

CCS Administrative Procedure

2.30.05-T Biosafety for Laboratory Settings

Implementing Board Policy [2.30.05](#)

Contact: Environmental Health & Safety, 533-8686

1.0 Purpose

Community Colleges of Spokane is committed to the health and safety of its faculty and staff, and in maintaining a safe and efficient workplace that complies with all local, state and federal safety and health regulations, programmatic standards, and with any special safety concerns identified at the unit level. The Community Colleges of Spokane has adopted WAC 296-828–Hazardous Chemicals in Labs to protect employees who perform work where Hazardous Materials are used in a laboratory. Please refer to administrative procedure 2.30.05-D.

The use of hazardous materials in CCS laboratories must adhere to this procedure to maintain a safe work environment for students, staff, and visitors.

2.0 Definitions

- 2.1 Approved Disinfection Technique: Use of an autoclave, exposure to a chemical disinfectant, or other technique to inactivate Biological Agent(s).
- 2.2 Biohazard Materials: Any material that meets the following definitions:
 - 2.2.1 Biosafety level 1 (BSL-1): Biological Agents not known to consistently cause diseases in healthy adults and present a minimal threat to the environment and lab personnel.
 - 2.2.2 Biosafety level 2 (BSL-2): Biological Agents commonly encountered in the community that present a moderate environmental and/or health hazard. These agents are associated with human disease of varying severity.
- 2.3 Biological Agent: Biological agents include viable microorganisms, cells, or viruses and their associated toxins that have been recognized in peer reviewed literature to adversely affect human health. See Biohazard Material above.
- 2.4 Biosafety Hygiene Officer(s): an individual who must work with administrators and other employees to develop and implement appropriate biosafety policies and practices for all laboratories.
- 2.5 Biosafety Hygiene Committee: A group of individuals who review and provide feedback on appropriate biosafety practices for all Laboratory Activities utilizing Biohazardous Material.
- 2.6 Container: any container, except for pipes or piping systems that contains a hazardous substance e.g. barrel, bottle, can, cylinder, drum, reaction vessel, or storage tank.
- 2.7 Emergency: Any event that could or does result in injury and/or the unexpected or significant release of or exposure to a Hazardous Material.
- 2.8 Exposure: The contact that an individual has with a Hazardous Material.
- 2.9 Hazardous Material: Any chemical, biological, or physical material for which there is statistically significant evidence based on at least one study conducted in accordance with established scientific principles that an acute or chronic health effect may occur in exposed employees.
- 2.10 Hazardous Waste: Any waste that contains Hazardous Material
- 2.11 Laboratory: A facility where Laboratory Activities that use Hazardous Material take place.

- 2.12 Laboratory Activity: Any teaching or research procedure where Hazardous Materials may or may not be utilized.
- 2.13 Laboratory Supervisor: The individual who is responsible for the activities taking place in a laboratory. This includes, but is not limited to, faculty during laboratory instruction and Principle Investigators as defined below.
- 2.14 Permissible Exposure Limits (PEL): The concentration of material that the average person may be exposed to for 8 hours a day, 40 hours a week, without known negative health effect.
- 2.15 Principle Investigator (PI): The individual who is directing research taking place in a laboratory. The PI has primary responsibility for establishing, following, and enforcing rules, procedures and methods for the proper control of Biohazard Materials. The PI is responsible for ensuring all research with Hazardous Materials is reviewed and approved by Biosafety Hygiene Committee. The PI is responsible for supervising the safety and performance of laboratory staff and students to ensure that required safety practice and techniques are employed.
- 2.16 SDS: Safety Data Sheet, formerly known as Material Safety Data Sheet (MSDS). A standardized document containing information related to a toxic or Hazardous Material.
- 2.17 Smoking: includes inhaling, exhaling, burning, carrying or possessing any lighted tobacco product; using an electronic nicotine delivery device or related product; or using smokeless tobacco or any other device intended to simulate smoking.

3.0 General Rules

- 3.1 Avoidance of Exposure
- 3.1.1 Laboratory Supervisors will comply with written practices and procedures as outlined in this procedure.
- 3.1.2 Employees will read the BSL-1 and BSL-2 Federal Guidelines prior to working with Biological Agents or Hazardous Materials.
- 3.1.3 Employees will read and review the SDS or appropriate safety documentation before handling a Hazardous Material.
- 3.1.3.1 It is the responsibility of the employee's supervisor to ensure that appropriate training and documentation is provided to employees.
- 3.1.4 Work areas should be kept clean and free of obstructions.
- 3.1.5 When not being used, all materials should be stored in an appropriate manner.
- 3.2 Prohibited Laboratory Activities, unless otherwise communicated by Laboratory Supervisor
- 3.2.1 Eating and drinking
- 3.2.2 Smoking and related activities as defined by WAC 132Q-10-231.
- 3.2.3 Horseplay or unsafe behavior
- 3.2.4 Instructors and Laboratory Supervisors may immediately prohibit an unsafe laboratory practice as outlined in WAC 132Q-94-120.
- 3.2.5 This list is not exhaustive. Consult the Laboratory Supervisor for additional specific prohibitions.

4.0 Choice of Biohazard Materials

- 4.1 The least hazardous material which will be effective in any given task or procedure should be used.
- 4.2 The smallest amount of Hazardous Material needed to be effective in any given task or procedure should be used.
- 4.3 The Biosafety Hygiene Committee must approve the use of any new Biohazard Material prior to the material being introduced into a laboratory. Potential hazards and the appropriate safety precautions must be determined before any new biohazard material is introduced into the laboratory. The committee will consult with the Biosafety and/or Chemical Hygiene Officer as appropriate.

5.0 Container Labeling

- 5.1 The Laboratory Supervisor must verify that original Hazardous Material containers are labeled in accordance with CCS Administrative Procedure 2.30.05 G.
 - 5.1.1 Clear labeling identifying the contents, date of receipt, and receiver.
 - 5.1.2 Appropriate hazard warnings.
 - 5.1.3 The names and addresses of the manufacturer/distributor.
- 5.2 The Laboratory Supervisor must ensure that all secondary storage containers are labeled, tagged or marked with:
 - 5.2.1 Clear labeling identifying the contents, date of receipt, and/or preparation and name of preparer.
 - 5.2.2 Appropriate hazard warnings.
- 5.3 The Laboratory Supervisor must be notified immediately if any improperly marked containers are discovered.

6.0 Storage and Handling of Biohazard Material

- 6.1 Prevention of exposure in Biohazard Material storage and handling areas is based partly on careful and appropriate containment, labeling, and handling of Biohazard Materials.
- 6.2 The Laboratory Supervisor is responsible to ensure that materials are separated, segregated or contained based upon the hazards associated with the material.
 - 6.2.1 Contact the Biosafety Hygiene Committee if you require assistance in identifying the storage requirements for a Hazardous Material.
- 6.3 The Laboratory Supervisor shall ensure that Hazardous Materials are stored in secured areas.
- 6.4 Hazardous Materials must be handled, stored, and disposed of so that there is no confusion about use or mixing with unused materials.
- 6.5 Stock Cultures
 - 6.5.1 The Laboratory Supervisor will keep updated records including identification number (ATCC identification numbers or equivalent) for all microbial stock cultures.
 - 6.5.2 Microbial stock cultures should be inventoried, monitored, and replaced as necessary.

7.0 Personal Protective Equipment (PPE) for use with Biohazard Materials

- 7.1 Students will wear a new pair of disposable gloves during each Laboratory Activity.
- 7.2 All individuals performing Laboratory Activities with BSL-2 materials are required to observe the following rules in addition to any additional instructions given by the Laboratory Supervisor.
 - 7.2.1 All individuals will utilize appropriate eye protection.
 - 7.2.1.1 Safety glasses/goggles shall be kept in the laboratory for the duration of the course.
 - 7.2.1.2 If eye protection becomes contaminated, the user must notify the Laboratory Supervisor and disinfect his or her eye protection prior to removing it from the laboratory.
 - 7.2.2 All individuals will wear an appropriate laboratory coat during laboratory activities.
 - 7.2.2.1 Laboratory coats will remain in the laboratory for the duration of the course.
 - 7.2.2.2 Laboratory coats must be disinfected before being removed from the lab.
- 7.3 Closed-toe shoes must be worn during laboratory activities.
- 7.4 At the end of each Laboratory Activity students will properly remove and dispose of gloves and wash hands.

8.0 General Practices for Working with Biohazard Materials

- 8.1 Laboratory Physical Space Requirements
 - 8.1.1 Biohazard signs must be posted where Biohazardous Agents may be present.
 - 8.1.1.1 A biohazard sign must be posted on or near the laboratory entry.
 - 8.1.1.2 A biohazard sign must be posted on any cabinet, refrigerator, or freezer where Biohazardous Agents are present.
 - 8.1.2 The windows and doors to any laboratory where BSL-2 materials are present should remain closed.
 - 8.1.2.1 In the event that a window must be opened it should contain a screen.
 - 8.1.3 Hazardous Materials in the laboratory should be kept separate from general classroom materials.
 - 8.1.3.1 Personal items such as notebooks, book bags, electronics, and writing implements should be kept away from all Hazardous Materials.
 - 8.1.3.2 After performing a Laboratory Activity utilizing BSL-2 Biohazard Materials, writing implements must be disinfected prior to being removed from the laboratory.
 - 8.1.3.3 Electronic devices may be used with approval of the Laboratory Supervisor. Devices that are used during a Laboratory Activity utilizing BSL-2 Biohazard Materials laboratory must be disinfected prior to being removed from the laboratory.
 - 8.1.3.4 Classroom materials that are used during a Laboratory Activity utilizing BSL-2 Biohazard Materials should be of a non-porous material that can be easily disinfected.
 - 8.1.3.4.1 If a cloth chair is necessary to meet the needs of an individual in the laboratory, that chair should be covered with a disposable liner.

9.0 Unsecured Biohazard Materials

- 9.1 Laboratory Supervisor will ensure an unattended laboratory is secured.
- 9.2 Leave light switches on in any area of unattended laboratory operation.
- 9.3 Post signage on the entry of the laboratory that briefly describes the nature of the unattended operation, list any Biohazard Material, and contact information of Laboratory Supervisor.
- 9.4 Provide for the containment of Hazardous Materials in the event of failure of a utility service.
- 9.5 If an apparatus is likely to be left unattended for long periods of time, electrical overload protection devices should be used if an apparatus fails.

10.0 Biological Hazardous Material Release

- 10.1 The Biosafety Hygiene Officer will post emergency procedures for Biohazardous Material release in appropriate areas.
 - 10.1.1. The name, location and emergency contact information for the Trained Spill Responder(s) will be posted and maintained in areas designated as appropriate by the Biosafety Hygiene Officer.
 - 10.1.2 Faculty and staff are encouraged to contact the Emergency Coordinator whenever the severity of the spill is uncertain or in question.

11.0 Waste Management in Laboratories Utilizing Biohazard Materials

- 11.1 All Biohazardous waste must be disposed of in an appropriate manner.
- 11.2 The Biosafety Hygiene Committee will make all Laboratory Supervisors aware of appropriate procedures through informational materials and periodic safety training.
 - 11.2.1 Laboratory Supervisors are responsible for ensuring Biohazardous waste procedures are followed in their laboratory.
- 11.3 All waste generated in Laboratory Activities will be managed in designated waste collection containers that are clearly labeled as Biohazard Materials.
- 11.4 Disposal procedures are established in accordance with federal, state and local laws and are subject to change. Contact the Biosafety Hygiene Committee for current information.
- 11.5 When planning a new Laboratory Activity, waste minimization must be a primary consideration.

12.0 Employee Information and Training

- 12.1 This procedure, in conjunction with CCS Administrative Procedure 2.30.05 G Hazard Communication Program, provides information on the contents of the laboratory standard and Permissible Exposure Limits (PELs) for regulated substances and recommended exposure level for other Hazardous Materials, as well as signs and symptoms associated with exposures to Hazardous Materials used in the laboratory.
- 12.2 It is the responsibility of the appropriate Dean(s) to ensure that personnel in their divisions are informed of the location and availability of reference materials on the physical and health hazards of the Biohazard Materials found in their workplace.
 - 12.2.1 This information should include the safe handling, storage and disposal of Hazardous Materials in the lab. Such information may be provided by a number

of means, including: this document, printed references, videos, class room training and on-the-job training.

- 12.2.2 The department that possesses the hazardous material will maintain the Safety Data Sheets (SDSs) according to OSHA standards.
- 12.2.3 Employees may readily access SDSs in their department.
- 12.3 Existing training programs must be reviewed periodically to update information about the lab standard. The Biosafety Hazard Committee should review and revise their safety training programs annually.
 - 12.3.1 Laboratory Supervisors must ensure that any safety instruction given in their laboratory is up-to-date with current lab standards as defined by the Biosafety Hygiene Committee.
- 12.4 Faculty and Staff should be made aware that there are potential risks in all activities involving Biohazardous Materials.
- 12.5 All training will be documented with records maintained in the employee's personnel file and copies forwarded to the Human Resources Office.

13.0 Related Information

- 13.1 *Biosafety Guidelines for Handling Microorganisms in the Laboratory*, The Journal of Microbiology and Biology Education: <http://jmbe.asm.org/index.php/jmbe/article/view/531>
- 13.2 *Biosafety in Microbiological and Biomedical Laboratories (BMBL)* 5th Edition, The Centers for Disease Control and Prevention: <http://www.cdc.gov/biosafety/publications/bmbl5/>
- 13.3 *OSHA Instruction for Inspection Procedures for the Hazard Communication Standard*: https://www.osha.gov/sites/default/files/enforcement/directives/CPL_02-02-079.pdf

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