Supplemental Laboratory Safety Plan

Blue Ridge Community College

Under 29 CFR 1910.1450, Blue Ridge Community College is required to provide a *Chemical Hygiene Plan* that establishes minimum safety standards for working with chemicals in the laboratory and outlines procedures that minimize both the risk of chemical exposure to laboratory personnel and the risk of chemical releases into the environment.

The *Supplemental Laboratory Safety Plan* is a supplement to the *Chemical Hygiene and Laboratory Safety Plan* that provides standard operating procedures and laboratory-specific information for responding to health and safety issues and laboratory emergencies. The plan, which must be completed for all laboratories, must list the types of hazards present in the laboratory and outline laboratory-specific engineering and administrative controls, personal protective equipment (PPE), operational procedures (e.g., decontamination, waste handling), and procedures for spill or exposure response. The *Supplemental Laboratory Safety Plan* must be kept within the laboratory where it is readily available to laboratory personnel and must be routinely reviewed and updated to reflect current laboratory activities. A copy must also be sent to the Office of the Vice President of Finance and Administration.

General Information

Date Modified:			
Laboratory Supervisor:			
Unit or Department:			
Office Location:		**Office Phone:**	
Lab Location:		**Lab Phone:**	
Email Address:			

Emergency Response Procedures

1. Emergency Contact Information			
	Public Safety:	540-453-2370 or 911	
	Poison Control Center:	800-222-1222	
Other:			
Other:			

2. Local Medical Care Facilities	
Augusta Health 78 Medical Center Dr. Fishersville, VA 22939 (540) 335-4000	**Sentara RMH Medical Center** 2010 Health Campus Dr. Harrisonburg, VA 22801 (540) 689-1000

3. Emergency Equipment Available in or near the Laboratory					
	Eye wash location:			**Flushed every month by:**	
	Emergency shower location:			**Flushed every month by:**	
	Fire extinguisher location:			**Fire extinguisher type:**	
	Spill supplies location:			**First aid kit location:**	
Other:			**Other:**		

4. Emergency Notification

Contact Public Safety. Provide the following information:

- Name and telephone number of the caller,
- Location of the emergency (building name; room number; and, if known, building specific address),
- Nature of the emergency (e.g., chemical spill and chemical(s) involved, fire, injuries)
- Special considerations (e.g., the potential for explosion, acutely hazardous gases present, people trapped in rooms or buildings, number of people injured and type of injuries, electrical hazards, property damage, and access routes to the emergency).

5. Evacuation Procedure (Follow these steps if safe to do so.)

a. Notify other laboratory personnel.
b. If conditions permit, cap and secure open vials, bottles, and other materials, and turn off laboratory equipment.
c. Leave the laboratory and close the door.
d. Activate the fire alarm to evacuate the building.
e. If it is safe to do so, assist anyone who may be in danger. Otherwise notify emergency response personnel once you have evacuated the building.
f. Exit the building according to the Building Evacuation Plan in a calm manner using the closest available emergency exit. Never use elevators.
g. Congregate at the pre-designated assembly point for the building.

6. Laboratory Fire

Personnel are not required to fight fires and should evacuate the building immediately in the event of a fire.

a. Follow the **Evacuation Procedure** described above (**Section 5)**. Activate the fire alarm to evacuate the building.
b. After you have evacuated, notify Public Safety or emergency response personnel that you have specific information regarding the fire.
c. Fight a fire with a fire extinguisher **ONLY IF**:
    i. You have been trained in the proper use of a fire extinguisher and are confident in your abilities to cope with the hazards of the fire, and
    ii. the fire is a small, incipient fire (no larger than a waste basket).
    iii. Terminate firefighting efforts when it becomes obvious that there is a danger from smoke, heat, or flames.

Section continues on the next page.

7. Gas Leaks

Situations involving uncontrollable leaking gas from a cylinder should be considered extremely hazardous and warrant immediate evacuation of the building.

a. If the gas leak is minimal, innocuous, and safely within reach, the cylinder valve should be closed.
b. Otherwise, follow the **Evacuation Procedure** described above **(Section 5**). Activate the fire alarm to evacuate the building.
c. After you have evacuated, notify Public Safety or emergency response personnel that you have specific information regarding the gas leak.

8. Equipment Failures

Equipment failures can result from power failure, defects, or malfunctions. If a piece of equipment fails while in use, take steps to contain or control possible exposures to the substances being used.

a. It is inappropriate to continue use of hazardous substances and equipment during a power failure or equipment malfunction.
b. In the event of a power failure, all personnel must secure the materials they are working with, turn off the equipment, and leave the laboratory until power is restored.

9. Ventilation Failure

If laboratory building ventilation fails, all operations concerning chemicals within the laboratory or building must be discontinued.

a. Laboratory operations may resume in the laboratory or building once ventilation has been restored and is confirmed that all ventilation systems are operating correctly
b. Chemical fume hoods that have failed cannot be used until they are repaired and re-tested.

10. Other

List other probable emergencies for your laboratory and the appropriate emergency response for laboratory personnel.

Exposure Response

11. Exposure Response – General	
In the event of a personal exposure, an individual's primary concern must be to minimize the degree of exposure and the possible effects. **The general responses provided in sections 11 – 14 may not be adequate for all materials present in the laboratory. Provide additional exposure response procedures, as necessary, for chemical or biological agents that require a specific exposure response.**	
Chemical or Biological Agent:	**Exposure Response:**
General	1. Remove contaminated PPE and clothing, turning exposed areas inward and place in a bag or appropriate waste container. Dispose as laboratory waste. 2. Notify other laboratory personnel of the incident and of any surface decontamination that needs to be done. 3. Review the Safety Data Sheet(s) (SDS) and apply first aid as needed. Call 911 emergency medical assistance or seek medical attention at the closest medical facility listed in **Section 2** above. 4. Report all possible exposure incidents to Public Safety and complete the incident report found on the Public Safety website.

12. Exposure Response – Skin or Mucous Membrane	
Skin or mucous membrane exposure can occur through splashes to the eye, face, exposed skin, or clothing; by touching mucous membranes with contaminated hands; or from a needlestick, puncture with a contaminated sharp object, an animal scratch or bite, or through wounds abrasions, or eczema. **Provide additional exposure response procedures, as necessary, for chemical or biological agents that require a specific exposure response.**	
Chemical or Biological Agent:	**Exposure Response:**
Biological (General)	1. Follow all general response procedures given in **section 11** above. 2. **For mucous membrane exposure**, flush the affected area with the eyewash for at least 15 minutes. If contact lenses are present, rinse for several minutes before removing them. 3. **For skin exposure**, wash affected skin with soap and cold water for at least 15 minutes. Cold water has the effect of closing the pores thereby slowing the rate of absorption into the body. Wash gently so as not to break the skin. For skin exposures not limited to the hands and forearms, the emergency shower should not be used.
Chemical (General)	Follow the exposure response listed for biological agents, but DO NOT use soap for skin exposure. Soap may cause an unexpected reaction with certain chemical agents.

Section continues on the next page.

13. Exposure Response – Inhalation	
Inhalation exposure can occur when working with volatile chemicals in a poorly ventilated area or as the result of inhaling airborne substances aerosolized by laboratory procedures such as centrifugation or vortexing. **Provide additional exposure response procedures, as necessary, for chemical or biological agents that require a specific exposure response.**	
Chemical or Biological Agent:	**Exposure Response:**
General	1. Follow all general response procedures given in **section 11** above. 2. Stop breathing in order to avoid inhaling airborne substances and immediately leave the area and seek fresh air. 3. Signal to others to leave, close the door, and post a warning sign. 4. Review the Safety Data Sheet(s) (SDS) for the chemical(s) involved to evaluate exposure data. 5. Public Safety must clear the laboratory for re-entry.

14. Exposure Response – Ingestion	
Accidental ingestion may occur as a result of splashes to the face, touching the face with contaminated hands, eating, drinking, or applying cosmetics in the laboratory, or through the outdated and unacceptable practice of mouth pipetting. **Provide additional exposure response procedures, as necessary, for chemical or biological agents that require a specific exposure response.**	
Chemical or Biological Agent:	**Exposure Response:**
General	1. Follow all general response procedures given in **section 11** above. 2. Seek medical attention (dial 911 or the Poison Control Center at 800-222-1222. 3. Do NOT induce vomiting unless directed to do so by a health care provider.

Spill Response

15. Spill Response – General	
Laboratory personnel are not required to respond to a spill. Do NOT attempt to clean the spill, if you are uncomfortable in responding to a spill; if you are not trained to clean the spill; if a spill poses imminent danger to health and safety; or cannot be isolated, contained, or controlled, move to a safe area and contact Public Safety. **A general spill response is provided below. This response may not be adequate for all materials present in the laboratory. Please provide additional spill response procedures, as necessary, for chemical or biological agents that require a specific spill response.**	
Chemical or Biological Agent:	**Spill Response:**
General	1. If the chemical or biological agents involved poses an inhalation hazard, stop breathing to avoid inhaling airborne material and quickly leave the room. 2. Signal to others to leave, close the door, and post a warning sign. 3. Go to a support space or adjacent laboratory. Avoid the hallway and publicly accessed areas. 4. Contact Public Safety for any spill that poses an inhalation hazard; cannot be isolated, contained, or controlled quickly; poses imminent danger to health and safety; poses imminent danger to property or the environment; or you are uncomfortable, or untrained, to respond to on your own. 5. If you have been exposed, or are experiencing symptoms of exposure, follow the appropriate exposure response given in **sections 11 – 14.** Call 911 for emergency medical assistance or seem medical attention at the closest medical facility listed in **section 2** above. 6. If you are qualified and comfortable cleaning up the spill, follow the instructions given in **sections 15 – 17**. 7. Report all spills and possible exposure incidents to Public Safety and complete the incident report found on the Public Safety website.
Spill Supplies Available in the Laboratory	
☐ Chemical Spill Kit containing absorbent material (e.g., pads, sheets, spill socks, or paper towels), nitrile gloves, polyethylene bags, boundary marking tap to cordon off the contaminated area until it is properly cleaned, warning signs, spill supply inventory, and 5-gallon pal with screw top lid.	
☐ Biological Spill Kit containing disinfectant (that is most effective and appropriate for killing or inactivating the specific organisms stored and used in the particular laboratory), spray bottle, absorbent material (e.g., pads, sheets, spill socks, or paper towels), red biohazard autoclave bags for the collection of contaminated items, autoclave tape, tongs, sharps containers, boundary marking tap to cordon off the contaminated area until it is properly cleaned and disinfected, warning sign, and spill supply inventory.	
☐ Other Absorbent	
☐ Acid Neutralizer	
☐ Caustic Neutralizer	
☐ Other	

Section continues on the next page.

16. Spill Response – Chemical Agents	
Please provide additional spill response procedures, as necessary, for chemicals that require a specific spill response.	
Chemical Agent:	**Spill Response:**
General	1. Follow all general response procedures given in **section 15** above. 2. If you are qualified and comfortable cleaning up the spill, notify other laboratory personnel and consult the Safety Data Sheet(s) (SDS) to determine the appropriate response. Do NOT attempt to clean a spill alone. Employ the assistance of a co-worker to facilitate cleanup activities. 3. Assemble spill supplies and use appropriate PPE including lab coat, gloves, and eye or face protection. 4. Take steps to limit the impact of the spill by preventing spilled substances from reaching drains and by isolating equipment and materials that may escalate the danger of the situation. Contain the spill with absorbent materials. 5. Pick up any visible sharp objects with tongs and discard them into an appropriate container. Items contaminated with hazardous materials are to be collected as hazardous waste. 6. Clean the spill by working from the outer edges of the spill towards the center using neutralizers or absorbent materials. 7. Clean the surrounding areas where the spill may have splashed. 8. Clean contaminated laboratory equipment. 9. Place the hazardous waste, contaminated absorbent materials, and contaminated PPE in a polyethylene bag and place the bag into a sturdy pail such as the one provided with the spill kit. Close the pail, label it with a Hazardous Waste label, and place it in the waste accumulation area. Sharps containers with a biohazard symbol must be disposed of as biohazardous waste. 10. Wash hands as described in **section 12.**

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17. Spill Response – Biological Agents	
When a biological spill occurs, it is important to understand the potential routes of exposure for the material involved and to employ proper response procedures. **Please provide additional spill response procedures, as necessary, for chemicals that require a specific spill response.**	
Biological Agent:	**Spill Response:**
General	1. Follow all general response procedures given in **section 15** above. 2. No one should enter the laboratory for 30 minutes. 3. If the nature of the spill requires the use of a HEPA filtered respirator, do NOT attempt to handle the spill. Public Safety will assume responsibility for the situation. 4. If the microorganisms do not pose an inhalation threat and you are qualified and comfortable cleaning up the spill, proceed to the next step. 5. Assemble spill supplies and use appropriate PPE including lab coat, gloves, and eye or face protection. 6. Cover the area of the spill with disinfectant soaked towels, and carefully pour disinfectant around the spill. Because the volume of the spill will dilute the disinfectant, a concentrated disinfectant should be used. Allow at least a 30-minute contact time. 7. Pick up any visible sharp objects with tongs and discard into a sharps container. 8. Wipe the surrounding area (where the spill may have splashed) with disinfectant. 9. Treat contaminated spill supplies and PPE as biohazardous waste. 10. Wash hand with antiseptic soap and warm water.
Centrifuge	1. If a centrifuge malfunctions while in operation or a tube breaks, turn the centrifuge off immediately and unplug it (if you can do so easily). 2. If you notice a spill has occurred after opening the centrifuge lid, stop breathing in order to avoid inhalation of airborne material and close the centrifuge to allow aerosols to settle. 3. Leave the laboratory immediately and follow the procedures given in **sections 15 and 17 (steps 1-5)** above. 4. Remove the rotor and place it in the biosafety cabinet. Open rotor, remove tubes using tongs or forceps. Disinfect the rotor with an appropriate chemical disinfectant and contact time. Dry the rotor thoroughly after disinfection. 5. Cover the bottom of the centrifuge with disinfectant-soaked towels. Concentrated disinfectant should be used. Allow at least a 30-minute contact time. 6. Wipe the inside of the centrifuge and lid win an appropriate disinfectant. Dry the inside of the centrifuge thoroughly. 7. Treat contaminated spill supplies and PPE as biohazardous waste. 8. Wash hands with antiseptic soap and warm water.

Infectious Material	**Disinfectant**	**Concentration**	**Contact Time (min)**

Administrative Controls, Engineering Controls, and PPE (Unrelated to Animal Handling)

18. Administrative Controls
List any laboratory specific administrative controls in addition to those listed in the *Chemical Hygiene and Laboratory Safety Plan*.

19. Safety and Compliance Bins Contain:			
☐ Chemical Hygiene and Laboratory Safety Plan		☐ Chemical Inventory	
☐ Supplemental Laboratory Safety Plan		☐ SDS Library	
☐ Blood Borne Pathogen Plan		☐ Biological Inventory	
☐ Radiation Safety Manual		☐ Laboratory Training Records	
☐ Other:		☐ Other:	

20. Facility Requirements			
List any laboratory specific facility requirements in addition to those outlined in the *Chemical Hygiene and Laboratory Safety Plan* (e.g., hands-free sink, safety shower, eye wash station)			
Safety Equipment Available			
☐ Safety Shower		☐ Eyewash Station	
☐ Biosafety Cabinet, ducted		☐ Biosafety Cabinet, not ducted	
☐ Chemical Fume Hood, ducted		☐ Chemical Fume Hood, not ducted	
☐ Glove Box		☐ Sealed lids for centrifuge rotors	
☐ Safe needle devices		☐ Other:	
☐ Other:		☐ Other:	

21.Location of Designated Areas			
Chemical Storage		Radiation Usage Area	
Biological Storage		Satellite Accumulation Area	
Other:		Other:	

22. Personal Protective Equipment (PPE)				
Check each type of PPE available for use in the laboratory. Equipment should be inspected, cleaned, or replaced as needed.				
☐ Lab Coat, Disposable		☐ Gloves, Nitrile, Disposable		☐ Safety Goggles, Splash Resistant
☐ Lab Coat, Laundered		☐ Gloves, Latex, Disposable		☐ Safety Goggles, Impact Resistant Only
☐ Chemical Resistant Apron		☐ Gloves, Butyl Rubber		☐ Safety Glasses, UV Protection
☐ Shoe Covers, Disposable		☐ Gloves, Heat Resistant		☐ Safety Glasses, Impact Resistant Only
☐ Sleeves, Disposable		☐ Gloves, Utility/Autoclave		☐ Face Shield
☐ Hair Coverings		☐ Gloves, Animal Handling		☐ Respirator
☐ Hearing Protection		☐ Glove Liners		☐ Face Mask, Disposable
☐ Other:		☐ Other Gloves:		☐ Other:

Infectious Materials

23. Infectious Material includes infectious agents (bacteria, parasites, fungi, viruses, prions) and all biological material that contain or has the potential to contain infectious agents. Examples include human blood and blood components, human tissues and body fluids, cultured cells from human and non-human primates, infected animals and animal tissues, non-human primates and any tissues from non-human primates, tissues from sheep, and environmental samples likely to contain infectious agents. Check all materials present in the laboratory.	
☐ Human blood or blood components	☐ Unfixed human tissues or organs
☐ Other human bodily fluids (list):	☐ Fixed human or animal brain/neural specimens
	☐ Experimental animal blood organs, or tissue
☐ Infectious materials listed on the Biological Inventory (primary and continuous cell lines; bacteria, including chlamydial and rickettsial agents; viruses; fungi; parasites; subviral agents, etc.)	
☐ Other:	

24. Exposure Determination			
The following job classifications are at risk for exposure to infectious material in this laboratory.			
☐ Faculty (Professional, Administrative, Research)		☐ Volunteers	
☐ Staff (Classified, Wage)		☐ Visiting Faculty / Research Associates	
☐ Staff (Student Wage)		☐ High School Students	
☐ Other:		☐ Other:	
The following activates place individuals at risk for exposure to infections materials.			
● Handling or manipulating samples containing infectious material or potentially infectious material. ● Using equipment potentially contaminated with infectious material. ● Performing maintenance on equipment, instruments, or machinery potentially contaminated with infectious material. ● Responding to spills involving infectious material. ● Handling waste potentially contaminated with infectious material. ● Packaging infectious material for shipping or transport.			
Certain tasks and procedures increase the risk of parenteral exposure, inhalation exposure, or contact with mucous membranes. Check each of the following tasks or procedures performed by laboratory personnel.			
☐ Use of sharps (needles, scalpels, blades, glass thermometers, pipettes, slides, and coverslips)			
☐ Injections or perfusions		☐ High speed centrifugation	
☐ Use of french press, sonicator, homogenizer, or safety blender			
☐ Dissection (human and non-human primate tissues and organs, any intentionally infected tissue or organ)			
☐ Slicing tissue using a microtome or cryostat		☐ Pipetting, mixing, vortexing, or homogenization	
☐ Handling infected animals and working in animal rooms containing infected animals			
List other tasks, procedures, and activities that increase the exposure risk for laboratory personnel.			

Particularly Hazardous Substances

28. Particularly Hazardous Substances (PHS)		
A general procedure is provided below. This procedure may not be adequate for all materials present in the laboratory. Please provide additional procedures, as necessary, for specific compounds.		
General	**Procedures** (Specific instructions, containment devices, decontamination procedures, specific waste handling procedures)	
	1. Only purchase and use the smallest bottles reasonable. Ideally, these chemicals should be used within 1 year of purchase. 2. Wear nitrile gloves, safety goggles, and a lab coat. 3. Ensure the lab room in adequately ventilated by turning on all ducted fume hoods and closing the doors. 4. Designate and label specific rooms or areas of a room for the handling of PHS. Label these areas with the specific hazards (carcinogen, mutagen, reproductive toxin, acute toxin). 5. Use spill trays when handling the material. 6. Follow specific procedures for each chemical (given below). 7. Collect any contaminated material and PPE in the designated waste bottle. Use wet paper towels to clean the work area. Discard the paper towels in the designated waste bottle.	
List select carcinogens, acutely toxic chemicals, and reproductive toxins used in the laboratory and provide information on the storage and usage locations, the type of containment devices used (e.g., chemical fume hood, glove box), the method of decontamination, and specific waste handling procedures (e.g., location of waste receptacles). Provide information for each Particularly Hazardous Substance located in the laboratory. Use the following hazards, found in section 2 of the SDS, to determine which materials are PHS: GHS Carcinogenicity, Mutagenicity, or Reproductive Toxicity, categories 1, 1A, or 1B; GHS Acute Toxicity – Oral or Inhalation, categories 1 or 2; GHS Acute Toxicity – Dermal, category 1. User knowledge can be used to add materials beyond these categories.		
Chemical Agents	**Designated Areas**	**Procedures** (Specific instructions, containment devices, decontamination procedures, specific waste handling procedures)

Animal Handling

29. Animal Handling			
Select details related to animal handling, including species, type of study, test substance, procedures, and locations of designated areas.			
Animal Species (Include approximate number housed)			
☐ Dog	☐ Cat	☐ Guinea Pig	☐ Rodent
☐ Other:		☐ Other:	
☐ Other:		☐ Other:	
Type of Study			
☐ Behavioral		☐ Toxicological	
☐ Sensitization		☐ Other:	
Test Substances			
Name of Test Substance	**Purity**	**Concentration**	**Method of Administration** (Oral Feed, Oral Gavage, Injection, Dermal Absorption, Aerosolization)
Procedures			
☐ Breeding	☐ Tail Bleeds	☐ Oral Gavage	☐ Cannula
☐ Surgery, type:			
☐ Anesthetization, method:			
☐ Euthanization, method:			
Location of Designated Areas			
Bedding		**Feed**	
Storage Location	**Type of Bedding**	**Storage Location**	**Type of Feed**

Administrative Controls, Engineering Controls, and PPE Related to Animal Handling

30. Administrative Controls			
List any laboratory specific administrative controls in addition to those listed in the *Chemical Hygiene and Laboratory Safety Plan*.			
☐ Vermin Control Program		☐ Laboratory Training Records	
☐ Other:		☐ Other:	

20. Facility Requirements	
List any laboratory specific facility requirements in addition to those outlined in the *Chemical Hygiene and Laboratory Safety Plan* (e.g., hands-free sink)	
☐ Doors are self-closing and locking	☐ Doors open inward
☐ Walls, floor, and ceilings are water resistant and designed to facilitate cleaning and housekeeping	
☐ Penetrations in walls, floor, and ceilings are sealed, to include openings around ducts, doors, and door frames, to facilitate pest control and proper cleaning	
☐ Ventilation is provided in accordance with the *Guide for Care and Use of Laboratory Animals*	
☐ Heat and humidity is adjustable to accommodate a range of animals species	
☐ Other:	

32. Safety Equipment Available			
☐ Safety Shower		☐ Eyewash Station	
☐ Biosafety Cabinet, ducted		☐ Biosafety Cabinet, not ducted	
☐ Chemical Fume Hood, ducted		☐ Chemical Fume Hood, not ducted	
☐ Glove Box		☐ Downdraft table	
☐ Safe needle devices		☐ Cage Wash	
☐ Bedding Station		☐ Other:	
☐ Other:		☐ Other:	

33. Personal Protective Equipment (PPE)					
Check each type of PPE available for use in the laboratory. Equipment should be inspected, cleaned, or replaced as needed.					
☐ Lab Coat, Disposable	☐ Gloves, Nitrile, Disposable		☐ Safety Goggles, Splash Resistant		
☐ Lab Coat, Laundered	☐ Gloves, Latex, Disposable		☐ Safety Goggles, Impact Resistant Only		
☐ Chemical Resistant Apron	☐ Gloves, Butyl Rubber		☐ Safety Glasses, UV Protection		
☐ Shoe Covers, Disposable	☐ Gloves, Heat Resistant		☐ Safety Glasses, Impact Resistant Only		
☐ Sleeves, Disposable	☐ Gloves, Utility/Autoclave		☐ Face Shield		
☐ Hair Coverings*	☐ Gloves, Animal Handling		☐ Respirator*		
☐ Hearing Protection	☐ Glove Liners		☐ Face Mask, Disposable		
☐ Scrubs, Disposable*	☐ Other Gloves:		☐ Other:		
☐ Scrubs, Laundered*	☐ Other:		☐ Other:		
*Includes optional equipment used to complete bedding or cage changes.					