

Appendix C: Available Training Resources and Materials

Prudent safety practices and increasing regulatory requirements call for initial and on-going safety training for laboratory employees. Training requirements are met by a combination of in-service or on-the-job training provided in the laboratory by the principal investigator/supervisor and by courses offered by EH&S. In general, the training requirements for a particular laboratory employee are determined by the individual's potential exposure to specific hazards. The following table describes required and recommended training for laboratory employees.

Summary Of Laboratory Health And Safety

Training Requirements

This list is not all inclusive. Other training may be required depending on the hazards of a specific laboratory. Call EH&S to register for classes (206-543-7201) or visit [EH&S's training website](#) for a current list of courses offered. Pre-registration is required.

Exposure	Requirement	Frequency	Training Compliance
Accident Prevention	All new employees must receive accident prevention (safety orientation) training.	Upon initial assignment.	Employing department provides training. EH&S can provide a training checklist for departmental use.
Benzene	Applies to all occupational exposures to benzene except fluids of < 0.1 % by volume.	Upon initial assignment, annually if airborne concentration exceeds 0.5 ppm	Employing department provides training. EH&S will provide assistance upon request.
Back Protection	All employees who frequently lift over 20 pounds as part of their job are required to have this training.	Upon initial assignment.	EH&S course "Back Protection Program" meets state requirements for lift training.
Biological Safety	All new employees must be trained in the appropriate procedures for handling hazardous biological agents.	Upon initial assignment and when procedures change.	EH&S course "Biological Safety Practices (U-Conjoint 420)" and specific training provided in the lab, or the entire training may be provided by the lab supervisor or PI.

Exposure	Requirements	Frequency	Training Compliance
Bloodborne Pathogen (HIV, HVB)	Training is required for employees exposed to human blood, blood products or body fluids.	Annual	EH&S courses "Initial & Renewal Bloodborne Pathogen Exposure Control for Researchers" meets this requirement.
Chemical Hazards	Training is required for employees who work with hazardous chemicals.	Upon initial assignment and when new chemicals are introduced into the workplace.	<p>EH&S course "Managing Laboratory Chemicals and Spill Clean-up" provides an overview of this subject. Training specific to the chemicals used in a particular lab is provided by principal investigator or supervisor.</p> <p>EH&S course "Laboratory Safety Standard Compliance" is recommended for principal investigators, lab supervisors and others with responsibility for implementing chemical safety programs and conducting chemical safety training.</p> <p>EH&S course "Laboratory Safety System (LSS) Training" is recommended to allow laboratory employees access to chemical hazard information and chemical inventories through the campus computer network.</p>
Chemical Spills	Laboratory employees must be trained in clean-up procedures for the chemicals in use in the lab and in how to report emergencies.	Upon initial assignment and when procedures change.	A combination of the EH&S course "Chemical Spills Clean-up" and specific training provided in the lab, or the entire training may be provided by the lab supervisor or PI.

Exposure	Requirements	Frequency	Training Compliance
Chemical Waste	State and federal regulations mandate strict controls of hazardous chemical waste. Laboratory employees must be trained in UW hazardous waste disposal procedures.	Upon initial assignment and when procedures change	EH&S course "Managing Laboratory Chemicals and Spill Clean-up" meets this requirement. The training may also be provided by the PI or supervisor of the lab.
Compressed Gas	Recommended for employees who will be using compressed gas cylinders.	Upon initial assignment, as needed.	EH&S course "Compressed Gas Safety"
Earthquake / Disaster Preparedness	Not specifically required for laboratory employees but recommended for anyone interested.	As needed.	EH&S course "Earthquake / Disaster Preparedness"
Ergonomics	Not specifically required for laboratory employees but recommended for anyone interested.	As needed.	EH&S course "Laboratory Ergonomics"
Fire Hazards	<p>Fire Extinguisher Training is required for employees who will be permitted to use portable fire extinguishers to fight small fires.</p> <p>Employees who will be working with flammable liquids should receive training in fire safety precautions, including the use of fire extinguishers.</p>	<p>Annual</p> <p>Annual</p>	<p>EH&S course "Fire Extinguisher Training" meets this requirement.</p> <p>EH&S course "Laboratory Fire Safety" meets this requirement.</p>
First Aid/CPR	Not specifically required for laboratory employees but recommended for anyone interested.	Every two years	EH&S course "First Aid & CPR Certification"

Exposure	Requirement	Frequency	Training Compliance
Formaldehyde	Employees exposed to formaldehyde concentrations of 0.1 ppm or greater.	Annual	Employing department provides training. EH&S will provide assistance upon request.
Hearing Conservation	Employees who are exposed to noise levels at or above 85 decibels for an 8 hour shift	Upon initial assignment	Attend EH&S course "Hearing Conservation"
Radiation Hazards (ionizing)	Employees working with radioactive materials.	Upon initial assignment	Attend EH&S course "Radiation Safety Training"
Radiation Hazards (non-ionizing) radio frequency, microwave, laser, ultraviolet.	Training in the control and assessment of non-ionizing radiation hazards is required for employees exposed to non-ionizing radiation.	Upon initial assignment	Employing departments provide training. EH&S provides assistance upon request.
Respiratory Hazards	Where concentrations of airborne hazardous chemicals exceed regulated limits, respirators must be worn and employees must receive respiratory protection training.	Annual	Recommend supervisors complete Respirator Hazards Assessment Form. Employee must be medically cleared prior to fit testing. Attend EH&S training "Respiratory Protection and Mask Fitting" for certification of respirator users.
Shipping and Transporting Hazardous Materials	Shippers and transporters of hazardous materials (including infectious substances) are required to have this training.	Every two years	EH&S course "Shipping and Transporting Hazardous Materials" meets Department of Transportation and International Air Transportation Association training requirement regulations.

The Biosafety Section of Environmental Health and Safety has the following training aids available for loan to laboratories. Call 206-543-9510 for more information.

1. *Assessment of Risk in the Cancer Virus Laboratory* National Cancer Institute 1975 (42 slides, 14-1/2 minutes cassette tape). Considerations for the evaluation of occupational risk in the oncogenic laboratory are presented. The relationship between the person, the experimental procedures, and the agent are discussed and the researcher is provided with information concerning the safe operation of a cancer virus laboratory and the maintenance of appropriate records.
2. *Basic Bloodborne Pathogen Training* Massachusetts Institute of Technology 1991 (15 minutes). A training film for new employees in a research laboratory that handles human blood and body fluids.
3. *Certification of Class II (Laminar Flow) Biological Safety Cabinets* National Institutes of Health 1975 (71 slides, 15 minutes cassette tape). Methods for certifying Class II biological safety cabinets to achieve maximum personnel and product protection are presented. The need, frequency, equipment, and procedures for certification and standards to be met are described. This show is of particular value to building engineers or technicians who have responsibility for maintenance of biological safety cabinets.
4. *Effective Use of the Laminar Flow Biological Safety Cabinet* National Institutes of Health 1975 (52 slides, 16 minutes cassette tape). The proper use of laminar flow biological safety cabinets to achieve maximum protection for laboratory personnel, the working environment, and the integrity of research are reviewed. The step-by-step procedures for cabinet utilization, which include certification, advance planning, set-up procedure, wipe down procedure, handling materials and equipment, room activity, work techniques, terminal purging, decontamination, and shutdown are discussed.
5. *Formaldehyde Decontamination of Laminar Flow Biological Safety Cabinets* National Audiovisual Center 1975 (42 slides, 13 minutes cassette tape). Decontamination protocol for biological safety cabinets is described for personnel whose work involves hazardous agents. Simple procedures are provided for calculating the enclosed cabinet volume, assembling the required equipment and materials, and performing the decontaminating sequence using formaldehyde gas produced by heat-accelerated depolymerization of flake paraformaldehyde.
6. *Hazard Control in the Animal Laboratory* National Institutes of Health 1975 (60 slides, 14-1/2 minutes cassette tape). Animal care hazards, the increased laboratory risks in handling animals, and the measures to minimize these risks are discussed. The subject matter covered includes accidents that have occurred while handling animals or animal tissue, disposal of contaminated tissues, disease hazards, personnel protection, biological safety cabinets, appropriate caging, and treatment of exhaust air.
7. *The Case of the Contaminated Cultures* Eagleson Institute 1991. A video that explains the ins and outs of biological safety cabinets.

8. *Selecting a Biological Safety Cabinet* National Institutes of Health 1976 (35 slides, 9 minutes cassette tape). The design, uses and limitations of each of the three classes of biological safety cabinets are discussed relative to selecting a cabinet to meet the needs of the individual laboratory. Persons who have the responsibility for specifying and recommending biological safety cabinets for experimental tasks will especially benefit from this show.
9. *Universal Precautions in the Laboratory* Syntex and Syva Company 1989 (15 minutes video). A training video appropriate for research scientists and technicians, medical technologists, clinical laboratorians, and occupational health service personnel in facilities that work with human blood and body fluids.
10. *Working Safely with HIV in the Laboratory* Center for Disease Control 1987 (19 1/2 minutes video). This is a training film developed to train laboratory workers at the Centers for Disease Control.

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