency (product or service) |  |
| Provider (USC Department) |  |

|  |  |
| --- | --- |
| Dependency (product or service) |  |
| Provider (USC Department) |  |

# Checklist for Quick Suspension of Laboratory Operations

This checklist provides basic instructions for researchers to consider if you need to quickly and safely suspend operations of a laboratory or shared research space for up to several weeks.

**Emergency Contact Information**

 Ensure that all laboratory staff exchange contact information for emergencies. Set up a phone tree for communication of critical information among lab members.

 Check that emergency contact information is correct.

 Post “Suspended Laboratory Operations” status sign on the entrance door to your laboratory.

 If there are any local alarms (e.g. fume hoods, -80◦ freezers, O2 sensors, CO2 sensors) within the lab, list the type on your “Suspended Laboratory Operations” sign. Also include a brief description of alarm type and follow-up actions.

 If there are alarms for hazardous gasses in the lab, list type and location on your “Suspended Laboratory Operations” sign. Note: These alarms should be monitored remotely, if possible.

 If any critical equipment is left in use, list the equipment type and location on your “Suspended Laboratory Operations” sign.

**Storage of Chemical, Biological, and Radiological Materials**

 Properly dispose of all regulated hazardous waste prior to suspending laboratory operations.

 Return all chemical reagents to storage locations (flammable liquid storage cabinets, etc.).

 Confirm all chemicals, stock solutions or samples that will remain in the laboratory are appropriately stored with regards to compatibility. All chemical containers must be securely closed and properly labeled prior to suspending lab operations.

 Return all biological materials to appropriate storage location. Cultures in incubators must be removed and disposed or appropriately stored for the duration of suspended operations.

 Return all radioisotopes and DEA controlled substances to properly secured storage location.

 If temperature sensitive chemicals, microorganisms, or radioisotopes are stored in freezers or refrigerators, adjust the thermostat to an appropriate temperature and close/secure the doors. Note all temperature-sensitive materials on your “Suspended Laboratory Operations” sign.

 Identify and properly store reactive chemicals for the duration of suspended lab operations. This includes chemicals which require an inert atmosphere.

**Animals**

 The Department of Laboratory Animal Resources (DLAR) may have streamlined husbandry and veterinary care schedules. Consult with DLAR to determine the level of husbandry and veterinary care needed for your animals during a time of suspended laboratory operations.

**Experiments, Utilities and Equipment**

 Identify all experiments involving hazardous materials that must not be conducted during a time of suspended laboratory operations.

 Terminate all on-going chemical processes and reactions (distillation, reflux, etc.) and transfer chemicals to intact, closed containers. Make sure all reactions are complete and in a safe condition. Label containers with the contents and store in appropriate storage locations.

 Shut off all compressed gas systems at the cylinder. Purge gas lines used for hazardous gases using an inert gas and keep gas lines pressurized with the inert gas.

 Shut off utility service valves (water, natural gas jets, compressed air, vacuum, nitrogen, etc.)

 Shut off all heat-producing equipment (e.g. ovens, furnaces, hotplates, water baths, heat blocks, incubators) and unplug from the electrical outlet (if possible). Any equipment or utilities that must remain turned on should be indicated on your “Suspended Laboratory Operations” sign.

 Plan how to manage inert gas supply to maintain the atmosphere in glove boxes.

 Turn off all water distillation machines and the water supply.

 Evaluate the need to disconnect power from experimental apparatus and discharge any accumulated stored energy (compressed air, mechanical, hydraulic, electric, etc.)

 Close fume hood sashes and turn off motors if controlled in lab.

 Plan how to manage refrigeration systems (e.g. replenishment of liquid nitrogen coolant).

 Decontaminate biosafety cabinet work surface and other equipment that may have biological contamination. Plan for a survey of radioactive work areas, storage areas and equipment.

 Remove all portable and handheld equipment labeled with “Caution – Radioactive Material” tape to a secured lab drawer. Decommission all benchtop work areas for radioactive material.

 Turn off computers and any other equipment that will not be needed during a lab closure.

**General**

 Close and lock all windows.

 Remove personal foodstuffs from areas where lab personnel eat/drink to avoid pest problems.

 Remove any trash from the lab that will generate odors upon decomposition. Place any trash in the dumpsters outside.

 Take critical information with you (e.g., lab write-up books).

 Take critical personal items (e.g., medicines, glasses).

 Walk-through all portions of laboratory and conduct a final inspection.

 Turn off lights and close/lock doors when exiting.

 Notify your Department Chair or Administrator that you are suspending lab operations

 Change your voice mail message to reflect your absence.

**Recovery**

 Notify your Chair / Administrator and EH&S when restarting lab after suspended operations.**Laboratory Entrance Door Notice**

|  |  |
| --- | --- |
| **Laboratory Building****Laboratory Rooms** |  |
| **Principal Investigator****Phone****e-mail** |  |
| **Laboratory Manager****Phone****e-mail** |  |
| **Start Date of Suspended Lab Operations** |  |
| **Special Considerations *(complete if applicable or delete non-applicable sections)*** |
| **Temperature-sensitive:**** Chemicals**** Microorganisms**** Radioisotopes** | Location:  |
| **Local Alarms (e.g., for chemical fume hoods, -80◦ Freezers, O2 or CO2 sensors)** | Alarm Type (e.g., horn, strobe light)Location: * If alarm sounds call \_\_\_\_\_, Principal Investigator, and Laboratory Manager.
 |
| **Toxic Gas Alarms** | Type/Location:  |
| **Operating NMRs** | Type/Location: Last Date Liquid Cryogen Replenished: Date Due for Liquid Cryogen Replenishment:  |
| **Operating Incubators:** | Type/Location: Last Date Gas Supply Replenished: Date Due for Gas Supply Replenishment:  |
| **Operating Glove box:** | Type/Location: Last Date Gas Supply Replenished: Date Due for Gas Supply Replenishment: |
| **Other:** |  |