

# MIDWESTERN UNIVERSITY

## Biosafety Committee

### MWU LAB REGISTRATION FORM

|  |                             |                               |                 |
|--|-----------------------------|-------------------------------|-----------------|
| SUBJECT: Lab Registration Procedure                    | PROCEDURE NO. 1             |                               |                 |
| APPROVED BY:<br>The Biosafety Committee -Downers Grove | ISSUE<br>DATE<br>10/18/2012 | DATE<br>REVISED<br>05/08/2023 | PAGES<br>1 of 4 |

#### PURPOSE:

To establish registration requirements for laboratories and identify potential biological, radiological, chemical, and physical lab hazards in research. It is the intent of Midwestern University (MWU) to fully comply with all external agencies' regulations, standards, and guidelines pertaining to MWU laboratories and research facilities. The required information will facilitate regulatory compliance, agency reporting, and assure safety of the MWU community including: students, faculty, staff, visitors, maintenance personnel and emergency responders.

#### DEFINITIONS:

**Laboratory** – those rooms or spaces having biological, chemical, radiological, or other hazardous materials, research animals, or mechanical equipment, and is used for teaching, research, observation, or measurement. This procedure does not include operations such as mechanical rooms, chase-ways, or operational storerooms.

**Biological Hazard** – any biological material that presents a risk or potential risk to the health of humans, animals, or the environment. This includes recombinant DNA, cultured human and animal cell lines, microbial organisms (i.e.: bacteria, fungi, viruses, protozoa, parasites), prions, biologically active agents that negatively impact living organisms or the environment/community (i.e.: venoms, toxins, allergens), bodily fluids (e.g., blood) and/or sharps.

**Biohazardous Waste** – any waste that contains or may contain hazardous biological materials. Biohazardous waste must be collected and decontaminated by appropriate and approved methods (SOPs) prior to disposal.

**Chemical Hazard** – any molecule (solid, liquid, or gas) that can harm people, other living organisms, property or the environment. This could include flammable, explosive, toxic, corrosive, combustible, oxidizing, or asphyxiating hazards. It may also include materials with characteristics that make it a hazard in specific circumstances.

**Chemical Hazardous Waste** – a solid or liquid contaminated or potentially contaminated with a hazardous chemical. This includes corrosive, toxic, reactive or ignitable hazards that would cause harm if disposed of improperly.

**Radiological Hazard** – Radioactivity is a natural and spontaneous process by which the unstable atoms of an element emit or radiate excess energy in the form of particles and/or waves. These emissions are collectively called ionizing radiation. Radiological hazard can be any radioactive material (solid, liquid, or gas) that can harm or potentially harm people, other living organisms, property, and/or the environment as well as any device that generates ionizing radiation (X-rays) that can harm people and/or other living organisms.

**Radiological Waste** – a solid or liquid contaminated or potentially contaminated with a radioactive material that would cause harm if disposed of improperly.

**LASER Hazard** – LASER is an acronym which stands for Light Amplification by Stimulated Emission of Radiation. The laser produces an intense, highly directional beam of light that can potentially harm researchers. Proper control measures are required to eliminate or reduce the possibility of eye or skin exposure to hazardous levels of laser radiation.

**Mixed waste** -- any waste containing a mixture of two or more forms of hazardous materials such as chemical and biological or chemical and radioactive material that would cause harm if disposed of improperly.

**Sharps** – those needles, scalpels, razor blades, pipettes, or other items that can cause injury by puncturing the skin. If generated in the diagnosis, treatment, or immunization of human beings or animals in research they should be treated as medical sharps waste.

## RESPONSIBILITIES:

### **Biosafety Committee**

- Develop appropriate procedures and guidelines, as defined in this procedure.
- Review and assess the system for laboratory registration
- Review and assess information submitted by laboratories
- Provide guidance and assistance on identification of hazards

### **Principal Investigator/Lab Manager**

- Registration of their laboratories prior to initiating laboratory operations.
- Annual review and respective updates of registration content
- Notify Biosafety Officer and Research Compliance Specialist (see Appendix C) 30 days prior to vacating
- Register changes in use of hazard class or emergency contacts within 14 days of the change.

### **Department Chairs/Deans**

- Ensure laboratories under their supervision register in a timely manner and update their registrations as specified in the procedure
- Notify Biosafety Officer and Research Compliance Specialist (see Appendix C) of vacancies in cases where PI is unable (i.e.: Immediate Termination)

#### **ORSP/Research Compliance**

- Act as a resource to MWU's biosafety institutional committee in relation to this procedure.
- Act as a resource to PIs in relation to this procedure.

SOP: Midwestern University requires that all research laboratories are registered. The registration form created by the MWU Biosafety Committee requests the location, Principal Investigator, lab personnel, and hazards contained in the laboratory. See Appendix A for chemical inventory guidelines.

#### **Procedure:**

- A. All new Faculty/Instructors (hereafter designed as Principal Investigator) who will conduct research in a lab must fill out an MWU laboratory registration form (electronic) before the Principal Investigator initiates the setup of the lab. Forms can be found on the ORSP website and shared U drive (see Appendix B).
- B. Every 12 months, all Principal Investigators must submit an updated MWU laboratory registration form.
- C. If a faculty member acquires a new hazardous material (as designated on the MWU laboratory registration) or makes a significant, major change in lab procedures, an updated MWU laboratory registration must be submitted within two weeks (14 days) of the change.
- D. Rooms that are located within a primary laboratory, are under the control of a single PI, and contain similar hazards, may be registered with the primary laboratory by listing the individual rooms on the same lab registration. Rooms that do not contain similar hazards or are in different buildings must be registered as separate. Rooms that house more than one PI or department should be registered by each PI or

department with information corresponding to the hazards of operations under their control.

E. For all new or revised MWU laboratory registration forms:

The form must be signed, either by the Principal Investigator or a Research Associate/Technician assigned to that faculty member. The signed, electronic version of the form must be sent to the Research Compliance Specialist (see Appendix C). PDFs are not acceptable as they limit transfer capabilities into the database.

F. One month before a Principal Investigator departs MWU, a Laboratory Close-Out checklist must be submitted which details how all hazardous materials have been handled (i.e., specify that each hazardous material was either transferred to someone (specify who) or disposed of (specify how)) and include a statement that all relevant MWU, Local, State, and Federal regulations were complied with. This form must be signed by the Principal Investigator responsible for the MWU laboratory registration.

## Appendix A

### • Chemical Inventory Guidelines

On an annual basis, each lab will be responsible for reviewing and updating items in the electronic inventory (*MSDSonline* eBinder) match what is currently found in the lab and other storage areas, such as common areas, refrigerators/cold rooms, and freezers. The required information will facilitate regulatory compliance, agency reporting, and assure safety of students, faculty, staff, visitors, maintenance personnel and emergency responders. In addition to the OSHA regulations for hazard communication, there are other regulations and guidelines, which require an inventory system.

- Environmental Protection Agency (EPA) – Emergency Planning and Community Right-to-Know Act (EPCRA) hazardous chemical storage reporting
- Department of Homeland Security (DHS) – Chemicals of Interest (COI)
- Centers for Disease Control and Prevention (CDC) – Select agents and toxins
- Drug Enforcement Agency (DEA) and Bureau of Narcotics and Dangerous Drugs (BNDD) – Controlled Substances and List I & II regulated chemicals
- International Building Code - Flammable material and other storage limits
- Local Fire Department Requirements – Flammable material storage limits
- Veterans Administration (VA) – mandated inventory reconciliation every 6 months for VA funded researchers

In order to achieve and maintain compliance, Midwestern University has committed to inventorying chemical containers on site as described below in "Items REQUIRED to be Inventoried," except those exempted below under "Items NOT REQUIRED to be Inventoried".

Initially, all labs will have to comply by manually inventorying all required material items mentioned in the "Items REQUIRED to be Inventoried" below. However, there are other materials which are highly regulated and may require more frequent inventory updates. These materials are items of interest to federal and local agencies, such as Department of Homeland Security, Centers for Disease Control and Prevention, Local Fire Department, etc. and are more controlled to prevent the following:

- Release: quantities of toxic, flammable, or explosive chemicals that have the potential to create significant adverse consequences for human life or health if intentionally or unintentionally released, detonated, or involved in a fire.
- Theft or Diversion: materials that have the potential, if stolen or diverted, to be abused or used as weapons, which can ultimately lead to significant adverse consequences for human life or health.
- Sabotage or Contamination: chemicals that, if mixed with other readily available materials, have the potential to create significant adverse consequences for human health or life.

### **Items REQUIRED to be inventoried:**

Any, but not limited to, chemical containers that have a manufacture's label which denotes physical or health hazards, or whose SDS denotes hazards, are to be included in the inventory. In general, laboratory chemicals and reagents are inventoried even if the hazard is considered low. Almost all

chemicals received from chemical manufacturers such as Sigma-Aldrich, Fluka, Alfa Aesar, Fisher Scientific, etc., will be included in the lab inventory. The list below provides some examples of common materials that need to be inventoried.

- All chemicals/reagents regardless of hazard class
- DHS Chemicals of Interest ( [http://www.dhs.gov/xlibrary/assets/chemsec\\_appendixa-chemicalofinterestlist.pdf](http://www.dhs.gov/xlibrary/assets/chemsec_appendixa-chemicalofinterestlist.pdf) )
- DEA scheduled materials ( <https://www.dea.gov/drug-scheduling> )
- Select agents that are classified as biological toxins ( <https://www.selectagents.gov/selectagentsandtoxinslist.html> )
- All flammable solvents, to include primary & secondary chemical containers that are brought into the lab from another location such as:
  - 10-gallon carboy of ethanol that is filled from a primary 55-gallon drum at the loading dock and brought into the lab
  - Materials that are transferred or inherited from another lab
- All organic solvents, including liquid scintillation counting cocktail
- Other research drugs and therapeutics
- Shock sensitive and potentially explosive mixtures produced by the lab must be inventoried (e.g., Bouin's stain made from saturated picric acid solution, serial dilution of ether mixtures, or hydrogen peroxide greater than 3% solutions).
- Lecture cylinders, small compressed gas cylinders or small propane cylinders
- Corrosive cleaning agents (e.g., strong base/acid solutions, RNASE away, Chromerge, etc.)
- Materials used for maintenance, repair, or cleaning (e.g., bleach, mineral spirits, oils, lubricants, and greases including vacuum pump fluid)
- Photographic chemicals
- Activated charcoal
- Chemical kits\*
- Dyes and stains

\* Chemicals contained in a kit are usually not individually inventoried. They can be inventoried under the kit name.

### **Items NOT REQUIRED to be inventoried:**

Even though some items may not be entered into the inventory, the user is still able to obtain a current SDS via *MSDSonline* for the product. The list below provides some examples of common materials that do not need to be inventoried.

- Any secondary chemical container that is produced in the lab from a primary chemical container(s) that is already inventoried such as:

- 1N NaOH that is made from previously inventoried 10N NaOH solution or solid NaOH
  - Squirt bottles and spray bottles
  - Tris Buffer
  - TBE Buffer
  - Conical and “Falcon” tubes that must be properly labeled with chemicals or samples in them
- Tissue culture media or other growth media, including dry media (e.g., casein hydrolysate).
  - Buffer solutions for pH probes
  - Waste containers bearing chemicals or chemicals already registered should not be registered. Note an inventory of waste material should be properly maintained on the waste container and on excel or word for providing info when a waste pick-up is organized.
  - Non-chemical diagnostic materials that contain a film on any surface (e.g., 96-well plate, ELISA)
  - Chemical spill kits
  - First aid kit (may include calcium gluconate as a first aid for hydrofluoric acid burns)
  - Non-Hazardous metals such as foils, bars, and rods
  - Test strips (pH, water hardness, iron, phosphate, etc.)

**Note:**

Each PI or designated person(s) will be responsible for the proper hazard determination for all mixtures that are commonly made and used in the research lab. For hazard classification guidance concerning mixtures and solutions, the Hazard Communication Standard (29 CFR 1910.1200) states that a mixture (or solution) will be considered as having the same health hazards as the components that comprise  $\geq 1\%$  of the mixture ( $\geq 0.1\%$  for known carcinogens in the mixture).

## Appendix B

- **Location of Lab Registration forms:**

- U drive – BioSafety Comm – Lab Registration folder
  - Form A – New User\_Lab registration DG
  - Form B – Annual Renewal\_Lab Registration DG
  - MWU Laboratory Registration Procedure
  - MWU Laboratory Registration FAQs
- Office of Research and Sponsored Programs (ORSP) website
  - <https://www.midwestern.edu/intranet/departments-services/orsp/compliance-irb-citi-iacuc-bio-rad-ire/laboratory-registration>

- **Location of Laboratory Close-Out check list:**

- U drive – BioSafety Comm – Lab Safety Compliance – Lab Opening-Lab Close-out folder
- Office of Research and Sponsored Programs (ORSP) website
  - <https://www.midwestern.edu/intranet/departments-services/orsp/compliance-irb-citi-iacuc-bio-rad-ire/biosafety>

## Appendix C

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