

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 laboratories. 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's/Lab Managers are responsible for ensuring PPE requirements are followed.

This Hazard Assessment document 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.

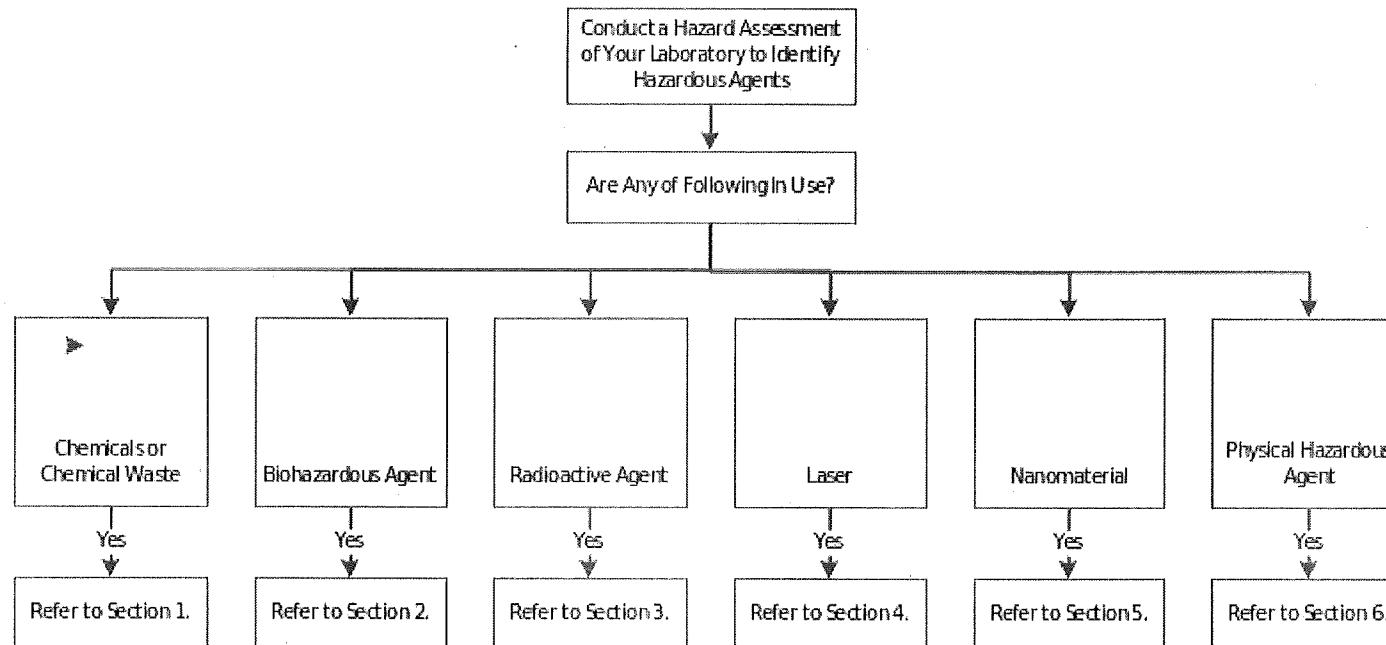
Section 3: Certify the Hazard Assessment, Page 18.

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.

1. Conduct a hazard assessment of the laboratory operations using the PPE Assessment Guide.
 - Complete the section if the potentially hazardous agent is 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. If performed, check the applicable box for "Yes". If not, check the applicable box for "No". As needed, add tasks to the list to customize it for your laboratory.
 - For each task performed, provide additional information by marking the appropriate additional box or marking "Other PPE: Specify" and describing in the space provided the lab specific PPE designated 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:
<http://www.ehs.washington.edu/manuals/lsm/lsmg.pdf>
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 during the hazard assessment, a respiratory protection program must be implemented that includes a hazard assessment, medical evaluation to wear a respirator, respirator training, and respirator fit testing. Contact EH&S at 543-7388 for assistance in developing the program. Guidance is available at: <http://www.ehs.washington.edu/ohsresp/index.shtm>

 <h3 style="text-align: center;">1.0 CHEMICAL HANDLING PROTECTION (Page 1 of 5)</h3>				
Task Performed Yes No	Task Performed in Lab (Modify wording to fit your needs)	Potential Hazards	PPE Designated For Lab Specific Tasks	
<input checked="" type="checkbox"/> <input type="checkbox"/>	C1. Working with solids of low or moderate toxicity.	<ul style="list-style-type: none"> • Skin damage • Eye damage • Toxic by skin contact 	<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: Splash or splatter may occur - Face shield <input type="checkbox"/> Other PPE, Specify:	
<input checked="" type="checkbox"/> <input type="checkbox"/>	C2. Working 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 	<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 checked="" type="checkbox"/> <input type="checkbox"/>	C3. Working 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 	<input checked="" type="checkbox"/> Eyes: Safety goggles <input checked="" type="checkbox"/> Face: If splash or splatter may occur – Face shield <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"/> Body: Chemical resistant apron. <input type="checkbox"/> Inhalation: Respiratory protection. Contact EH&S for respiratory protection program assistance. <input type="checkbox"/> Other PPE, Specify:	
<input checked="" type="checkbox"/> <input type="checkbox"/>	C4. Working with small volumes (<100 ml.) of flammable solvents or materials.	<ul style="list-style-type: none"> • Skin damage • Eye damage • Toxic by skin contact 	<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"/> <input checked="" type="checkbox"/>	C5. Working with large volumes (>100 ml.) of flammable solvents. Source of heat or ignition is nearby.	<ul style="list-style-type: none"> • Inhalation • Skin damage • Eye damage • Toxic by skin contact • Fire 	<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: Splash or splatter may occur - Face shield <input type="checkbox"/> Inhalation: Respiratory protection. Contact EH&S for respiratory protection program assistance. <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. Working 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 	<p>✓ Eyes: Safety glasses</p> <p>✓ Hands: Disposable nitrile or appropriate chemical resistant gloves</p> <p>✓ Body: Lab coat; Long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3).</p> <p><input type="checkbox"/> Eyes: Safety goggles</p> <p><input type="checkbox"/> Face: Splash or splatter may occur - Face shield</p> <p><input type="checkbox"/> Inhalation: Respiratory protection. Contact EH&S for respiratory protection program assistance.</p> <p><input type="checkbox"/> Other PPE, Specify:</p>
<input checked="" type="checkbox"/> <input type="checkbox"/>	C7. Working 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 	<p>✓ Eyes: Safety glasses</p> <p>✓ Hands: For Carcinogens, Mutagens, and Chemotherapy/Other Hazardous Drugs: Chemo exam gloves that are tested to meet ASTM D6978-05; Double glove</p> <p>✓ Body: Lab coat; Long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3)</p> <p><input type="checkbox"/> Eyes: Safety goggles</p> <p><input type="checkbox"/> Face: Splash or splatter may occur - Face shield</p> <p><input type="checkbox"/> Inhalation: Respiratory protection. Contact EH&S for respiratory protection program assistance.</p> <p><input type="checkbox"/> Other PPE, Specify:</p>
<input checked="" type="checkbox"/> <input type="checkbox"/>	C8. Working 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 	<p>✓ Eyes: Safety glasses</p> <p>✓ Hands: Disposable nitrile or appropriate chemical resistant gloves</p> <p>✓ Body: Lab coat; Long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3)</p> <p><input type="checkbox"/> Face: Face shield</p> <p><input type="checkbox"/> Eyes and/or Face: For high risk activities - Safety goggles and face shield</p> <p><input type="checkbox"/> Body: For chemical use, chemical-resistant apron</p> <p><input type="checkbox"/> Other PPE, Specify:</p>

		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 Lab Specific Tasks	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	C9. Working 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 	<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: Splash or splatter may occur - Face shield <input type="checkbox"/> Hands: Heat resistant or chemical resistant gloves. Specify under other PPE. <input type="checkbox"/> Body: If fire hazard, flame-resistant lab coat <input type="checkbox"/> Other PPE, Specify:	
<input type="checkbox"/>	<input type="checkbox"/>	C10. Working with pyrophoric materials.	<ul style="list-style-type: none"> • Fire • Severe burns • Inhalation • Skin damage • Eye damage 	<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: Splash or splatter may occur – Face shield <input type="checkbox"/> Other PPE, Specify:	
<input type="checkbox"/>	<input checked="" type="checkbox"/>	C11. Working with potentially explosive chemicals.	<ul style="list-style-type: none"> • Detonation • Flying debris • Skin damage • Eye damage • Fire 	<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: Splash or splatter may occur – Face shield <input type="checkbox"/> Eyes, Face, or Body: For high risk activities - Blast shield <input type="checkbox"/> Other PPE, Specify:	

     1.0 CHEMICAL HANDLING PROTECTION (Page 4 of 5)				
Task Performed Yes <input checked="" type="checkbox"/> No <input type="checkbox"/>	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. Working with high temperature equipment or objects.	<ul style="list-style-type: none"> • Burns • Fire 	<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: High temperature thermal insulated 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 high temperature equipment or objects <input type="checkbox"/> Face: Splash or splatter may occur – Face shield <input type="checkbox"/> Other PPE, Specify:	
<input checked="" type="checkbox"/> <input type="checkbox"/>	C13. Working with cryogenic material.	<ul style="list-style-type: none"> • Burns • Frostbite • Eye damage 	<input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Eyes: For large volumes - Safety goggles <input checked="" type="checkbox"/> Face: Splash or splatter may occur - Face shield <input checked="" type="checkbox"/> Hands: Inner gloves - Disposable nitrile or appropriate chemical resistant gloves <input checked="" type="checkbox"/> Hands: Outer gloves: Cryogenic low temperature insulated gloves <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"/> 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 	<input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Hands: Disposable nitrile or other 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: Splash or splatter may occur – Face shield <input type="checkbox"/> Body: Chemical resistant apron <input type="checkbox"/> Inhalation: Respiratory protection. Contact EH&S for respiratory protection program assistance. <input type="checkbox"/> Other PPE, Specify:	

		1.0 CHEMICAL HANDLING PROTECTION (Page 5 of 5)				
Task Performed <input checked="" type="checkbox"/> Yes <input type="checkbox"/> 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 	<p>✓ Eyes: Safety goggles</p> <p>✓ Face: Splash or splatter may occur - Face shield</p> <p>✓ Hands: Chemical-resistant gloves for spill cleanup</p> <p>✓ Body: Lab coat; Long pants, skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3)</p> <p>✓ As needed, contact EH&S for assistance</p> <p><input type="checkbox"/> Foot: Shoes covers</p> <p><input type="checkbox"/> Other PPE, Specify:</p>		
<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 	<p>✓ Mandatory: Follow Required Procedure</p> <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. Working with human blood, body fluids, cell lines (primary or established), tissues, or blood borne pathogens (BBP).	<ul style="list-style-type: none"> • Exposure to infectious material 	<input checked="" type="checkbox"/> Hand: Latex or nitrile gloves <input checked="" type="checkbox"/> Body: Lab coat <input type="checkbox"/> Eye: Safety glasses <input type="checkbox"/> Face: Splatter shield on tabletop <input type="checkbox"/> Face: Face shield <input type="checkbox"/> Face: Safety glasses and a mask <input type="checkbox"/> Body: Disposable gown (optional) <input type="checkbox"/> Other PPE, Specify:
<input checked="" type="checkbox"/> <input type="checkbox"/>	B2. Working with animal and/or human specimens preserved in fixative (such as formalin or paraformaldehyde solution) Preserving 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 If tissue is fixed, there is no longer an exposure to infectious material. 	<input checked="" type="checkbox"/> Eye: Safety glasses <input checked="" type="checkbox"/> Hand: Impermeable glove for preserved specimens that is chemical-resistant to fixative used <input checked="" type="checkbox"/> Body: Lab coat <input type="checkbox"/> Body: Disposable gown <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	B3. Working with radioactive human blood, body fluids, or blood borne pathogens (BBP).	<ul style="list-style-type: none"> • Exposure to infectious material • Cell damage • Potential spread of radioactive contaminants 	<input checked="" type="checkbox"/> Hand: Latex or nitrile gloves <input checked="" type="checkbox"/> Eye: Safety glasses or safety goggles for splash hazard <input checked="" type="checkbox"/> Face: Splash or splatter may occur - Face shield <input checked="" type="checkbox"/> Body: Lab coat <input type="checkbox"/> Body: Disposable gown <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input type="checkbox"/>			

		 BIOHAZARD		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. Working 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. 	<input checked="" type="checkbox"/> Hand: Latex or nitrile gloves <input type="checkbox"/> Eye: Safety glasses, for splash or other eye hazard <input type="checkbox"/> Eye: Safety goggles, splash or other eye hazard <input type="checkbox"/> Body: Lab coat <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). 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. 	<input checked="" type="checkbox"/> Eye: If not working in a BSC: Safety glasses <input checked="" type="checkbox"/> Hand: Latex or nitrile gloves <input checked="" type="checkbox"/> Body: Lab coat <input type="checkbox"/> Eye: If not working in a BSC: Safety goggles <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 practices (BSL 2+).	<ul style="list-style-type: none"> • Biological agents that pose a moderate/ serious potential for infection by injection, skin exposure, ingestion or inhalation. 	<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 (BSL-3) containment.	<ul style="list-style-type: none"> • Biological agents that pose a serious or lethal potential for infection via injection, skin exposure, ingestion or inhalation 	<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 checked="" type="checkbox"/> <input type="checkbox"/>	B8. Working 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. Working 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 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: Lab coat <input type="checkbox"/> Body: Gown <input type="checkbox"/> Other PPE, Specify:
<input type="checkbox"/> <input checked="" type="checkbox"/>	B10. Working 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. Working 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. Working 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 	<p>✓ Eye: Safety glasses, for splash or other eye hazard</p> <p><input type="checkbox"/> Eye: Safety goggles, for splash or other eye hazard</p> <p>✓ Hands: Nitrile or vinyl gloves</p> <p><input type="checkbox"/> Body: Disposable gown</p> <p>✓ Foot: Shoe covers</p> <p>✓ 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></p> <p>✓ Additional PPE, Specify: A full body disposable coversuit is more appropriate in an animal facility.</p>
<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. Working with solid radioactive material or solid radioactive waste.	<ul style="list-style-type: none"> • Cell damage • Potential spread of radioactive contamination 	<p>✓ Eyes: Safety glasses</p> <p>✓ Hands: Disposable nitrile or other appropriate radioactive material impermeable gloves</p> <p>✓ Body: Lab coat; Long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3)</p> <p>✓ Work on Sealed Source: Minimum PPE is unnecessary when working with sealed radiation sources</p>
<input type="checkbox"/> <input checked="" type="checkbox"/>	R2. Working with liquid radioactive material (in corrosives, flammables, 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 	<p>✓ Eyes: Safety glasses</p> <p>✓ Hands: Disposable nitrile or appropriate chemical resistant gloves compatible with work with radioactive materials</p> <p>✓ Body: Lab coat; Long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3)</p>
<input checked="" type="checkbox"/> <input type="checkbox"/>	R3. Working with ultraviolet radiation.	<ul style="list-style-type: none"> • Conjunctivitis • Corneal damage • Skin burns 	<p>✓ Eye: UV face shield and/or goggles</p> <p>✓ Hand: Nitrile gloves if hand exposure is possible</p> <p>✓ Body: Lab coat</p>
<input type="checkbox"/> <input checked="" type="checkbox"/>	R4. Working with infrared-emitting equipment (e.g. glass blowing).	<ul style="list-style-type: none"> • Cataracts • Burns to cornea 	<p>✓ Eye: Appropriate polycarbonate infrared filter glasses</p> <p>✓ Body: Lab coat, flame resistant</p>
<input type="checkbox"/> <input type="checkbox"/>			
<input type="checkbox"/> <input type="checkbox"/>			

 <h3>4.0 LASER PROTECTION</h3>			
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. Performing beam alignment. Performing laser experiment. Trouble-shooting 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 	<p>✓ Eye: Appropriate laser safety goggles/glasses with optical density based on individual beam parameters. <i>Contact EH&S to determine appropriate optical density.</i></p>
<input type="checkbox"/> <input checked="" type="checkbox"/>	L2. Viewing a Class 3R laser beam with magnifying optics (including eyeglasses).	<ul style="list-style-type: none"> • Eye damage 	<p>✓ Eye: Appropriate laser safety goggles/glasses with optical density based on individual beam parameters. <i>Contact EH&S to determine appropriate optical density.</i></p>
<input type="checkbox"/> <input checked="" type="checkbox"/>	L3. Working 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 	<p>✓ Eye: Appropriate laser safety goggles/glasses with optical density based on individual beam parameters. <i>Contact EH&S to determine appropriate optical density.</i></p>
<input type="checkbox"/> <input checked="" type="checkbox"/>	L4. Working with infrared-emitting equipment (e.g. glass blowing).	<ul style="list-style-type: none"> • Cataracts • Burns to cornea 	<p>✓ Eye: Appropriate laser safety goggles/glasses with optical density based on individual beam parameters. <i>Contact EH&S to determine appropriate optical density.</i></p> <p>✓ Hands: Nitrile gloves</p> <p>✓ Body: Long sleeved shirt (tightly wound fabric)</p> <p>✓ Body: Lab coat</p> <p><i>Long sleeves, lab coat, gloves, etc. required only in the NHZ (Nominal Hazard Zone)</i></p>
<input type="checkbox"/> <input checked="" type="checkbox"/>	L5. Handling dye laser materials, such as powdered dyes, chemicals, and solvents.	<ul style="list-style-type: none"> • Cancer • Fire • Explosion 	<p>✓ Eyes: Safety glasses</p> <p>✓ Hands: Chemical-resistant gloves</p> <p>✓ Body: Flame-resistant lab coat or coveralls</p>
<input type="checkbox"/> <input checked="" type="checkbox"/>	L6. Maintaining and repairing power sources for Class 3B and Class 4 laser systems.	<ul style="list-style-type: none"> • Electrocution • Fire • Explosion 	<p>✓ Eye: Safety glasses</p> <p>✓ Hands: Insulated gloves</p> <p>✓ Body: Flame-resistant lab coat</p> <p>✓ Body: Coveralls</p>

LABORATORY PPE HAZARD ASSESSMENT

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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. Working with bound or wet nanomaterials	<ul style="list-style-type: none"> • Inhalation • Skin damage • Eye damage • Chemical exposure 	<p>✓ Eyes: Safety glasses</p> <p>✓ Face: Splash or splatter may occur – Face shield</p> <p>✓ Hands: Disposable nitrile or other appropriate chemical resistant gloves</p> <p>✓ Hands: Routinely replace gloves to minimize exposure and hand contamination</p> <p>✓ Body: Lab coat; Long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3)</p> <p><input type="checkbox"/> Other PPE, Specify:</p>
<input type="checkbox"/> <input checked="" type="checkbox"/>	N2. Working 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> <p>✓ Eyes: Safety glasses</p> <p>✓ Face: Splash or splatter may occur – Face shield</p> <p>✓ Hands: Disposable nitrile or other appropriate chemical resistant gloves</p> <p>✓ Hands: Routinely replace gloves to minimize exposure and hand contamination</p> <p>✓ 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)</p> <p>✓ 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></p> <p>✓ Removal of PPE: Give special attention to technique used to remove and dispose of contaminated PPE to avoid skin contact</p> <p><input type="checkbox"/> Other PPE, Specify:</p>
<input type="checkbox"/> <input type="checkbox"/>			

   <h3 style="text-align: center;">6.0 PHYSICAL HAZARD PROTECTION (Page 1 of 2)</h3>			
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"/>	P1. Working with cryogenic liquids.	<ul style="list-style-type: none"> • Skin damage • Eye damage 	<input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Face: Face shield <input checked="" type="checkbox"/> Hands: Cryogenic, low temperature insulated 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"/> Body: Cryogenic apron
<input checked="" type="checkbox"/> <input type="checkbox"/>	P2. Removing 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 	<input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Face: Face shield <input checked="" type="checkbox"/> Hands: Cryogenic, temperature thermal insulated 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"/> Body: Cryogenic apron
<input checked="" type="checkbox"/> <input type="checkbox"/>	P3. Working with very cold equipment or dry ice.	<ul style="list-style-type: none"> • Frostbite • Hypothermia 	<input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Body: Lab coat; Long pants, long skirt, or equivalent leg covering (no shorts); lab footwear (Refer to Page 3) <input checked="" type="checkbox"/> Hands: Cryogenic low temperature insulated gloves
<input checked="" type="checkbox"/> <input type="checkbox"/>	P4. Working with hot liquids. Heating equipment. Open flames (autoclave, Bunsen burner, water bath, oil bath).	<ul style="list-style-type: none"> • Burns resulting in skin or eye damage 	<input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Hands: Inner disposable nitrile or appropriate chemical resistant gloves <input checked="" type="checkbox"/> Hands: Outer thermal insulated 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 checked="" type="checkbox"/> Eyes: Safety goggles for work with hot liquids <input checked="" type="checkbox"/> Face: Splash or splatter may occur - Face shield <input checked="" type="checkbox"/> Hands: Autoclave gloves, impermeable insulated gloves for liquids and steam
<input checked="" type="checkbox"/> <input type="checkbox"/>	P5. Glassware washing.	<ul style="list-style-type: none"> • If glass breaks: Lacerations • Splash from cleaning agents 	<input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Hands: Nitrile or appropriate chemical-resistant gloves <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"/> Hands: If glass breaks, cut resistant gloves

								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. Working with loud equipment, noises, sounds, alarms, etc.		<ul style="list-style-type: none"> Potential ear damage and hearing loss 		<p><input checked="" type="checkbox"/> Hearing: Earplugs or ear muffs, as necessary: Contact EH&S for noise exposure assessment.</p>			
<input checked="" type="checkbox"/>	<input type="checkbox"/>	P7. Working with an apparatus with contents under pressure or vacuum <u> </u> (mm of Hg, psi, or torr).		<ul style="list-style-type: none"> Skin damage Eye damage 		<p><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</p>			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	P8. Working with sharps or broken glass		<ul style="list-style-type: none"> Cuts 		<p><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</p>			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	P9. Working with sharps. Emptying a syringe used with chemicals		<ul style="list-style-type: none"> Exposure to aerosols from syringe 		<p><input checked="" type="checkbox"/> For Aerosols: Safety glasses and mask. <input type="checkbox"/> Other PPE, Specify:</p>			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	P10. Working with compressed gases inside environmental chambers.		<ul style="list-style-type: none"> Asphyxiation Toxic gas exposure 		<p><input checked="" type="checkbox"/> Employee is not allowed to enter and work inside of an oxygen deficient or hazardous chamber.</p>			
<input type="checkbox"/>	<input checked="" type="checkbox"/>	P11. Maintaining and repairing electrically powered equipment.		<ul style="list-style-type: none"> Electrocution 		<p><input checked="" type="checkbox"/> Eyes: Safety glasses <input checked="" type="checkbox"/> Hands: Insulated gloves <input checked="" type="checkbox"/> Body: Coveralls</p>			
<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>STEVEN ROBERTS</i>	Department/Unit: <i>FISHERY SCIENCES</i>	
Building(s): <i>FISHERIES TEACHING & RESEARCH</i>	Room(s): <i>209, 213</i>	
Lab Manager's Name: <i>SAM WHITE</i>	Lab Manager's Phone: <i>5-3273</i>	
Completed by (Print Name): <i>SAM WHITE</i>	Signature: <i>Sam white</i>	Date <i>11/1/2016</i>
Signature of PI: 		Date <i>8/7/2017</i>