New U-M Chemical Hygiene Plan

OSEH has released the new U-M Chemical Hygiene Plan, which establishes a standardized program designed to protect laboratory personnel from hazardous chemicals in accordance with the requirements of the Michigan Occupational Safety and Health Act (MIOSHA) Part 431 Hazardous Work in Laboratories Standard.

CHP policies promote a healthy and safe work environment and provide information on best practices in laboratory health and safety. The new format simplifies the process for Principal Investigators (PIs) by eliminating the need to complete a template, ensuring everyone understands the same procedures for similar hazards, and creating a simple compliance document binder to maintain lab specific activities.

The document is web-based and includes information to ensure that all laboratory personnel have working knowledge about the hazardous chemicals they use. The CHP is available on the OSEH website along with a new compliance document binder and standard operating procedures for chemicals frequently used at U-M: http://www.oseh.umich.edu/research/chemical.shtml

All personnel working in laboratories should read and become familiar with the CHP and its university-wide requirements. Principal Investigators will be required to maintain the compliance document binder with appropriate information and lab specific procedures for any hazards not addressed within the CHP.

Inside this issue:                             Page
OSEH’s Safety First Recognition Award                     2
How to Register for OSEH Laser Safety Training / Lacerations 3
Research Safety Updates                                     4
Cold Room Cleanliness                                       5
GHS Impact to HazCom and Lab Safety Standards                6
Common Pollutants in Stormwater Runoff                       7-9
Notes from the Director                                     10
OSEH UPDATE

Radrick Farms GC staff earn Safety First Award

OSEH is very pleased to announce that the Radrick Farms Greens Keepers/Maintenance Staff have earned our inaugural Safety First Recognition Award! The Safety First Recognition Award celebrates U-M employees who excel in creating and maintaining a safe workplace.

OSEH congratulates them for outstanding efforts to emphasize the importance of health & safety in their various programs. The Radrick Farms Golf Course incorporates intensive equipment safety training for staff, including seasonal staff. The equipment-training program includes initial instruction, equipment operation under supervision, feedback, follow-up training, and performance evaluations.

Radrick Farms Golf Course has not had an injury that prevents the employee from returning to work the next day since 2007.

If your work or play brings you into contact with Radrick Farms staff, please offer a hearty CONGRATULATIONS to their team:

- Robert Norworyta, Golf Course Greenskeeper II
- Clint Kutzley, Golf Course Greenskeeper II
- Levi Moore, Golf Course Greenskeeper I
- Matt Weiland, Golf Course Greenskeeper I
- Lincoln White, Auto Mechanic II

We are now accepting nominations for our next Safety First Recognition Award. Find out what it takes to win and how to nominate someone by visiting our website: [http://www.oseh.umich.edu/safetyfirst/index.shtml](http://www.oseh.umich.edu/safetyfirst/index.shtml) or talk to your OSEH representative!
How to Register for OSEH Online Safety Training

Registration for OSEH safety training courses can be done online via the MyLINC system:

http://www.oseh.umich.edu/training/mylinc.shtml

1. Log in using your U-M uniqname and password.

2. Enter the course code, for example, BLS040w, into the search box located on the upper left of the webpage, click “Go”.

3. Click “Register”.

4. Submit your registration and start your training - anytime, anywhere!

If you have questions about this process, please contact SafetyTraining@umich.edu.

Lacerations

Lacerations (cuts) are one of the most common injuries associated with laboratories. Common laboratory equipment, such as razors, needles, and broken glassware, are often the causes of these injuries. Laceration protection is also very easy to practice. Preventing lacerations can be as simple as double gloving and wearing sleeved garments during procedures with sharp equipment. Other options include puncture-resistant gloves, needleless connector systems, retractable instruments, or self-blunting needles. In the case of broken glassware, all contaminated (used) broken glassware should be handled carefully with appropriate laboratory attire and stored in appropriate hazardous waste containers. If laboratories are associated with departments that have glass repair services, non-contaminated glassware may be stored in a separate container to await repair. In some circumstances, departments may have procedures for disposal of uncontaminated glassware. Contact your facilities supervisor for your departmental policies.

For more information, please contact your local OSEH representative or visit the OSEH website at http://www.oseh.umich.edu/index.shtml.
Training

In addition to the classroom style version of Comprehensive Laboratory Safety Training (topics covered include chemical safety, PPE, bloodborne pathogens) presented monthly at the OSEH office, we now offer an online option. The online courses BLS025w, Required Chemical Laboratory Safety Training, and BLS101w, Required Bloodborne Pathogens Training, are considered equivalent to the content of the Comprehensive Laboratory Safety class when both courses are completed successfully. Those individuals not anticipating to work with human derived materials such as blood, serum, plasma, tissue, etc. would not need to complete BLS101w. There is also an online course, BLS204, for anyone intending to ship materials with dry ice. You can register for these courses and many others with a safety and health focus via http://www.oseh.umich.edu/training/index.shtml

Laboratory Safety Inspections

All research laboratories and ancillary rooms have been assigned a numerical rank based on the hazards that are present in the space. This rank is part of the Lab Hazard Ranking (LHR) program that has been instituted by OSEH to objectively prioritize labs for audit based on: type(s) of hazardous materials present and quantities, hazardous operations and equipment, engineering controls and procedures, and facility history. The intent is to institute cyclical lab audits based on the LHR.

There are four LHR classes ranging from very low hazard (LHR 1) to the most potentially hazardous (LHR 4). The frequency of audits varies from 24 months for LHR 1 labs to 6 months for LHR 4 labs. As an example, the typical university lab with non-production volumes of toxic and flammable chemicals would be assigned as a LHR 3 with a 12 month cycle of inspections.
Cold Room Cleanliness

Cold rooms provide an ideal environment for the growth of mold due to high humidity and limited air changes. Mold growth in cold rooms can present research contamination issues as well as potential personal health issues due to inhalation of mold spores.

Proper steps can be taken to prevent the onset of mold in cold rooms. Controlling moisture levels and disposing of wet or damp organic material (i.e. cardboard and paper products) is critical in preventing mold growth in cold rooms. Furthermore, proper housekeeping is imperative in the prevention of mold growth. Please use the following procedure to maintain a mold free cold room:

- Report all plumbing leaks to Plant Operations at 7-2059.
- Clean up all spills in a prompt manner.
- Keep the cold room door tightly shut to prevent the formation of condensation.
- Discard wet or damp cardboard and paper products.
- Limit storage of cardboard and paper products inside of cold rooms. Consider placing cardboard and paper products that must remain in the cold room in sealed plastic containers.
- Implement wipe down of surfaces using cleaning solution of 1:10 dilution mixture of household bleach (or dish detergent) and water. Make sure all surfaces are wiped dry of excess cleaning solution using a dry cloth. Always wear proper personal protective equipment (PPE) when performing cleaning activities. This includes lab coat, gloves, and eye protection.
- Consider implementing a cleaning history log for cold rooms with multiple users/occupants.

In instances where small amounts of mold are suspected, steps can be taken to properly remove mold and mold-covered materials in a safe manner.

- Proper PPE should be worn when performing cleaning activities. Proper PPE includes a lab coat, gloves, and eye protection.
- Promptly remove and discard contaminated items in sealed plastic bags. There are no special requirements for disposal of moldy materials.
- Wipe down surfaces using a cleaning solution of 1:10 dilution of household bleach and water. Make sure all surfaces are wiped dry of excess cleaning solution using a dry cloth.
- Do not wet wipe electrical fixtures or components. Electrical equipment must be unplugged before wiping down. A damp cloth is all that is needed for cleaning—be careful not to use too much liquid.

In instances where heavy mold contamination is detected, please contact OSEH for a consultation to determine whether professional cleaning services are necessary.

Call OSEH at 647-1143 for any questions or concerns.
MIOSHA/OSHA has recently adopted the GHS (Globally Harmonized System) of Classification and Labeling of Chemicals. This impacts both the Hazard Communication (HazCom) Standard (MIOSHA Parts 42, 92 and 430) and Laboratory Safety Standard (MIOSHA Part 431) by providing a common and coherent approach to classifying chemicals and communicating hazard information on labels and safety data sheets.

Hazard Communication is a program required by MIOSHA that conveys information to workers about the properties, inherent dangers, and applicable protective equipment required for chemicals in their workplace. The Laboratory Safety Standard was created specifically for workers in non-production laboratories to protect them from occupational exposure to hazardous chemicals. These and other MIOSHA/OSHA Standards provide rules that also protect workers from biological, physical, and safety hazards.

Adoption of the various elements of the GHS will be gradually phased in over the next three years. This includes GHS-based systems for required labeling by manufacturers by the end of 2015, updates on alternative labeling and hazard communication programs by the middle of 2016, and training of all affected employees by 12/01/13.

For affected U-M employees, i.e., those in Departments with a HazCom program or who work in a laboratory, the mandatory GHS training can be satisfied by completing the on-line training (module BLS040w) via OSEH's My LINC system.

Material Safety Data Sheets (MSDS) will now be simply Safety Data Sheets (SDS) and they will be in a standardized, user-friendly, 16-section format. There will also be new chemical Hazard Classifications and Severity Rankings as well as new Label elements that include Pictograms, Signal Words, Hazard Statements, and Precautionary Statements.

For more information refer to the links below:

MIOSHA's GHS Update:
http://www.michigan.gov/lara/0,4601,7-154-61256_11407-284831--,00.html

OSHA's HazCom website:
http://www.osha.gov/dsg/hazcom/

Sigma-Aldrich GHS Summary:

Fisher Scientific CLP/GHS Summary:
http://www.ie.fishersci.com/about_us/clp.php
What is Stormwater?

Stormwater is exactly what it sounds like, it is the water resulting from rainfall and storms. Stormwater can evaporate and go back into the air, it can infiltrate or soak into the ground, or it can run-off impermeable surfaces such as roadways, parking lots, and roofs to the nearest storm drain. As cities grow and urban sprawl continues to rise, more and more impermeable surfaces result in increased stormwater runoff.

What’s the Big Deal with Stormwater Runoff?

As stormwater runoff travels across impermeable surfaces, it can collect pollutants such as dirt/sediment, motor oils, fuels and metals from vehicular use, trash, and nutrients from fertilizer. This polluted runoff then enters stormwater inlets, where it moves through a series of underground pipes, and ultimately discharges into surface waters such as rivers, lakes, streams, or wetlands.

In addition to the direct negative impact of the pollutants, runoff discharges often contain large volumes of water, travel at high velocities, and can cause stream levels to rise rapidly. The increased stream flow often results in rapid erosion of stream banks and quickly degrades wildlife species and their habitat.

Common Pollutants in Stormwater Runoff

The following is a list of common stormwater runoff pollutants and how they could impact YOU!

- **Nutrients (Nitrogen, Phosphorus, etc.)** can cause algal blooms which may result in fish kills that will have a direct impact on water recreation and fishing (and thus tourism and the economy). Algal blooms are not only physically harmful to the environment, but they are also visually degrading and often smell bad.

- **Trace Metals** are often bound to sediments in stormwater runoff and may pose a threat to both the environment and human health.

- **Sediment/Trash/Debris** can result in degraded aquatic habitat and health. This impacts water recreation and the environment.

- **Oil/Grease** results in degraded aquatic life and habitat, reduces the aesthetic appeal of water-bodies, and can be harmful to the environment and to human health.
Common Pollutants in Stormwater Runoff

- **Salt** - results in degraded aquatic life.
- **E.Coli and other Bacteria** - excess E.Coli and bacteria are harmful to human health and, when elevated, may result in beach closures.

Another (commonly overlooked) negative impact of stormwater runoff is an increased cost to treat drinking water. Most drinking water is taken from natural sources such as lakes and reservoirs and the more polluted these waters are the more difficult and costly it is to treat the water to meet drinking water standards. **Did you know** that Ann Arbor takes a large percentage of the water you drink from the Huron River?

![A dead fish washed ashore during an algal bloom in Lake Erie](image)

How can you help?

First and foremost, learn more about stormwater and stormwater management in your area! Become familiar with stormwater regulations and initiatives by checking out the University of Michigan stormwater webpage and other helpful resources. Also, be conscious of how your actions at work and home may impact stormwater runoff and start using some every day best management practices. A few examples to get you started are listed below.

- **Fertilize Properly** – don’t go overboard with the fertilizer! Excess fertilizer will not be absorbed by your grass or plants and may leach out into the storm system and into rivers and lakes. Fertilizers contain nutrients that may promote algal blooms and fish kills! Be sure to become familiar with local fertilizer regulations. For instance, fertilizers containing Phosphorus are regulated in the city of Ann Arbor. Also, do not mow your grass shorter than 3 inches to promote healthy root growth. A better root system can help your grass soak up more water, thereby reducing stormwater runoff. When possible, you may also want to partially or entirely replace your lawn with low maintenance shrubs, native grasses, or other perennials.

- **Clean Up Pet Waste** – when pet waste is not promptly collected it may get washed away during the next rain storm and end up in the nearest lake or river. Don’t swim with your pet waste-pick up after your pet!
Common Pollutants in Stormwater Runoff

- **Car Wash Care** - be careful where you wash your car! Be aware of where the nearest storm drains are and try to prevent wash water from entering the drains. If possible, wash your car on a grass or gravel area to encourage wash water to soak into the ground rather than turn into runoff, or use a commercial car wash where the water is collected and properly treated.

- **Rain Barrels** - buy or build a rain barrel to capture water from your roof drains. You can use the captured rainwater to water your plants or grass; reduce your water bill and reduce stormwater runoff!

For more ideas on how you can help, or to learn more about stormwater management at the University of Michigan, please visit the OSEH Environmental Protection & Permitting Program Stormwater webpage: [http://www.oseh.umich.edu/environment/storm.shtml](http://www.oseh.umich.edu/environment/storm.shtml)

If you have any questions about the University’s stormwater program, please contact the OSEH Environmental Protection & Permitting Program at (734) 936-1920 or at stormwater@umich.edu.

Let’s all do our part to

*Keep our Michigan Waters BLUE!*

_Huron River at the University of Michigan Arboretum_
Notes from the Executive Director

This past year has proven to be a time of transition for the OSEH department. We’ve undergone restructuring efforts to bring a higher level of emphasis to our research, biological and operations safety programs; and created a new associate director role for Danielle Sheen over that side of the OSEH house. We have seen management transitions with Tim Cullen’s retirement and Steve O’Rielly’s promotion to manager of the environmental group. Our focus now turns toward assessing and directing our energies at improving our primary mission—support for you, our customer here at the university.

The effort I have, for want of a more descriptive term, called ‘One OSEH’ is working to break down the walls between our various service areas. Each member of the department needs to understand enough about the workings of the whole to be able to respond to your needs or create a smooth handoff to another expert. When you receive an approval for some activity it needs to be an OSEH approval, not one program area saying yes but you also need to talk with some other program area. It all looks easy on paper, but will take time to accomplish—stay tuned.

One of the successful efforts implemented over the last couple of years has been our voluntary sustainable laboratory certification program—allowing research staff an opportunity to help work toward the university wide sustainability goals established by President Coleman. At the same time the labs create a cleaner and safer operation for the researchers, reducing waste and chemical hazards. The success of this program was recognized recently by the State of Michigan as we received the Governor’s Green Chemistry Award for 2013. Feel free to contact your OSEH representative if you have an interest in taking part in this program.

This Update provided you with a number of new initiatives being rolled out by OSEH. There will be more to come in the year ahead as well as a number of challenges. We have a new campus wide Biosafety Leadership Team co-chaired by OSEH and OVPR that is working to improve the process for safely using biological materials on campus. We are moving into increased security measures required by the Nuclear Regulatory Agency, Centers for Disease Control, and Department of Homeland Security—covering physical, personnel, and information security that impacts a slice of the research happening on campus. And there is always the continuing challenges that come with new research and new construction.

Let me close by wishing each of you a safe and successful year ahead.

[Signature]