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# BioSide Lines

FOSTERING SAFE WORK & LABORATORY PRACTICES THROUGH TRAINING & EDUCATION

## Biosafety Outreach Visits

The Office of Biological Safety (OBS) is committed to expanding and improving upon the biosafety services offered at UW-Madison. Much of this is possible thanks to our new staff as announced in the March 2010 issue of *BioSide Lines*.

One of our top priorities is to connect in person with all campus PIs and laboratories involved in biological research through outreach lab visits. The purpose of these "outreach visits" is two-fold: improving the service we provide to the campus community, and ensuring we remain compliant with the *NIH Guidelines for Research Involving Recombinant DNA Molecules*.

The nature of these visits is designed to be educational, informational and interactive, rather than punitive. Outreach visits focus primarily on lab-specific biosafety issues as well as general safety concerns, welcoming additional questions and feedback from PIs and lab staff. While we prefer that PIs are present during an outreach visit, it is not absolutely necessary as long as a lab manager or other senior lab member who is knowledgeable of overall research goals and lab safety practices is available.

An additional component to the outreach visits is the *Self-Assessment Survey*, which is sent ahead of time to PIs to help prepare for the visit. We ask that PIs complete the form and return by email prior to our arrival. PIs may also be requested to fill out the *Self-Assessment Survey* on an annual basis as an assurance that all research covered on biosafety protocols is up-to-date and conducted according to standard safe work practices.

To request and schedule an outreach visit at your convenience, please call or email our office. The *Self-Assessment Survey* is available for download on the OBS website under "Resources-Outreach Visits." We look forward to working with you to ensure safe and successful biological research at UW-Madison.

# SCIENCE IN THE HOOD:

## *Distinguishing between containment hoods*

**Many labs have "hoods" for containment of potentially dangerous materials,** but it is important to know the benefits and limitations of each type of cabinet.

Biological safety cabinets (BSC) utilize a layer of vertical laminar airflow at the front of the cabinet to protect users, products and the environment. Along with use of the sash at the proper height, the airflow creates a barrier that protects the user from biohazardous aerosols that may be created during handling of pathogenic materials inside the cabinet.

The air within the BSC passes through two HEPA filters, which filter out bacteria, viruses and other microbes. This filtration, combined with proper user practices, results in a near-sterile work surface that is useful for many applications such as tissue culture research or manipulation of microbes. However, the ultraviolet light bulbs in some BSCs provide only limited surface disinfection.

BSCs should be certified by the UW-Madison Environmental Health Program annually and after they have been moved or repaired. A helpful BSC training course (Biosafety 105) is available online through Learn@UW and can be accessed under the "Training" tab on the OBS website.

It is also important to note that BSC design and performance standards as set by the National Sanitation Foundation have changed in recent years. Older BSC models, particularly Baker Biogards, may be increasingly difficult to repair and maintain. The Environmental Health Program recommends replacement of such older models and that labs keep BSC purchasing and certification costs in mind when applying for and budgeting research funding.

Although BSCs can be used for work with very limited amounts of some chemicals, particularly if they are ducted to the outside, chemical fume hoods are often a better choice to limit the user's exposure to hazardous chemical fumes, vapors and dusts. In chemical fume hoods, air from the room is drawn across the work surface and then vented directly outside. This provides protection to the user, but because the work surface is "dirty", a chemical fume hood does not protect materials from microbial contamination. Keeping the sash height at the recommended level is also important for proper functioning of a chemical fume hood.

Chemical fume hoods are certified annually and maintained by the UW-Madison Physical Plant (CARS, 263-3333).

Clean air devices (CAD), or clean room hoods, also use HEPA filtration to provide a clean work surface. However, the air that passes across the work surface of the CAD is directed at the worker. Thus, these cabinets should never be used for work with hazardous chemicals or biological agents, or with radioisotopes.

*For questions regarding BSC certification, maintenance and repair, please contact the Environmental Health Program office at 262-1809.*

*For questions regarding BSC selection, purchasing, and other facility and engineering issues, please contact OBS at 263-2037.*

# TRAINING FORUM:

## *New safety training resources*

**Biosafety has been listening! Several new safety training resources have been developed** recently in conjunction with other UW Environment, Health & Safety (EH&S) divisions and are highlighted below. We thank you for your feedback, which helped prompt these initiatives.

**Training records for the required, online biosafety training modules** (101, 104 and 201) are now searchable through the Graduate School's PLuS system database. Individuals with a UW NetID can access their own and their staff's biosafety training records at: https://my.gradsch.wisc.edu/lookups/citi/trainingStatus.html. We highly encourage PIs to document and keep updated records of all training of lab personnel.

A **comprehensive training directory** has been implemented to facilitate and afford easy access to UW EH&S trainings. The training directory includes an alphabetical listing and description of all safety trainings, as well as information on required and elective trainings. The training directory can be accessed on the EH&S homepage: www.fpm.wisc.edu/safety

A new, elective **training on autoclave use** is available through Learn@UW. Biosafety 106: *Building Biosafety into Your Research - Autoclave Use* is recommended for anyone using an autoclave on campus. This training is designed to give users general safety information and basic use techniques to supplement the autoclave manufacturer's manual.

**Packaging workshops for Bio-HazMat Shipping** certification are available. The workshop is one of two required elements for initial certification through OBS. During the two-hour workshop, attendees receive specialized hands-on instruction for packaging bio-hazardous materials shipments. More details are available on the OBS website.

# POLICY UPDATE:

## *Respiratory protection*

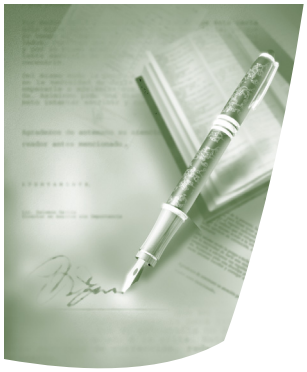
People routinely tell us that they wear a "mask" to protect themselves from exposure to an inhalation hazard, but that term alone does not allow us to determine whether the protection is appropriate. Clear communication about the kind of respiratory protection used is critical since many kinds are available and selection depends on the type and degree of risk present. Wearing a respirator that is inappropriate for a given hazard may provide nothing more than a false sense of security.

Annual fit-testing is a requirement of law for all personnel who are required by their employer to wear respirators on the job. Employees are also required to obtain a physician's written approval (medical clearance) to wear their respirator. Respirator training and fit-testing are offered by the UW Safety Department for UW-Madison employees.

Voluntary use of 'filtering-facepiece' respirators, such as N95 respirators, does not require medical clearance or fit-testing, though it still is encouraged. This exclusion does not apply to cartridge respirators.

Please note that UW-Madison strives to engineer air contaminants out of the workplace whenever possible. In general, we discourage the use of respirators unless engineering controls are not practical or feasible. In addition, air contaminant(s) and concentration in air must be known to select the most appropriate respirator and cartridges.

*For questions, to arrange fit-testing or for medical clearance information, please contact Jim Morrison, Occupational Health Officer at 263-2177; Terry Lawrin, Occupational Health Specialist at 262-6670; or Jim Beduhn, Biosafety Risk Management Specialist at 890-3452.*



# Biosafety Q&A

## *Biosafety Protocol Processing*

### *How do I submit a biosafety protocol?*

New, renewal and amended biosafety protocols should be submitted electronically to OBS by attaching the protocol document to an email and sending to biosafety@fpm.wisc.edu. PIs should sign the first page of the protocol prior to submission or send directly from their email account. If amending a currently approved biosafety protocol, please specify in the submission email the changes being made. Highlighting the changes to the protocol document is also appreciated. Additional instructions can be found on the OBS website under the "Protocol" tab.

### *What can I expect after submitting my biosafety protocol?*

OBS has an established process for reviewing and approving biosafety protocols. Protocols submitted to OBS will be processed in the order in which they were received. OBS reviews protocols for compliance with the NIH Guidelines, UW-Madison Institutional Biosafety Committee (IBC) policies and other biosafety concerns. The OBS specialist reviewing the protocol will contact the PI and/or PI-designated lab member to request a revised version if there are questions or suggested protocol modifications. If the protocol requires review at an IBC meeting, the OBS specialist will also assist the PI with this process.

### *When will my biosafety protocol be approved?*

Administrative amendments are typically approved by OBS shortly after submission. For protocols requiring full committee review, the IBC meets monthly and reviews protocols received by OBS one month in advance (see OBS website for IBC meeting schedule). OBS then communicates IBC contingencies and/or comments to the PI. Once all IBC contingencies have been met and a final revised protocol submitted to OBS, the protocol is approved and a confirmation protocol registration form sent to the PI.

The list of research activities requiring a biosafety protocol is posted on the OBS website under "Protocol-Criteria." Contact OBS for questions regarding full committee review of protocols. OBS also offers onsite visits to PIs to assist with initial writing or revision stages of the biosafety protocol process. To schedule a protocol visit, please call OBS.

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