University of Minnesota **|** Duluth

1. **Hazard Assessment and Personal Protective Equipment**

**Laboratory Safety Plan/Compliance Manual**

## 2.1 Hazard Assessment

Hazard assessments are important and must be performed on procedures that are new to the laboratory or have not been studied previously. The level of formality and what you need to document will depend on the process being examined.

The ACS has created [guidelines for laboratory risk assessment in the RAMP framework](https://institute.acs.org/lab-safety/safety-basics-and-ramp/what-is-ramp.html). This requires that you:

* **Recognize** Hazards
	+ Read safety data sheets, ensure all containers are labeled, and physical hazards such as heat and mechanical energy are labeled and taken into account in procedures
* **Assess** Risks from Hazards
	+ Determine the consequences of any adverse incidents and how likely they are to occur
* **Minimize** the Risks of the Hazards
	+ Use the hierarchy of controls to minimize risks in the lab by putting engineering controls such as ventilation in place, training and creating SOPs, preventing working alone with chemicals or hazardous equipment, and selecting appropriate PPE
* **Prepare** for Emergencies
	+ Ensure the laboratory has all required emergency response equipment and workers are trained on where to find and how to use them. Think of what would happen to your procedures or set-up if a power outage, evacuation, or other emergency occurred and how you could safely shut down your experiment

Contact the EHSO for training or assistance with hazard assessments. All formal hazard assessment forms should be documented in this section of your LSP. The following resources can help you perform hazard assessments for your laboratory:

[Prudent Practices in the Laboratory Evaluating Hazards and Assessing Risks in the Laboratory](https://www.nap.edu/read/12654/chapter/5)

[UMN Chemical Hygiene Plan – Experiment Planning and SOPs](https://dehs.umn.edu/5-experiment-planning-and-sops)

[ACS Institute RAMP](https://institute.acs.org/lab-safety/safety-basics-and-ramp/what-is-ramp.html)

## 2.2 Personal Protective Equipment (PPE) Requirements

All UMN workers are required to wear long pants/skirts and closed toe & heel shoes while in an area where hazardous materials are stored and used. Some laboratories require additional PPE depending on the hazards and the work conducted there.

Employees must be instructed on how to use, maintain, and store PPE. They must also understand when and why they must wear the PPE and the hazards involved with not wearing the PPE. PPE use is task specific and is determined through hazard assessment depending on specific activities. For assistance conducting hazard assessments, recommendations for specific PPE, or PPE guidance and training, contact the EHSO.

Resource: [PPE Selection Guide](https://dehs.umn.edu/sites/dehs.umn.edu/files/ppe_-_1_page_selection_guide_10_13_2015.pdf)

**In this Lab the following PPE will be worn:** *(PI please write):*

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_