

The University of Illinois at Urbana-Champaign

Institute for Genomic Biology Safety Manual

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Updated by R. Mann
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INTRODUCTION TO SAFETY AT THE IGB

This manual is designed to acquaint existing and incoming IGB personnel with the safety infrastructure and major safety policies and operating procedures of the IGB. The interdisciplinary work and open lab environment of the IGB can create complex safety issues, and it is important that IGB personnel be aware of and abide by policies and procedures directed towards the needs of that environment as well as general safety policies and procedures. A large body of additional information, guidance and general safety and operating procedures are available on the Safety page of the IGB Web site. Included are an online version of this document as well as the IGB Chemical Hygiene Plan and the IGB Building Emergency Action Plan (BEAP).

The purpose and intent of IGB Safety and Compliance, served by the Associate Director of Operations and Facilities for the IGB, is to provide a safe environment for researchers, support staff, students and visitors, encourage and enable the development of a safety culture within the Institute and enhance the Institute's public image, while minimizing disruption to research activities. IGB Safety and Compliance, which is a part of the IGB Operations and Facilities Office, develops and administers comprehensive safety and compliance programs, which in concert with other campus safety units and in partnership with the IGB research community, assures compliance with regulatory requirements. Additionally, IGB Safety and Compliance interfaces with outside agencies as is required and appropriate, provides teaching and training programs for personnel using IGB facilities, maintains safety equipment and supplies and a collection of safety resource materials, and coordinates other safety and compliance-related functions within the IGB.

EMERGENCY SAFETY CONTACT INFORMATION

EMERGENCY (fire, police or ambulance, major spills)

911 from a cell phone or campus phone

Maintenance / Repair off-hour Service (Facilities and Services)

217-333-0340

IGB Safety and Compliance (Robert Mann)

bobmann@illinois.edu , Office phone 244-8346,

Cell phone 217-840-7964

Facilities and Services Division of Safety and Compliance

(Spills outside of buildings)

217-265-9828

The Division of Research Safety

Chemical Waste Disposal

217-333-2436

MTD SafeRides (transportation for individuals)

217-265-7433

When an emergency arises outside of normal business hours, inform one or more of the following persons after making the appropriate emergency calls indicated above:

Robert Mann, Occupational Safety Coordinator

Office phone 217-244-8346

Cell phone 217-840-7964

Jesse Southern, IGB, Operations and Facilities

Office phone 217-244-1834

Cell phone 217-898-4456

Any faculty member directly involved in the space where the emergency occurred.

NON-EMERGENCY SAFETY CONTACT INFORMATION

IGB Safety and Compliance (Robert Mann)
bobmann@illinois.edu, Office phone 217-244-8346, Cell phone 217-840-7964

Non-emergency Police Department

217-333-8911

Campus non-emergency fire service

217-333-9711

Urbana Fire Department, Gregory Drive Substation

217-333-3985

For other safety contact information, see the Safety page of the IGB Web site at http://www.igb.uiuc.edu/facilities&services/safety_compliance.html.

IGB-SPECIFIC SAFETY POLICIES AND PROCEDURES

Safety Organization at the IGB

Primary safety responsibility at the IGB lies with the Director of the IGB. The Occupational Safety Coordinator for the IGB coordinates the safety and compliance program within the IGB and serves as the liaison to campus safety units, campus safety committees and outside city and regulatory agencies. The IGB Safety Committee, comprised of faculty and IGB theme Lab Managers from individual themes have responsibilities as outlined in each of those documents in the appendices. IGB Faculty share in responsibilities as are outlined in the Office of the Vice Chancellor for Research (VCR) Webpage titled What Compliance Does My Research Require? [OVCR Link](#) a copy of the text is included in the appendices. Each individual researcher has responsibility for safety in areas where the researcher works as is outlined in CAM policies for Environmental Health and Safety "EH&S.

Safety Requirements for New Employees and Students

All new employees and students working in IGB laboratories are required to complete safety training intended to familiarize them with IGB emergency, safety and security policies appropriate to their work. Prior to receiving keys and/or card access to IGB space, researchers and others working in laboratories are required to take both the General Online Laboratory Safety Training provided by DRS and the IGB Online Safety Training appropriate for the work they will be doing, and to pass the corresponding IGB safety exam. The training is intended to familiarize them with the IGB space and safety policies and procedures corresponding to their work and provide a portion of initial training required for their work.

Ongoing Training for Continuing Employees and Students

Regulatory and funding agencies require ongoing (e.g. annual) safety training depending on activities that employees and students are involved in. A list of campus training opportunities is maintained on the Safety page of the IGB Web site. Some annual and specific training is provided by the IGB Safety Coordinator. To request a training session contact the IGB safety coordinator at 244-8346 or bobmann@illinois.edu

Laboratory Closeout when Leaving the IGB

All researchers must go through a close-out process upon leaving IGB space. For researchers within a research group that are staying in the space the theme Lab Manager for that group is responsible for coordinating the close-out of the researcher who is leaving. If an entire research group is leaving the IGB, arrangement for close-out should be made through the IGB safety coordinator. A copy of the IGB Closeout Checklist is in the appendices. Some items on the checklist may not be applicable to everyone.

Risk Assessment

Any time a researcher at the IGB is planning an experiment that involves a hazardous operation, consideration must be given to the type of hazards that will be involved and the dangers those hazards pose. A thorough evaluation of the materials, equipment, surrounding environment, personal protective equipment, and personnel must be conducted. It is important to the safety of the researchers that all potential risks are evaluated and proper safety precautions are taken in order to minimize the potential for an accident. A good set of standard operating procedures (SOP) to outline how the experiment can be conducted in a safe and efficient manner should be developed. Risk assessment checklists are available at the DRS website to assist in the assessment process.

Standard Operating Procedures SOP

Standard operating procedures should be written for all materials and procedures that pose a potential risk to the health and safety of laboratory personnel. SOPs should include exposure control measures and safety precautions that address both routine and accidental chemical, physical, biological or radiological hazards associated with the procedure. SOPs should be implemented as a primary means to inform and educate laboratory personnel about hazards in their work place. The Principal Investigator (PI) or Laboratory Supervisor is ultimately responsible for the development of SOPs and should review the information to determine if it is correct and adequate.

SOPs should be written by someone who has sound knowledge and experience with the material, equipment, and related procedures. Before writing an SOP, the author should think through all steps of a procedure and utilize the information gathered from the risk assessment. This process allows for standardization of materials and methods, as well as identifying safety issues associated with the procedure. It is important to become familiar with all aspects of hazard

identification and how such information should be used as the basis for SOP development.

Personal Protective Equipment (PPE) and Personal Hygiene

PPE, which is required by the IGB and provided by the Themes, along with personal hygiene are basic aspects of laboratory safety. Wearing appropriate personal protective equipment and practicing good personal hygiene as described below will minimize exposures to hazardous materials during routine use and in the event of an accident.

Eating, Drinking, the Storage of Food for Human Consumption and the Application of Cosmetics are not allowed in IGB laboratories, including the desk areas within the theme labs. Human food storage must be separate from lab chemical, lab biological or radioactive material storage. Food for human consumption should also not be stored in the constant temperature rooms.

Hand Washing: Hands should be washed frequently throughout the day, after glove removal, before leaving the lab, after contact with any hazardous material, and before eating, drinking, smoking, or applying cosmetics.

Attire: Wear a lab coat or apron, cover legs (no shorts or skirts) and feet (no sandals or open-toed shoes), confine loose clothing and long hair. Nylons and/or pantyhose are not recommended because they may melt upon contact with acid, trapping the acid against the skin.

Eye Protection: It is state law and campus policy that personnel including students, staff and visitors in laboratories wear safety glasses, goggles, or face shields at all times where eye hazards are a possibility. Chemical splash goggles are recommended when chemical splashes are possible.

Contact Lenses: Contact lenses may be worn in the IGB laboratories; however, they do not provide any protection for the eyes. Persons who wear contacts must wear the same eye protective equipment as persons who do not wear contacts. It is advisable for a person wearing contacts to inform co-workers and advisors of the contacts, so that if there is an

emergency situation involving chemicals and the eyes, potential emergency responders will know to remove the contacts.

Face Shields: Full-face shields must be worn when conducting a procedure, which may result in a violent reaction.

Gloves: Gloves are essential when working with hazardous substances. The proper gloves will prevent skin absorption, infection or burns without significantly affecting dexterity. Poor dexterity could increase the risk of chemical spills. Glove materials vary in effectiveness in protecting against chemical hazards, and gloves of the same material may differ in the time it takes for a chemical or solvent to pass through the gloves and in the volume of material that easily passes through the gloves. Consult a chemical resistance chart, ideally from the specific glove manufacturer, or contact Robert Mann for assistance in appropriate glove selection.

Respiratory Protection: Administrative controls (different materials or procedures) and engineering controls (chemical fume hoods, biological safety cabinets and other ventilation strategies) are always preferable to protection by PPE. Work in a chemical fume hood when working with materials that produce hazardous vapors or fumes. If the use of a respirator is required for work that can not be performed in a chemical fume hood, compliance with the UIUC Respiratory Protection Program, administered by the F&S Division of Safety and Compliance, is required. The Respiratory Protection Program includes requirements for a medical assessment, fit testing and instructions on proper use of respirators.

Transportation of Chemical, Biological and Radiological Materials

Inside the IGB: Transportation of chemicals, solvents and other potentially hazardous materials must incorporate secondary containment to minimize the chance of accidental release of material. Rubber bottle carriers for 4-liter bottles or lab carts with sealed shelving are examples of appropriate secondary containment. If an elevator is used to transport a Dewar containing a cryogen, the Dewar must be maintained in a manner that assures that the Dewar will not tip over, which could cause possible asphyxiation conditions within the elevator and adjoining spaces.

Passengers should not accompany Dewars of cryogenics, as if the elevator malfunctions, oxygen could be displaced in the elevator compartment.

Transportation to and from the IGB: Chemical, biological and radiological materials should not be brought into the IGB without specific knowledge of a PI and must be contained appropriately for the transportation of the particular material. Personal insurance companies are known to cancel insurance on people found carrying laboratory chemicals in personal vehicles. If transported in vehicles, the vehicles must be appropriate for carrying the materials.

Open Lab Issues

In the open lab environment, many people can be easily impacted by one individual's unsafe practices. Control of potentially hazardous materials needs to be carefully overseen by everyone in the labs.

Radioactive, Biological and Highly Toxic Material Security: While the intent of biosafety is to protect people from dangerous pathogens, the intent of biosecurity is to protect pathogens from dangerous people. Potentially hazardous radioactive and chemical materials also need to be secured from people who should not have access to them. Regulations for many such materials require that the materials be kept under lock and key. The IGB is designed to accommodate the security needed, but every individual in every lab needs to assist in assuring that spaces that need to be secure remain locked, without doors being propped open, and that no one who is not authorized to be in the labs is allowed in the labs.

General Use of Shared Space: Shared lab space inherently has the perception of no one researcher having responsibility for areas within the space. In order to maintain a safe environment, all researchers need to maintain an acute awareness of how they can help to maintain an environment that is safe for everyone. Likewise, while one group may be doing lab work, another group may be in a visiting, and the later group may not be thinking about others doing lab work. It is important to keep in mind, and assume that at any time others in the lab may be working with potentially hazardous materials.

Chemical Control: It is important that researchers take personal responsibility in the storage, disposal and use of chemicals. Chemical inventories should not be allowed to build up beyond needed volumes. Be careful when purchasing chemicals to only purchase what you know will be used, as money saved by purchasing materials in larger quantities is quickly surpassed in disposal costs, and larger quantities can often mean larger hazards.

Biosafety Level Work: In theme laboratories where biosafety level 2 work is being performed, the entire lab where the BL-2 work is taking place is seen as a BL-2 lab, and everyone who may be working in the lab needs biosafety level 2 awareness training provided by the theme.

Unattended Operations: If operations need to be unattended, a system of controls for the operation must be in place to keep potentially hazardous materials in proper containment in the event of malfunction of equipment, accidental disruption by building maintenance personnel, interruptions in electric service, cooling water or inert gases and other unexpected situations; e.g., for unattended water use, an appropriate combination that may include a water pressure regulator, properly rated tubing, hose clips, locking quick disconnects and a thermocoupled heating control, spill detector or flow detector that shuts off power to equipment if cooling water flow stops must be used. If in doubt of what is required to make an unattended situation safe, talk to The IGB Safety Coordinator.

Emergency Equipment and Supplies are generally provided by the IGB with assistance in maintaining the supplies provided by the theme safety coordinators.

Safety Showers and Eyewashes: The IGB provides safety showers in laboratory areas and eyewashes at every hand washing sink in the labs. The IGB will see that the emergency showers are flushed according to campus standards. The theme safety coordinators are responsible to see that eyewashes are flushed weekly.

First Aid Kits, Emergency Spill Kits and Water Cleanup Shop Vacs: The IGB provides first aid kits, spill kits and clean water cleanup shop vacs in theme labs and other specific areas of the IGB. The IGB Facilities services are responsible for keeping the kits in the theme spaces stocked

and the water shop vacs maintained. The shop vacs have motors in them that can produce sparks and should never be used in a situation where flammable materials, flammable solvents or flammable vapors or gases could be drawn into them.

Fire Extinguishers: The IGB provides fire extinguishers and sees that the extinguishers are inspected annually by the campus fire safety group. IGB Facilities will check the fire extinguishers monthly to insure they are accessible and in good working order. The lab Managers are responsible for reporting extinguisher use to IGB Safety Coordinator. Periodically Fire extinguisher training is offered by the Urbana fire department. Notifications will be sent out to all employees encouraging them to participate in these training sessions when they are offered.

First Aid Classes and CPR Classes

First aid and CPR classes are made available to the campus community through the Illini EMS (student organization) at a minimal cost. The IGB will pay for first aid and CPR classes for theme safety coordinators who would like to receive the training.

IGB Personnel Assisting in Emergencies

Anyone with appropriate training in emergency response may assist in what they are trained to do; however any such assistance is voluntary. No one at the IGB is required to provide emergency assistance as a condition of employment.

Children and Unauthorized Persons

Children and other unauthorized persons should not be in laboratories where hazardous materials or hazardous equipment are being used.

Working Alone

When working with hazardous materials, it is advisable to have a second person present, within yelling distance, or at a minimum, maintain contact via telephone. Special protection and consideration is required for work with high energy materials, high pressures, some types of work with electrical systems, transfer of flammable liquids, except in very small quantity, work with quick-acting, highly toxic materials and experimental research or laboratory procedures where previous experience has shown the desirability of having assistance available.

Refrigerator/Freezer/Constant Temperature Room Storage and Labeling:

These units should be labeled and used according to the following:

(Human) Food Refrigerator/Freezer

This unit is for food storage only and should never be located in a lab. Do not store laboratory chemicals in this unit. Do not store flammable liquids/materials in this unit; it has not been explosion protected.

Laboratory Refrigerator/Freezer/Cold Room/Warm Room

Do not store food in this unit. Do not store flammable liquids/materials in this unit; it has not been explosion protected.

Flammables Refrigerator/Freezer

Do not store food in this unit. The interior, but not the exterior of this unit has been explosion protected; do not use this unit in a space where the exterior of the unit would need to be explosion protected; i.e., a potentially explosive atmosphere.

Explosion-proof Refrigerator/Freezer

Do not store food in this unit. This unit may be used to store flammable liquids/materials and may be used in an area where exterior explosion protection is required.

Constant Temperature Rooms

Do not store food or flammable liquids/materials in this unit. Do not store anything in the unit that could cause an unsafe breathing environment.

Chemical Odor Control from Drains

Laboratory drains are a common source of chemical odors in labs, when the water in the drain trap evaporates and the negative pressure within the lab relative to the drainage system draws air and chemical vapors backwards through the drainage system into the lab. To avoid this condition, run a small

amount (a liter is usually sufficient) of water into normally unused drains at month intervals.

Headphone/earphone and Cell Phone Use in Labs

Headphones/earphones and cell phones should be used with careful discretion. Headphones/earphones can make it difficult to hear important warning sounds of machinery or other researchers, and users of cell phones can easily become distracted from their work.

Perchloric Acid Use

If perchloric acid is heated above ambient temperature, it may evaporate and condense on ductwork in the form of explosive perchlorates. Hence, when heating perchloric acid above ambient temperature, a perchloric acid chemical fume hood with a water wash down system or a local scrubbing or trapping system must be used.

IGB EMERGENCIES

What to Do and What Will Happen in an Emergency

General Procedures: For any serious emergency where outside emergency assistance is needed, call 911 from a campus phone or from a cell phone. If a chemical is involved with the injury, hospitals and perhaps emergency responders will want a copy of the Material Safety Data Sheet (MSDS) for the chemical used. Hospitals usually require the MSDS from the specific manufacturer. If possible, always have someone meet the emergency responders outside to provide information to them and take them to the location of the emergency.

Emergency Calls – Who Will Respond: If pulling a fire alarm pull station lever alone or if calling 911 to report a fire or large (HAZMAT) spill, four fire apparatuses and a command vehicle will respond. For a 911 medical call, one fire apparatus and one ambulance will respond. For a chemical incident (that is, once it has been determined that it is not a large, dangerous spill), one fire apparatus and a command officer will respond.

Emergency Medical – Minor Emergency: First aid kits are available in the labs. If injured when work applies towards a degree, go to McKinley Health Center (non-life-threatening) or (Provena Covenant or Carle) hospital emergency room. If injured when work is not degree-related, go to Christie (7am-6pm M-F) or Carle (8am-5pm M-F) Occupational Medicine Department (non-life-threatening) or (Provena Covenant or Carle) hospital emergency room. Inform the supervisor and fill out an incident report form.

Emergency Medical – Major Emergency: Call 911 to get emergency medical assistance. If possible, have someone meet the emergency responders outside. Voluntary medical assistance may be provided prior to emergency responders' arrival by trained personnel. Inform the supervisor as soon as possible and fill out an incident report form.

Chemical Spills to the Body: If the spill is major, such that the spill cannot be rinsed off in a sink, use the closest emergency shower in the lab to flush off the chemical. Remove clothing that had chemical contact. **DO NOT HESITATE TO USE EMERGENCY SHOWERS** - there may be a water cleanup afterwards, but the safety of the individual is much more important! Rinse any spills for 15 minutes with a flow of water. The water is warmed so that extended showering can take place without discomfort. If a safety shower is used, call 911 for additional medical assistance, and if possible, have someone meet the emergency responders outside. Inform the supervisor as soon as possible and fill out an incident report form.

Chemical Spills to the Eye: Flush the face and eyes with the nearest plumbed emergency eyewash for 15 minutes. Hold the eyes open with fingers or get assistance to hold the eyes open. **DO NOT HESITATE TO USE EMERGENCY EYEWASHES!** The water is warmed so that extended rinsing can take place without discomfort. Call 911 for additional medical assistance. If possible, have someone meet the emergency responders outside. Inform the supervisor as soon as possible and fill out an incident report form.

Hydrofluoric Acid Spills to the Body: Get immediate attention. HF differs from other acids because the fluoride ion readily penetrates the skin, causing destruction of deep tissue layers, including bone. Pain associated with exposure to solutions of 1-50% may be delayed. If HF is not rapidly neutralized and the fluoride ion bound, tissue destruction may continue for

days and result in limb loss or death. HF is similar to other acids in that the initial extent of a burn depends on the concentration, the temperature, and the duration of contact with the acid.

Chemical Spills – General: Simple spills can be cleaned up with the chemical spill kits provided in the labs, following the directions that are in the spill kits. Complicated spills require assistance from the fire department. If building evacuation is necessary, or if you are unsure if it is, pull the fire alarm pull station lever to evacuate the building and then call 911 to describe the nature of the spill.

Defining and Classifying a Chemical Spill for Cleanup: A spill is complicated if a person is injured, the identity of the chemical is unknown, multiple chemicals are involved, the chemical is highly toxic, flammable or reactive, the spill occurs in a “public space” such as corridor, the spill has the potential to spread to other parts of the building, the clean-up procedures are not known or appropriate materials are not readily available, or the spill may endanger the environment such as reaching waterways or outside ground. If none of these criteria are met, the spill is defined as a simple spill.

Mercury Spills: For small mercury spills that are in a controlled space, use the Hg Absorb provided in the lab spill kits, following directions on the containers. For larger spills, contact Robert Mann or contact DRS at 217-333-2755. If the mercury is in a heated location such as an oven, where mercury vapor would be rapidly generated, evacuate the lab until assistance arrives and determines that conditions are safe.

Fires and Fire Extinguishers: In the event of a fire emergency within the IGB, the top priority is the safety of personnel. If the fire alarm is activated, all personnel must treat it as if there is an actual fire somewhere within the IGB and an evacuation of the building is mandatory. To evacuate the building you should:

- Remain calm.
- Notify others in the area of the alarm if they did not hear it.
- Exit the building via the nearest safe exit route.
- Do not use elevators to exit.
- Report to the designated evacuation area.

- Wait at the evacuation area for directions.
- Do not reenter the building until emergency staff gives the "all clear" signal.

Using a fire extinguisher

It's easy to remember how to use a fire extinguisher if you can remember the acronym **PASS**, which stands for Pull, Aim, Squeeze, and Sweep.

P. Pull the pin. This will allow you to discharge the extinguisher. The pin is usually held in by a plastic tie. This plastic tie will ne to be removed before the pin will come out.

A. Aim at the base of the fire. If you aim at the flames, the extinguishing agent will fly right through and do no good. You want to hit the fuel.

S. Squeeze the top handle or lever. This releases the pressurized extinguishing agent in the extinguisher. ABC dry chemical extinguishers will discharge a white powder extinguishing media

S. Sweep from side to side. Start using the extinguisher from a safe distance away, then move forward. Once the fire is out, keep an eye on the area in case it re-ignites.

Emergency Signage is posted at the entrance to any lab or room that may contain some type of hazard.

Emergency Information Door Signs are provided at each theme lab entrance and in other appropriate locations in the IGB. The emergency information door sign will contain the emergency contact information including names and phone numbers of people who should be immediately contacted to help facilitate the appropriate response to an emergency situation. The door sign will also contain the hazard identification information for any hazardous substances located within that particular laboratory. The hazard information is communicated using the Globally Harmonized system of pictograms. These door signs are located at the entrance to every laboratory so that emergency responders can easily use it to make calls to people listed on the card. It is important that the information on these cards be kept current. An example of the emergency information door sign is included in the appendices.

Emergency Evacuation Maps and Other Safety Information is posted next to the main elevators in the atrium on each floor of the IGB. Emergency response guides are posted at the receptionist's desk in each theme.

Use of Safety Showers and Eyewashes

Safety showers and eyewashes are activated by pulling a handle or pushing a paddle. The devices are designed to stay on until manually turned off, so that hands are free to remove clothing, hold eyes open and assist in flushing. Warm water is provided by the appliances so that extended flushing can take place comfortably. The recommended flushing time for any chemical spill to the body or eyes is 15 minutes. **DO NOT HESITATE TO USE THESE DEVICES!** It is preferable to have an extra lab coat available for people who need to remove clothing. If clothing removal is needed, it is preferable to have someone available to keep people from the area of the lab where the shower is being used.

Tornado/Weather/Earthquake Emergencies

Definitions: *Tornado Watch* - Be alert. Atmospheric conditions in the county are such that a tornado could develop. *Tornado Warning* - Prepare to take cover. A tornado has been sighted in the area. Prepare to take cover immediately if you hear the siren or are advised of this situation via other media. *Tornado Season* - The tornado season for the Champaign-Urbana area is generally from March 1 to August 1.

Tornado Response: If notified of a *Tornado Watch*, tornado information is available on WILL AM 580 or other local stations; Tornado alert information will also be sent through the Illini Alert texting and email system. Be aware of the possible sounding of sirens and have laboratory equipment set up such that equipment can be left in the event of a tornado warning. If notified of a *Tornado Warning* via siren, take cover for a period of 30 minutes in the IGB tornado shelter, which is marked by signs in the east hallway area of the concourse. If the immediate danger continues to exist, the siren will be sounded again at the end of that 30-minute period, or any time after that 30 minute period that a new, immediate danger develops. *No all clear signal will be sounded.*

Weather Emergencies Other than Tornadoes: Links to information on severe weather, such as severe thunderstorms and blizzards, can be found on the Safety page of the IGB Web site.

Earthquakes: The IGB is built to accommodate earthquake activity for this area of the state. Although no major activity is expected, it is always wise to plan for activity by storing potentially hazardous materials where they can not easily fall off shelves.

Building Issues such as Steam and Water Leaks: For steam, water and other utility issues in normal working hours (8 a.m. – 5 p.m.), contact the IGB Facilities office at facilities@igb.uiuc.edu or 217-333-0860. For repairs off hours, call the campus Facilities and Services office at 217-333-0340.

IGB Theme Lab Manager Responsibility Guidelines

- 1. Serve as a liaison between theme members, the IGB Safety and Compliance Coordinator and other safety contacts** for providing information and materials to theme members and bringing safety-related questions, concerns and suggestions from theme members to the attention of appropriate responsible people. As appropriate, meet with or attend meetings with other Theme Safety Coordinators and the IGB Safety and Compliance Coordinator to discuss safety information and concerns.
- 2. Maintain the theme safety information** The Theme Lab Manager should designate a place in the lab that will contain the Theme Safety Binder, which should serve as the theme safety manual and theme biosafety manual. The binder should contain a copy of the IGB Safety Manual, the IGB Chemical Hygiene Plan, protocols within the theme, SOPs, and other materials such that it can be used as a safety training reference. Also located in this area there should be a copy of Prudent Practices in the Laboratory, Biosafety in Microbiological and Biomedical Laboratories, , accident report forms and other safety-related references as appropriate.
- 3. Assist in the safety training program of theme members and development of the IGB safety culture** This could include providing information to theme members about what to do in the event of emergencies, showing theme members how to access Material Safety Data Sheets, how to use safety equipment. etc.
- 4. Assist the theme in preparation for and contingency planning for the safety and security aspects of emergency and non-emergency situations** such as safe and secure storage of hazardous materials, power outages (planned and unplanned) or for emergency departures from the labs in emergencies such as for tornado warnings or fire evacuations.
- 5. Assist in the maintenance of lab emergency equipment and supplies** by performing or coordinating weekly flushing of eyewash stations, monitoring supplies in first aid kits and spill kits, and reporting fire extinguisher use.
- 6. Where appropriate, inspect or assist in various safety inspections and audits and assist in the abatement or resolution of deficiencies or issues found in the inspections or audits.**
- 7. Serve as a liaison between theme members and the Division of Research Safety (DRS)** to provide information to theme members for the proper disposal of excess chemicals and chemical waste, disposal of sharps, etc. Assist in the assurance of the segregation of chemical waste as required by DRS.
- 8. Coordinate as needed the recycling program for the theme**

- 9. Provide accident report forms to theme members**

- 10. Coordinate the updating of emergency door notices**

- 11. Maintain theme location(s) for theme safety supplies**, which may include visitors' safety glasses and other safety supplies that are for the benefit of the theme rather than for individual theme members.

- 12. Perform the safety checkout of research personnel within the theme that are leaving IGB space**

Model Closeout Procedures Check-List

<u>Hazardous Material/Procedure</u>	<u>Date Completed or N/A</u>
Chemicals	
If moving chemicals off campus, prepare chemicals for shipment according to DOT requirements.	
Transfer ownership of chemicals to lab(s) that can use them and have agreed to take them.	<hr/>
Dispose of all remaining chemicals through DRS.	<hr/>
Clean all surfaces with strong detergent.	<hr/>
Controlled Substances	
If transferring substances to another DEA registrant, submit appropriate forms to U.S. DEA prior to transfer.	<hr/>
If disposing substances, submit appropriate forms to U.S. DEA prior to and after disposal.	<hr/>
Conduct appropriate transfer or disposal of controlled substances.	<hr/>
Gas Cylinders	
Return to supplier.	<hr/>
Contact DRS to arrange for disposal of non-returnable cylinders.	<hr/>
Sharps	
Place in sharps disposal container.	<hr/>
Arrange for disposal of full containers by contacting BSS (3-2755).	<hr/>
Cultures, Stocks and Disposable labware	
Collect and autoclave waste in an autoclavable bag; overbag with opaque trash bag; dispose in regular waste stream.	<hr/>
Clean incubators, ovens, refrigerators.	<hr/>
Pathological Waste	
Dispose of tissue via incineration. Contact BSS for information	<hr/>
Dispose of preservative. Contact CSS (3-2755) for information.	<hr/>
Clean refrigerators/freezers.	<hr/>
Radioactive Materials	
Package all radioactive materials for disposal and arrange pickup.	<hr/>

IGB Office Safety Inspection Checklist

Housekeeping:

1. *Aisles are uncluttered.* Aisles are free of debris or materials which create a projection hazard, and in rooms with multiple desks should be maintained at or near 36" clear.
2. *Floor is free of debris which could create a slipping/tripping hazards.* The floor of the office must be maintained free of water and other materials which could create a slipping hazard. In addition, the office floor must be maintained free of cords and other materials which could create a tripping hazard.
3. *Trash cans and recycle cans are not overflowing.* All trash cans and recycle cans must be emptied on a regular basis to prevent them from overflowing and creating an unhealthy condition and/or fire hazard.
4. *Room is free of excess combustible materials.* The room must not be used for the storage of excess boxes, plastic and other combustible materials which could create an unreasonable fire hazard.

Storage:

1. *All boxes and other materials are stored in an orderly manner.* All office materials are stored in an orderly non-hazardous manner inside storage cabinets or on shelves.
2. *Shelves do not appear to be overloaded.* The shelves within the office do not appear to be overloaded, buckling and/or pulling away from the mounting surface.
3. *Stored materials do not create a hazard.* Other stored materials in the office do not create any additional hazards. Considerations include the storage of flammable and combustible liquids, materials with sharp or jagged edges, and hazardous chemicals.

Other considerations:

1. *Equipment within the office appears to be in good repair.* All of the equipment in the office appears to be in good condition. Considerations include exposed electrical conductors, broken sharp edges and exposed hazardous mechanical parts.
2. *There are no frayed electrical cords.* There are not frayed electrical cords on the office equipment or power strips being used.
3. *Power strips and extension cords are being used properly.* Power strips are in locations where they can be inspected and are not daisy-chained. Extension cords are being used only as a temporary means of providing power to equipment and they are not run through doors, walls, floors or any other location where they could be damaged.
4. *Coffee pots and their cords are in a location where they do not create a physical, fire or spilling (burn) hazard.* Coffee pots are located such that they do not create a projection hazard, they are no to close to combustible materials and they are not likely to be knocked over and spilled.
5. *Electrical panels are accessible.* If existing, electrical panels in the office are immediately accessible with no less than 36 inches clear distance in front of them.
6. *There are no obvious fire hazards.* There are no other obvious fire hazards within the room, e.g. gasoline cans and flammable chemicals.