Practical Biosafety
for Vanderbilt Research Labs

This periodic guide is prepared by the VEHS Biosafety Section to highlight lab safety practices related to the use of biological materials in research. Our contact information is provided at the end of this document if you need specific assistance.

BIOSAFETY TRAINING REQUIREMENTS & RESOURCES

Biological materials that fall under the biosafety standards applicable to research include:

- Recombinant DNA molecules
- Agents infectious to humans, animals or plants
- Human-derived materials and cells
- Nonhuman primate-derived materials and cells
- Toxins of biological origin

"The laboratory supervisor must ensure that laboratory personnel receive appropriate training regarding their duties, the necessary precautions to prevent exposures, and exposure evaluation procedures. Personnel must receive annual updates or additional training when procedural or policy changes occur…"

-CDC/NIH Biosafety in Microbiological & Biomedical Laboratories, 5th edition

Personnel working with these materials are likely to have a high level of scientific expertise in order to support the research. However, these personnel need to incorporate biocontainment practices into daily lab activities in order to reduce exposure risk for themselves and others. To do this successfully, they need to be knowledgeable about these practices through completion of initial and annual biosafety training. **It is the Principal Investigator's responsibility to assure that initial and annual training requirements are met, and that training records are maintained and available upon request.** VEHS Biosafety provides support in this regard by offering training sessions, training resource documents, and records for VEHS-provided sessions. New & updated resources are highlighted below.

Biosafety Refresher 2014

All personnel working with materials requiring BSL-2 containment should have initially completed a Principles & Practices of Biosafety course through VEHS or been provided with comparable training delivered by their PI. **These personnel need to complete a refresher each year that focuses on exposure control practices.** The Biosafety Refresher course is a means for those who completed the Principles & Practices of Biosafety course prior to 2014, but did not complete a Biosafety Refresher in 2014, to fulfill their annual training requirements. To register for one of the 3 remaining classes, visit https://www.mc.vanderbilt.edu/gcm/rate/index.php/course/list. The course is listed under the "Environmental Health & Safety" department.

Biosafety 101: Standard Microbiological Practices

This on-line training module is under development and will be made available before the end of January 2015. This module is designed to be an informational primer for ALL PI's who have a BSL-1 or BSL-2 lab. Additionally, it is appropriate for lab personnel who work with biological materials that require BSL-1 containment only. To register for this training, please email Bettye Ridley (bettye.ridley@vanderbilt.edu).

Biosafety Training Guide for Principal Investigators & Lab Supervisors

VEHS Biosafety has prepared a guidance document with a decision tree to determine training needs based on materials in use and a summary table that outlines the avenues for training completion. Please note that this table is not prescriptive in nature in order to allow labs flexibility in fulfilling training responsibilities. The **Biosafety Training Guide for Principal Investigators & Lab Supervisors** can be found at the following link: http://www.safety.vanderbilt.edu/training/biosafety-training-guide.pdf

Turn the page for more Practical Biosafety…

Planning for a new Biosafety Cabinet (BSC)?

There are some key details to address before putting your new (or new to you) BSC to work.

1. If the BSC is being acquired from another location at Vanderbilt, verify that it has been gas decontaminated or "cleared" by VEHS Biosafety before it is moved.
2. Avoid positioning the BSC next to commonly used doors, at the end of busy bench areas, or under air supply vents.
3. Don't have gas connected to the BSC without consulting VEHS Biosafety. Bunsen burners in BSCs should be avoided if at all possible as this is a significant fire hazard.
4. Have the cabinet certified in accordance with NSF 49 after it is positioned and before using it. (If purchasing a BSC, verify with your sales rep whether or not certification is included in your purchased package. NSF-accredited BSC certifiers can be found at: http://info.nsf.org/Certified/Biosafety-Certifier/ .)
5. Contact VEHS Biosafety to let them know the location of the new BSC. An inventory of all BSCs and certification reports is under development to assist researchers in accessing cabinet histories, and to support VEHS Biosafety surveillance activities.

More detailed information regarding biosafety cabinet acquisition and maintenance can be found in the document entitled: Maintaining, Moving & Transferring Class II Biological Safety Cabinets (BSCs).

Example of an ideal BSC setup with waste collection and disinfectant available inside the cabinet. There are no non-essential items in the BSC. The chair is constructed of sealed cleanable materials. Kudos!

Sharps Container Selection: Size Matters!

Sharps containers are intended to minimize the potential for personnel to sustain a needle stick or cut when storing and handling sharps waste. Unfortunately, the potential for an exposure to occur during the process of depositing a device into the container can increase if the container is the wrong size for the devices in use and volume of waste.

Small Container (less than 3 gallons) Considerations

- Easy to position on the bench within arm's reach for immediate sharps disposal.
- Need to be deep enough so that items in use can freely fall inside.
- Most ideal for shorter items like slides, needles, lancets, blades.

Large Container (greater than 3 gallons) Considerations

- Generally too large to be placed on bench, therefore requiring the user to walk to the container with sharp in hand, or to bring the sharp next to their lower body while reaching down to dispose of it.
- Most ideal for large volumes of longer items like Pasteur pipettes and disposable scalpels.

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