

LABORATORY PERSONAL PROTECTIVE EQUIPMENT (PPE) HAZARD ASSESSMENT

PURPOSE AND DESCRIPTION

The Laboratory Personal Protective Equipment (PPE) Hazard Assessment Guide identifies hazards to which laboratory workers may be exposed and specifies PPE to protect against these hazards during work operations. When completed, the document and its associated training will satisfy the Department of Labor and Industries requirements for PPE as required in Washington Administrative Code (WAC) 296-800-160.

This document must be completed by the Principal Investigator (PI), Lab Manager or their designee. This person must conduct a laboratory hazard assessment that is specific to operations in their laboratory space(s). EH&S personnel are available to assist with the hazard assessment and can review the form. EH&S may be consulted by calling 206.543.7388. The PI/Lab Manager is responsible for ensuring PPE requirements are followed.

This hazard assessment guide consists of the following:

[Section 1: Instructions and Guidance on PPE Selection](#), pages 2 and 3

[Section 2: Laboratory PPE Hazard Assessment](#), pages 4 to 17

[Section 3: Certify the Hazard Assessment](#), page 18

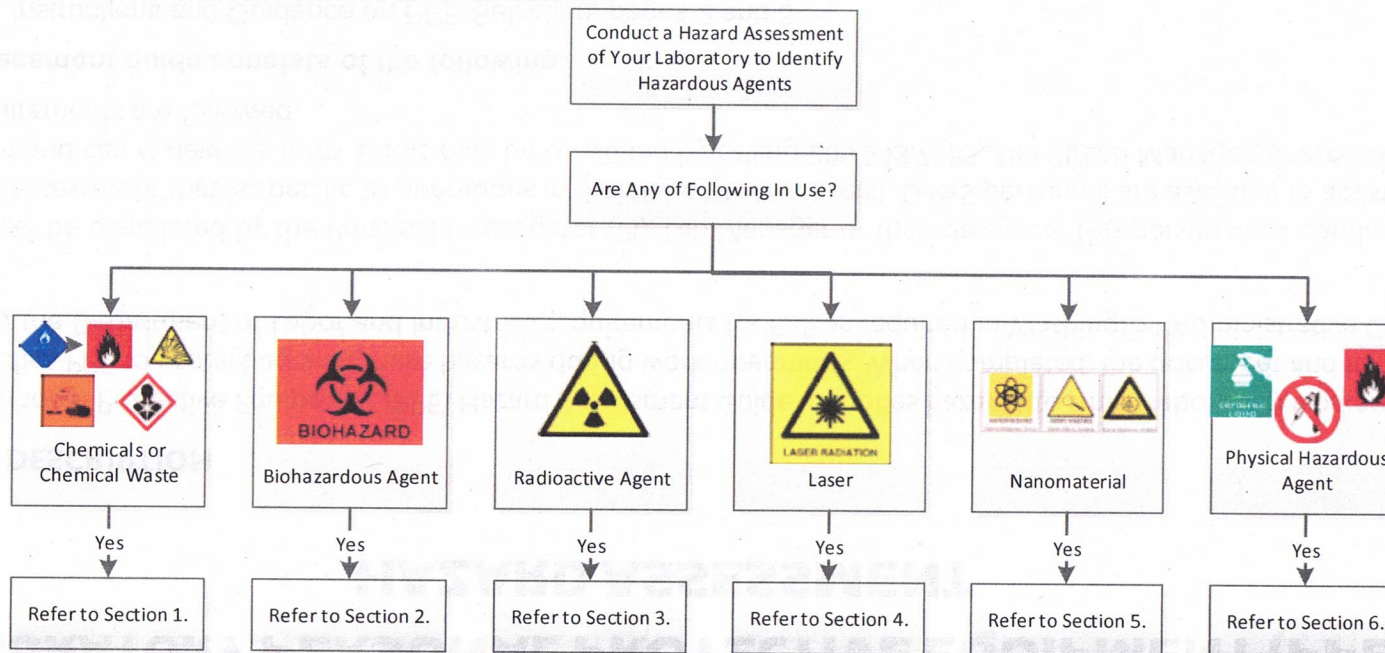
[Section 4: PPE Training Documentation](#), pages 19 and 20

SECTION 1: INSTRUCTIONS AND GUIDANCE ON PPE SELECTION

The Principal Investigator, Lab Manager or their designee will conduct and certify the hazard assessment.

Conduct a hazard assessment of the laboratory operations using the [Laboratory PPE Hazard Assessment](#).

- Complete each section for the potentially hazardous agent(s) used in your laboratory: (1) [chemical](#), (2) [biohazard](#), (3) [radioactive](#), (4) [laser](#), (5) [nanomaterial](#) and/or (6) [physical](#).
- This guide will assist in identifying work tasks that require the use of PPE to protect lab staff from exposures to hazards. For each work task listed, check the “Yes” box if the work is performed in your laboratory. If not, check the “No” box. As needed, add tasks to the list to customize it for your laboratory.
- Note the required PPE for each task is designated by a check mark (✓) before the item.
- Check additional boxes (☐) as appropriate and/or check “Other PPE: Specify” and describe in the space provided the lab-specific PPE required for the work task.



GENERAL GUIDANCE ON PERSONAL PROTECTIVE EQUIPMENT (PPE) SELECTION

1. **Minimum Laboratory PPE.** In general, the minimum PPE that should be worn while performing laboratory work is the following:
 - Safety glasses
 - Disposable nitrile or other appropriate chemical resistant gloves
 - Lab coat (full length) and long pants, long skirt or equivalent leg covering (no shorts)
 - Laboratory footwear (as described below)
2. **Chemical-Resistant Gloves.** Chemical-resistant gloves must be selected based on the specific chemical(s) used and manufacturer's glove permeation and compatibility charts. Guidance is available at www.ehs.washington.edu/resource/laboratory-safety-manual-510.
3. **Laboratory Footwear.** Laboratory footwear should fully cover the feet to protect against chemical spills. Avoid sandals, flip flops, flats, canvas/breathable fabric tops and shoes constructed of mesh (such as athletic shoes) unless impervious chemical-resistant booties that protect the entire foot are worn over them.
4. **Airborne/Inhalation Hazard: Engineering Controls and Respiratory Protection.**
 - **Chemical Fume Hood.** When materials have a potential for becoming airborne, use a chemical fume hood or other engineering control whenever possible. Activities that generate airborne contaminants or odors that are not conducted inside of a chemical fume hood or using some other engineering control (such as a local exhaust at the workbench) should be evaluated to determine if the activity presents an inhalation hazard.
 - **Biosafety Cabinet Use.** Use a biosafety cabinet to minimize exposure. Activities that cannot be conducted inside of a biosafety cabinet should be separately evaluated by the EH&S Biosafety Office. For BSL-3 or ABL-3 activities, the PPE requirements will be addressed by the BSL-3 facility.
 - **Respiratory Protection.** If respiratory protection is identified as a necessary control during the hazard assessment, users must be enrolled in the UW Respiratory Protection Program. This includes EH&S performing a respirator-specific hazard assessment, as well as having all users undergo a medical evaluation to wear a respirator, respirator training and respirator fit testing. Contact EH&S at 206.543.7388 or uwresp@uw.edu for assistance in these steps. Guidance is available at www.ehs.washington.edu/workplace/respiratory-protection.

1.0 CHEMICAL HANDLING PROTECTION (PAGE 1 OF 5)

Task Performed Yes No	Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE Designated For Lab-Specific Tasks
<input type="checkbox"/> <input checked="" type="checkbox"/>	C1. Work with solids of low or moderate toxicity	<ul style="list-style-type: none"> • Skin damage • Eye damage • Toxic by skin contact 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Hands: Disposable nitrile or appropriate chemical resistant gloves ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3). <input type="checkbox"/> Face: Face shield as splash or splatter may occur <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	C2. Work with small volumes (<100 ml.) of corrosive (acids or caustics) liquids or solids	<ul style="list-style-type: none"> • Skin damage • Eye damage • Toxic by skin contact 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Hands: Disposable nitrile or appropriate chemical resistant gloves ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3).
<input type="checkbox"/> <input checked="" type="checkbox"/>	C3. Work with large volumes of corrosive (acids or caustics) or acutely toxic materials that may splash	<ul style="list-style-type: none"> • Inhalation • Skin damage • Eye damage • Toxic by skin contact 	<ul style="list-style-type: none"> ✓ Eyes: Safety goggles ✓ Face: Face shield as splash or splatter may occur ✓ Hands: Disposable nitrile or appropriate chemical resistant gloves ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3). <input type="checkbox"/> Body: Chemical resistant apron <input type="checkbox"/> Inhalation: Respiratory protection; <i>contact EH&S for respiratory protection program assistance</i> <input type="checkbox"/> Other PPE, Specify:
<input checked="" type="checkbox"/> <input type="checkbox"/>	C4. Work with small volumes (<100 ml.) of flammable solvents or materials	<ul style="list-style-type: none"> • Skin damage • Eye damage • Toxic by skin contact 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Hands: Disposable nitrile or appropriate chemical resistant gloves ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3).
<input checked="" type="checkbox"/> <input type="checkbox"/>	C5. Work with large volumes (>100 ml.) of flammable solvents with a source of heat or ignition nearby	<ul style="list-style-type: none"> • Inhalation • Skin damage • Eye damage • Toxic by skin contact • Fire 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Hands: Disposable nitrile or appropriate chemical resistant gloves ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3). <input type="checkbox"/> Face: Face shield as splash or splatter may occur <input type="checkbox"/> Inhalation: Respiratory protection; <i>contact EH&S for respiratory protection program assistance</i> <input type="checkbox"/> Other PPE, Specify:

1.0 CHEMICAL HANDLING PROTECTION (Page 2 of 5)			
Task Performed Yes No	Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks
<input type="checkbox"/> <input checked="" type="checkbox"/>	C6. Work with chemicals of high acute toxicity (e.g. hydrogen fluoride, hydrogen cyanide)	<ul style="list-style-type: none"> Inhalation Skin damage Eye damage Toxic by skin contact 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Hands: Disposable nitrile or appropriate chemical resistant gloves <input checked="" type="checkbox"/> Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3). <input type="checkbox"/> Eyes: Safety goggles <input type="checkbox"/> Face: Face shield as splash or splatter may occur <input type="checkbox"/> Inhalation: Respiratory protection; <i>contact EH&S for respiratory protection program assistance</i> <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	C7. Work with particularly hazardous agent such as: <ul style="list-style-type: none"> Human carcinogen Mutagen Antineoplastic Reproductive toxin 	<ul style="list-style-type: none"> Inhalation Skin damage Eye damage Toxic by skin contact 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Hands: For Carcinogens, Mutagens, and Chemotherapy/Other Hazardous Drugs: Chemo exam gloves that are tested to meet ASTM D6978-05; Double glove <input checked="" type="checkbox"/> Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input type="checkbox"/> Eyes: Safety goggles <input type="checkbox"/> Face: Face shield as splash or splatter may occur <input type="checkbox"/> Inhalation: Respiratory protection; <i>contact EH&S for respiratory protection program assistance</i> <input type="checkbox"/> Other PPE, Specify:
<input checked="" type="checkbox"/> <input type="checkbox"/>	C8. Work with an apparatus with contents under pressure or vacuum (mm of Hg, psi, or torr)	<ul style="list-style-type: none"> Skin damage Eye damage 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Hands: Disposable nitrile or appropriate chemical resistant gloves <input checked="" type="checkbox"/> Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input type="checkbox"/> Face: Face shield <input type="checkbox"/> Eyes and/or Face: For high risk activities - Safety goggles and face shield <input type="checkbox"/> Body: For chemical use, chemical-resistant apron <input type="checkbox"/> Other PPE, Specify:

1.0 CHEMICAL HANDLING PROTECTION (Page 3 of 5)			
Task Performed Yes No	Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE For LabSpecific Tasks
<input type="checkbox"/> <input checked="" type="checkbox"/>	C9. Work with air or water reactive chemicals	<ul style="list-style-type: none"> Exposure to toxic gases, heat, and/or energy Inhalation Skin damage Eye damage Fire 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eyes: Safety goggles <input checked="" type="checkbox"/> Hands: Disposable nitrile or appropriate chemical resistant gloves <input checked="" type="checkbox"/> Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input type="checkbox"/> Face: Face shield as splash or splatter may occur <input type="checkbox"/> Hands: Heat resistant or chemical resistant gloves; please specify: <input type="checkbox"/> Body: Flame-resistant lab coat if fire hazard is present <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	C10. Work with pyrophoric materials	<ul style="list-style-type: none"> Fire Severe burns Inhalation Skin damage Eye damage 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eyes: Safety goggles <input checked="" type="checkbox"/> Hands: Inner disposable nitrile or appropriate chemical resistant gloves <input checked="" type="checkbox"/> Hands: Outer heat-resistant gloves <input checked="" type="checkbox"/> Body: Flame resistant lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input checked="" type="checkbox"/> Body: Synthetic clothing must not be worn when working with pyrophoric materials <input type="checkbox"/> Face: Face shield as splash or splatter may occur <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	C11. Work with potentially explosive chemicals	<ul style="list-style-type: none"> Detonation Flying debris Skin damage Eye damage Fire 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eyes: Safety goggles <input checked="" type="checkbox"/> Hands: Inner disposable nitrile or appropriate chemical resistant gloves <input checked="" type="checkbox"/> Hands: Outer heat-resistant gloves <input checked="" type="checkbox"/> Body: Flame resistant lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input checked="" type="checkbox"/> Body: Synthetic clothing must not be worn when working with explosive materials <input type="checkbox"/> Face: Face shield as splash or splatter may occur <input type="checkbox"/> Eyes, Face, or Body: Blast shield for high risk activities <input type="checkbox"/> Other PPE, Specify:

1.0 CHEMICAL HANDLING PROTECTION (Page 4 of 5)			
Task Performed Yes No	Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks
<input checked="" type="checkbox"/> <input type="checkbox"/>	C12. Work with high temperature equipment or objects	<ul style="list-style-type: none"> Burns Fire 	<ul style="list-style-type: none"> ✓ Eyes: Safety goggles ✓ Hands: Inner disposable nitrile or appropriate chemical resistant gloves ✓ Hands: High temperature thermal insulated gloves ✓ Body: Flame resistant lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) ✓ Body: Synthetic clothing must not be worn when working with high temperature equipment or objects <input type="checkbox"/> Face: Face shield as splash or splatter may occur <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	C13. Work with cryogenic material	<ul style="list-style-type: none"> Burns Frostbite Eye damage 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Eyes: Safety goggles for large volumes ✓ Face: Face shield as splash or splatter may occur ✓ Hands: Inner gloves - disposable nitrile or appropriate chemical resistant gloves ✓ Hands: Outer gloves - cryogenic low temperature insulated gloves ✓ Body: Lab coat; long pants, skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	C14. List any other particularly hazardous lab task involving chemicals	<p>Conduct risk assessment: Hazard depends on task and chemical properties</p> <ul style="list-style-type: none"> Inhalation Skin damage Eye damage 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Hands: Disposable nitrile or other appropriate chemical resistant gloves ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input type="checkbox"/> Face: Face shield as splash or splatter may occur <input type="checkbox"/> Body: Chemical resistant apron <input type="checkbox"/> Inhalation: Respiratory protection; <i>contact EH&S for respiratory protection program assistance.</i> <input type="checkbox"/> Other PPE, Specify:

1.0 CHEMICAL HANDLING PROTECTION (Page 5 of 5)			
Task Performed Yes No	Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks
<input checked="" type="checkbox"/> <input type="checkbox"/>	C15. Minor (or small) spill cleanup; spill can be cleaned up with standard spill kit	<ul style="list-style-type: none"> Inhalation Skin damage Eye damage 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eyes: Safety goggles <input checked="" type="checkbox"/> Face: Face shield as splash or splatter may occur <input checked="" type="checkbox"/> Hands: Chemical resistant gloves for spill cleanup <input checked="" type="checkbox"/> Body: Lab coat; long pants, skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input checked="" type="checkbox"/> As needed, contact EH&S for assistance <input type="checkbox"/> Foot: Shoe covers <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	C16. Large spill cleanup; spill is too large or complex to clean up with standard spill kit	<ul style="list-style-type: none"> Inhalation Skin damage Eye damage 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Mandatory: Follow required procedures <ul style="list-style-type: none"> If possible, stop or contain the release Evacuate and secure the area Assist injured or contaminated persons Call 911 for assistance; report injuries, fires, or request cleanup assistance Call EH&S for assistance
<input type="checkbox"/> <input type="checkbox"/>			
<input type="checkbox"/> <input type="checkbox"/>			

2.0 BIOHAZARDOUS AGENT PROTECTION GENERAL			
Task Performed Yes No	Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks
<input type="checkbox"/> <input checked="" type="checkbox"/>	B1. Work with human blood, body fluids, cell lines (primary or established), tissues or bloodborne pathogens (BBP).	<ul style="list-style-type: none"> Exposure to infectious material 	<ul style="list-style-type: none"> ✓ Hand: Latex or nitrile gloves ✓ Body: Lab coat ✓ Face: Spatter shield on tabletop if not working in a biosafety cabinet OR ✓ Face: Face shield if not working in a biosafety cabinet or behind a spatter shield OR ✓ Face: Safety glasses and a mask if not working in a biosafety cabinet or behind a spatter shield <input type="checkbox"/> Eye: Safety glasses <input type="checkbox"/> Body: Disposable gown (optional) <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	B2. Work with animal and/or human specimens preserved in fixative (such as formalin or paraformaldehyde solution) Preserve animal and/or human specimens with fixative (such as formalin or paraformaldehyde solution)	<ul style="list-style-type: none"> Exposure to fixative used to preserve specimen <p>If tissue is fixed, there is no longer an exposure to infectious material.</p>	<ul style="list-style-type: none"> ✓ Eye: Safety glasses ✓ Hand: Impermeable glove for preserved specimens that is chemical resistant to fixative used ✓ Body: Lab coat <input type="checkbox"/> Body: Disposable gown <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	B3. Work with radioactive human blood, body fluids or bloodborne pathogens (BBP).	<ul style="list-style-type: none"> Exposure to infectious material Cell damage Potential spread of radioactive contaminants 	<ul style="list-style-type: none"> ✓ Hand: Latex or nitrile gloves ✓ Eye: Safety glasses or safety goggles for splash hazard ✓ Face: Face shield as splash or splatter may occur ✓ Body: Lab coat <input type="checkbox"/> Body: Disposable gown <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input type="checkbox"/>			

2.1 BIOHAZARDOUS AGENT PROTECTION – RISK GROUP 1, 2, 3			
Task Performed Yes No	Task Description (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks
<input type="checkbox"/> <input checked="" type="checkbox"/>	B4. Work with agents or recombinant DNA classified as Risk Group 1 and requiring Biosafety Level 1 (BSL-1) containment	<ul style="list-style-type: none"> Biological agents that typically pose a minimal potential for infection by injection, skin exposure, ingestion or inhalation 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Hand: Latex or nitrile gloves <input checked="" type="checkbox"/> Body: Lab coat <input type="checkbox"/> Eye: Safety glasses for splash or other eye hazard <input type="checkbox"/> Eye: Safety goggles for splash or other eye hazard <input type="checkbox"/> Body: Disposable gown <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	B5. Manipulation of recombinant DNA, cell lines, viruses, bacteria or other organisms classified as Risk Group 2 and requiring Biosafety Level 2 (BSL-2) containment Perform aerosol generating procedure: Vortex, sonicate, pipette, tissue harvest	<ul style="list-style-type: none"> Biological agents that pose a moderate potential for infection by injection, skin exposure, ingestion or inhalation 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eye: Safety glasses if not working in a biosafety cabinet <input checked="" type="checkbox"/> Hand: Latex or nitrile gloves <input checked="" type="checkbox"/> Body: Lab coat <input type="checkbox"/> Eye: Safety goggles if not working in a biosafety cabinet <input type="checkbox"/> Body: Surgical gown <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	B6. Manipulation of infectious materials classified as Risk Group 3 but manipulated in a BSL 2 facility with BSL-3 containment practices (BSL 2+).	<ul style="list-style-type: none"> Biological agents that pose a moderate or serious potential for infection by injection, skin exposure, ingestion or inhalation 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eye: Safety glasses for splash or other eye hazard <input checked="" type="checkbox"/> Hands: Nitrile gloves (double) <input checked="" type="checkbox"/> Body: Disposable gown (preferred) that ties in back <input checked="" type="checkbox"/> Inhalation: Respiratory protection as determined by risk assessment; <i>contact EH&S for respiratory protection program assistance</i> <input type="checkbox"/> Eye: Safety goggles for splash or other eye hazard <input type="checkbox"/> Body: Lab coat <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	B7. Manipulation of infectious materials classified as Risk Group 3 and requiring Biosafety Level 3 (BLS-3) containment	<ul style="list-style-type: none"> Biological agents that pose a serious or lethal potential for infection by injection, skin exposure, ingestion or inhalation 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eye: Safety glasses for splash or other eye hazard <input checked="" type="checkbox"/> Hands: Nitrile gloves (double) <input checked="" type="checkbox"/> Body: Full disposable coverall suit (preferred) <input checked="" type="checkbox"/> Foot: Shoe cover or dedicated shoe <input checked="" type="checkbox"/> Inhalation: Respiratory protection as determined by risk assessment; <i>contact EH&S for respiratory protection program assistance</i> <input type="checkbox"/> Eye: Safety goggles for splash or other eye hazard <input type="checkbox"/> Other PPE, Specify:

2.2 BIOHAZARDOUS AGENT PROTECTION – BIOSAFETY LEVEL 1, 2, 3			
Task Performed Yes No	Task Description (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks Follow Appropriate BSL Practices
<input type="checkbox"/> <input checked="" type="checkbox"/>	B8. Work with live animals: General safety concerns	<ul style="list-style-type: none"> Animal bites Exposure to animal allergens 	<input type="checkbox"/> Animal bites: Restraints or bite-resistant gloves <input type="checkbox"/> Animal allergen: Voluntary use of N95 respirator or PAPR. For allergens, contact EH&S for respiratory protection program assistance. <input type="checkbox"/> Specific Pathogen Free (SPF) Area: Hair bonnet, gown, shoe covers, gloves <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	B9. Work with live animals: Animal Biosafety Level 1 (ABSL-1)	<ul style="list-style-type: none"> Exposure to infectious material 	<input checked="" type="checkbox"/> Hands: Nitrile or vinyl gloves for broken skin <input checked="" type="checkbox"/> Body: Lab coat OR <input checked="" type="checkbox"/> Body: Disposable gown <input type="checkbox"/> Eye: Safety glasses for splash or other eye hazard <input type="checkbox"/> Eye: Safety goggles for splash or other eye hazard <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	B10. Work with live animals: Animal Biosafety Level 2 (ABSL-2)	<ul style="list-style-type: none"> Exposure to infectious material 	<input checked="" type="checkbox"/> Eye: Safety goggles for splash or other eye hazard <input checked="" type="checkbox"/> Hands: Nitrile or vinyl gloves <input checked="" type="checkbox"/> Body: Disposable gown <input type="checkbox"/> Foot: Shoe covers <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	B11. Work with live animals: Animal Biosafety Level 2+ (ABSL-2+)	<ul style="list-style-type: none"> Exposure to infectious material 	<input checked="" type="checkbox"/> Eye: Safety glasses for splash or other eye hazard <input type="checkbox"/> Eye: Safety goggles for splash or other eye hazard <input checked="" type="checkbox"/> Hands: Nitrile or vinyl gloves <input checked="" type="checkbox"/> Body: Disposable gown (tie in the back) <input checked="" type="checkbox"/> Foot: Shoe covers <input type="checkbox"/> Other PPE, Specify:

2.2 BIOHAZARDOUS AGENT PROTECTION – BIOSAFETY LEVEL 1, 2, 3			
Task Performed Yes No	Task Description (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks Follow Appropriate BSL Practices
<input type="checkbox"/> <input checked="" type="checkbox"/>	B12. Work with live animals: Animal Biosafety Level 3, (ABSL-3).	<ul style="list-style-type: none"> Exposure to infectious material Exposure to infectious agent by airborne transmission 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eye: Safety glasses for splash or other eye hazard <input type="checkbox"/> Eye: Safety goggles for splash or other eye hazard <input checked="" type="checkbox"/> Hands: Nitrile or vinyl gloves <input type="checkbox"/> Body: Disposable gown <input checked="" type="checkbox"/> Foot: Shoe covers <input checked="" type="checkbox"/> Inhalation: Mandatory use of N95 respirator or PAPR, as determined by risk assessment. <i>For mandatory use, contact EH&S for respiratory protection program assistance.</i> <input checked="" type="checkbox"/> Additional PPE, Specify: A full body disposable coversuit is appropriate in an animal facility.
<input type="checkbox"/> <input type="checkbox"/>			
<input type="checkbox"/> <input type="checkbox"/>			



3.0 RADIOACTIVE AGENT PROTECTION: IONIZING, ULTRAVIOLET, INFRARED

Task Performed Yes No	Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks
<input type="checkbox"/> <input checked="" type="checkbox"/>	R1. Work with solid radioactive material or solid radioactive waste	<ul style="list-style-type: none"> Cell damage Potential spread of radioactive contamination 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Hands: Disposable nitrile or other appropriate radioactive material impermeable gloves ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) ✓ Work on Sealed Source: Minimum PPE is unnecessary when working with sealed radiation sources
<input type="checkbox"/> <input checked="" type="checkbox"/>	R2. Work with liquid radioactive material (in corrosives, flammables, and aqueous liquids, including liquid radioactive waste) or radioactive powders	<ul style="list-style-type: none"> Cell damage Potential spread of radioactive contamination Hazards presented by the specific chemical 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Hands: Disposable nitrile or appropriate chemical resistant gloves compatible with work with radioactive materials ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3)
<input type="checkbox"/> <input checked="" type="checkbox"/>	R3. Work with ultraviolet radiation	<ul style="list-style-type: none"> Conjunctivitis Corneal damage Skin burns 	<ul style="list-style-type: none"> ✓ Eye: UV face shield and/or goggles ✓ Hand: Nitrile gloves if hand exposure is possible ✓ Body: Lab coat
<input type="checkbox"/> <input checked="" type="checkbox"/>	R4. Work with infrared-emitting equipment (e.g. glass blowing) <i>Laser cutters fully enclosed with interlocks</i>	<ul style="list-style-type: none"> Cataracts Burns to cornea 	<ul style="list-style-type: none"> ✓ Eye: Appropriate polycarbonate infrared filter glasses ✓ Body: Flame resistant lab coat
<input type="checkbox"/> <input type="checkbox"/>			
<input type="checkbox"/> <input type="checkbox"/>			

4.0 LASER PROTECTION				
Task Performed Yes No		Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks
OPEN BEAM				
<input type="checkbox"/>	<input checked="" type="checkbox"/>	L1. Perform beam alignment or laser experiment; repair or maintenance that requires working with an open laser beam, and/or defeating the interlock(s) on any Class 3b or Class 4 laser system	<ul style="list-style-type: none"> • Eye damage 	<ul style="list-style-type: none"> ✓ Eye: Appropriate laser safety goggles/glasses with optical density based on individual beam parameters; <i>contact EH&S to determine appropriate optical density.</i>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	L2. View a Class 3R laser beam with magnifying optics (including eyeglasses)	<ul style="list-style-type: none"> • Eye damage 	<ul style="list-style-type: none"> ✓ Eye: Appropriate laser safety goggles/glasses with optical density based on individual beam parameters; <i>contact EH&S to determine appropriate optical density.</i>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	L3. Work with a Class 3b open beam laser system with the potential for producing direct or specular (mirror-like) reflections	<ul style="list-style-type: none"> • Eye damage 	<ul style="list-style-type: none"> ✓ Eye: Appropriate laser safety goggles/glasses with optical density based on individual beam parameters; <i>contact EH&S to determine appropriate optical density.</i>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	L4. Work with infrared-emitting equipment (e.g. glass blowing) <i>Laser cutters fully enclosed and have interlock.</i>	<ul style="list-style-type: none"> • Cataracts • Burns to cornea 	<ul style="list-style-type: none"> ✓ Eye: Appropriate laser safety goggles/glasses with optical density based on individual beam parameters; <i>contact EH&S to determine appropriate optical density.</i> ✓ Hands: Nitrile gloves ✓ Body: Long sleeved shirt (tightly wound fabric) ✓ Body: Lab coat <i>Long sleeves, lab coat, gloves, etc. are required only in the NHZ (Nominal Hazard Zone)</i>
<input type="checkbox"/>	<input checked="" type="checkbox"/>	L5. Handle dye laser materials, such as powdered dyes, chemicals and solvents	<ul style="list-style-type: none"> • Cancer • Fire • Explosion 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Hands: Chemical resistant gloves ✓ Body: Flame resistant lab coat or coveralls
<input type="checkbox"/>	<input checked="" type="checkbox"/>	L6. Maintain and repair power sources for Class 3B and Class 4 laser systems	<ul style="list-style-type: none"> • Electrocution • Fire • Explosion 	<ul style="list-style-type: none"> ✓ Eye: Safety glasses ✓ Hands: Insulated gloves ✓ Body: Flame resistant lab coat ✓ Body: Coveralls

5.0 NANOMATERIAL PROTECTION				
Task Performed Yes No		Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks
<input type="checkbox"/>	<input checked="" type="checkbox"/>	N1. Work with bound or wet nanomaterials	<ul style="list-style-type: none"> • Inhalation • Skin damage • Eye damage • Chemical exposure 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Face: Face shield as splash or splatter may occur ✓ Hands: Disposable nitrile or other appropriate chemical resistant gloves ✓ Hands: Routinely replace gloves to minimize exposure and hand contamination ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/>	<input checked="" type="checkbox"/>	N2. Work with unbound or dry engineered nanomaterials	<ul style="list-style-type: none"> • Inhalation • Skin damage • Eye damage • Chemical exposure 	<p>For unbound or dry material:</p> <ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Face: Face shield as splash or splatter may occur ✓ Hands: Disposable nitrile or other appropriate chemical resistant gloves ✓ Hands: Routinely replace gloves to minimize exposure and hand contamination ✓ Body: Lab coat made of non-woven fabric and elastic at the wrists; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) ✓ Inhalation: Half face respirator with P100 cartridge if working with aerosolizing nanomaterials outside of a vented work enclosure; <i>contact EH&S for respiratory protection program assistance.</i> ✓ Removal of PPE: Give special attention to technique used to remove and dispose of contaminated PPE to avoid skin contact <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/>	<input type="checkbox"/>			

6.0 PHYSICAL HAZARD PROTECTION (PAGE 1 OF 2)

Task Performed Yes No		Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks
<input type="checkbox"/>	<input checked="" type="checkbox"/>	P1. Work with cryogenic liquids	<ul style="list-style-type: none"> • Skin damage • Eye damage 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Face: Face shield ✓ Hands: Cryogenic, low temperature insulated gloves ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input type="checkbox"/> Body: Cryogenic apron
<input type="checkbox"/>	<input checked="" type="checkbox"/>	P2. Remove freezer cryo vials from liquid nitrogen	<ul style="list-style-type: none"> • Vials may explode upon rapid warming • Cuts to face/neck and frostbite to hands 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Face: Face shield ✓ Hands: Cryogenic, temperature thermal insulated gloves ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input type="checkbox"/> Body: Cryogenic apron
<input type="checkbox"/>	<input checked="" type="checkbox"/>	P3. Work with very cold equipment or dry ice	<ul style="list-style-type: none"> • Frostbite • Hypothermia 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) ✓ Hands: Cryogenic low temperature insulated gloves
<input checked="" type="checkbox"/>	<input type="checkbox"/>	P4. Work with hot liquids, heating equipment and/or open flames (autoclave, Bunsen burner, water bath, oil bath)	<ul style="list-style-type: none"> • Burns resulting in skin or eye damage 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Hands: Inner disposable nitrile or appropriate chemical resistant gloves ✓ Hands: Outer thermal insulated gloves ✓ Body: Lab coat; long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) ✓ Eyes: Safety goggles for work with hot liquids ✓ Face: Face shield as splash or splatter may occur ✓ Hands: Autoclave gloves, impermeable insulated gloves for liquids and steam
<input type="checkbox"/>	<input checked="" type="checkbox"/>	P5. Wash glassware	<ul style="list-style-type: none"> • Lacerations if glass breaks • Splash from cleaning agents 	<ul style="list-style-type: none"> ✓ Eyes: Safety glasses ✓ Hands: Nitrile or appropriate chemical resistant gloves ✓ Body: Lab coat; long pants, skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input type="checkbox"/> Face: Face shield <input type="checkbox"/> Hands: Cut resistant gloves if glass breaks

6.0 PHYSICAL HAZARD PROTECTION (Page 2 of 2)

Task Performed Yes No	Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE For Lab-Specific Tasks
<input type="checkbox"/> <input checked="" type="checkbox"/>	P6. Work with loud equipment, noises, sounds, alarms, etc.	<ul style="list-style-type: none"> Potential ear damage and hearing loss 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Hearing: Earplugs or ear muffs, as necessary; <i>contact EH&S for noise exposure assessment.</i>
<input checked="" type="checkbox"/> <input type="checkbox"/>	P7. Work with an apparatus with contents under pressure or vacuum <i>-29 (mm of Hg) psi, or torr</i> <i>in Hg</i>	<ul style="list-style-type: none"> Skin damage Eye damage 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Hands: If chemicals used, nitrile or other appropriate chemical-resistant glove <input checked="" type="checkbox"/> Body: Lab coat; Long pants, skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input type="checkbox"/> Face: Face shield <input type="checkbox"/> Eyes and/or Face: For high risk activities - Safety goggles and face shield <input type="checkbox"/> Body: If chemicals used, chemical-resistant apron <input type="checkbox"/> Other PPE, Specify
<input checked="" type="checkbox"/> <input checked="" type="checkbox"/>	P8. Work with sharps or broken glass	<ul style="list-style-type: none"> Cuts 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> For Cuts: Use tongs for broken glass and designated sharps container for contaminated wastes <input checked="" type="checkbox"/> For Cuts: Cut resistant outer glove (Kevlar) with nitrile inner gloves
<input type="checkbox"/> <input checked="" type="checkbox"/>	P9. Work with sharps and/or empty a syringe used with chemicals	<ul style="list-style-type: none"> Exposure to aerosols from syringe 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> For Aerosols: Safety glasses and mask. <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	P10. Work with compressed gases inside environmental chambers	<ul style="list-style-type: none"> Asphyxiation Toxic gas exposure 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Employee is not allowed to enter and work inside of an oxygen deficient or hazardous chamber.
<input type="checkbox"/> <input checked="" type="checkbox"/>	P11. Maintain and repair electrically powered equipment	<ul style="list-style-type: none"> Electrocution 	<ul style="list-style-type: none"> <input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Hands: Insulated gloves <input checked="" type="checkbox"/> Body: Coveralls
<input type="checkbox"/> <input type="checkbox"/>			

SECTION 3: CERTIFY THE HAZARD ASSESSMENT

Please certify that the hazard assessment for the laboratory has been completed by filling out and signing this page.

CERTIFICATION OF THE LABORATORY HAZARD ASSESSMENT AND PPE SELECTION

Principal Investigator's (PI) Name (Print Name): <i>Shwetak Patel</i>		Department/Unit: <i>Allen</i> <i>Paul. G. Allen School of CSE</i>	
Building(s): <i>Paul G. Allen Center for CSE</i>		Room(s): <i>CSE 615</i>	
Lab Manager's Name: <i>Alexander Lefort</i>		Lab Manager's Phone: <i>206-685-9198</i>	
Completed by (Print Name): <i>Alexander Lefort</i>		Signature: <i>Alexander Lefort</i>	Date <i>02/22/2023</i>
Signature of PI:			Date

SECTION 4: PPE TRAINING DOCUMENTATION

Laboratory safety training must be conducted by the Principal Investigator, Lab Manager or their designee. Training will identify and discuss potentially hazardous tasks performed in the lab and selection and use of lab-specific PPE to protect the laboratory worker or researcher. The training content, instructor and student attendees must be documented. To provide adequate training, the PI, Lab Manager or their designee will provide the following:

1. Identify all applicable safety training courses needed for each staff member and assure that each staff member has these courses.
2. The PI, lab manager, or their designee will review the completed Lab PPE Hazard Assessment Guide with the employee. It describes the operations in the lab where employees need PPE for protection against exposure to hazards. In this step, the hazard assessment is used as a training tool. While discussing lab operations and the associated hazards with lab staff, the manager will address the following:
 - How the lab obtains PPE
 - What types of PPE are used in the lab and for which tasks
 - Where and how the PPE is stored and maintained
 - How to inspect and what to look for to confirm PPE is in good condition before putting it on. If not, place the PPE.
 - How to put on, wear, adjust for proper fit, and remove PPE
 - How to properly use the PPE
 - How to properly decontaminate and clean reusable PPE, and how to properly dispose of single-use PPE
 - Discuss any limitations of the PPE
 - General PPE safety practices, including not wearing PPE outside of lab hazard areas (e.g. hallways and eating areas).
3. Each trained lab staff member will sign the training documentation to acknowledge that they have reviewed and been trained on the Laboratory PPE Assessment Guide.
4. Conduct refresher training whenever the hazard assessment and/or PPE selected for use is updated.

Laboratory PPE Hazard Assessment Guide Training Acknowledgement:

Principal Investigator: Shwetak Patel

Department/Unit: CSE

Building: Paul G. Allen Center for CSE

Room: CSE2 G15, G15A, G15C

Trainer: Alexander Lefort

Trainer Job Title: Lab Manager

I have read, asked questions, and understand the PPE requirements for the activity/materials described for my work.

Date	Name of Person Trained	Job Title	Employee or Student ID Number	Signature
✱	All trainings recorded on digital Records spreadsheet.		Fabrication Research Lab Training	
	Paul G. Allen School Fabrication Research Lab		"Rules for the Use of the	form when trained.
	This is stored in the training records cabinet		of the lab manager.	