Following the EHS annual lab review, corrective actions are required for any deficiency noted below. Based on the severity of the finding, each review item has been classified as requiring immediate or 30-day resolution. A 30-day follow-up meeting will be scheduled by the safety advisor to review and document all corrective actions, if necessary.

New questions are written in red text.
REQUIRED DOCUMENTATION IS IN BOLD.
Items requiring 24-hour corrections are highlighted yellow.

<table>
<thead>
<tr>
<th>Bldg.</th>
<th>Room Number(s)</th>
<th>Lab Phone #</th>
</tr>
</thead>
</table>

### Chemical Hygiene

#### GE004
The Lab Chemical Hygiene Plan (CHP) is reviewed annually, contains pertinent lab-specific information and/or procedures (if needed), and is available in the lab.
- **ANNUAL TRAINING OF CHP WITH STAFF (DATE/SIGNATURES)**
- Any lab-specific procedures are included (including work requiring prior approval or work with Particularly Hazardous Substances)
  
29 CFR 1910.1450 (e)

#### GE005
Is the lab chemical inventory, including compressed gas cylinders and mass/volume unit sizes (e.g. kg, lb., ft³, etc.), in the inventory management system and up-to-date? [Must be updated annually; required for Department of Homeland Security regulations and Emergency Responders]

EHS contacts: Rachelle Justice for general assistance, 353-4692, Rick Byrum for DHS/COI issues, 335-9379

6 CFR 27.203
ER-RTK
29 CFR 1910.1450 (h)
40 CFR 370

#### GE006
Lab uses sound electrical safety practices.
- All cords in good condition
- No exposed wiring
- No permanent extension cord use. UL-rated power strips for approved electrical equipment only (appropriate amperage).
- No power strips in hoods
- Cords are clear of burners or other heating equipment
- Cords not powering machines are not plugged into the wall (no idle cords)

29 CFR 1910.303(b), 1910.305(g), 1910.334(a), 1910.334(c)

### IA State Fire Code

#### GE013
Machinery and tools are properly guarded.
- If guards are defective or missing, is the machinery taken out of service?

29 CFR 1910.212(a)

#### GE008
The chemical fume hood airflow is not blocked with equipment or chemical containers. Sashes are closed when hoods are not in use. [Large equipment should be raised ~2” to allow flow toward back of hood; items in the hood should be set back at least 6” from sash; back slots are not blocked; front airfoil is not blocked.]

Fume hood has been checked by EHS in the past 12 months.

29 CFR 1910.1450 (e)
NFPA 45 2011, 8.13.1

#### GE009
There is no evidence of food and beverage consumption in lab hazard areas.

29 CFR 1910.141(g)(2)
29 CFR 1910.1450 Appendix A

#### GE011
The lab's chemical safety data sheets are stored in an approved electronic format or locations within the lab.
| GE012 | Controlled substances are stored in a locked cabinet and labs maintain a usage log for their controlled substances.  
- Last four digits of the DEA registration number:  
- DEA registrant’s name:  
- Name of controlled substance(s):  
- Controlled substances use is animal or non-animal related?  |
|---|---|
| GE010 | Lab Housekeeping is adequate to minimize safety incidents.  
- No overfilled biohazardous waste/sharps containers.  
- No slip, trips, or fall hazards  
- No recapped sharps.  
- All house vacuum lines have filters and double traps.  
- Used gloves are disposed of properly in biohazardous waste containers.  |
| GE014 | Are all 3b and 4 lasers registered with EHS? |

**Emergency Preparedness**

**EP001** Current emergency contact information is posted inside the lab and includes lab-specific contacts. What form of emergency communication does the lab utilize (check all that apply)?  
☐ Fire alarm  
☐ Phone system  
☐ Other – Please Describe:

**EP002** Spill guides are readily accessible to personnel.

**EP003** Spill supplies are readily accessible in one location and employees know their location and proper use. Supplies are adequate for the hazardous materials used in the lab.

**EP004** Safety showers and eyewashes are properly located (within the room/lab if working with corrosives).

**EP005** Electrical panels are not blocked.  
- Electrical panels should have 36” deep clearance in front of the panel, 30” wide across the front of the panel.  
- Electrical panels should have floor to ceiling clearance.

**EP008** Safety showers and eyewashes are not blocked.

**EP007** Plumbed eyewash stations are tested/flushed at least monthly and a record of testing is maintained for each eyewash station. Self-contained eyewash stations are visually inspected at least monthly and flushing fluids changed out per manufacturer’s schedule or at least annually.

**EP005** Electrical panels are not blocked.  
- Electrical panels should have 36” deep clearance in front of the panel, 30” wide across the front of the panel.  
- Electrical panels should have floor to ceiling clearance.

**EP010** Are designated employees allowed to reset tripped circuit breakers  
- If yes, who is the designated employee?  
- Do they have appropriate PPE?

**EP011** If first aid kits are available, expired materials are removed.
### Waste Management

Hazardous chemical wastes are collected and stored according to the following requirements:

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>WM001</td>
<td>Waste is collected in a container that is compatible with the waste.</td>
</tr>
<tr>
<td>WM002</td>
<td>Wastes are stored at or near the point where they are generated and in an area controlled by the generator of the waste. A satellite accumulation poster is present.</td>
</tr>
<tr>
<td>WM003</td>
<td>Waste containers are labeled as soon as waste is added. All waste containers are labeled with the official EHS Hazardous Waste label.</td>
</tr>
<tr>
<td>WM004</td>
<td>Waste containers are in good condition and are closed except when adding or removing waste.</td>
</tr>
<tr>
<td>WM005</td>
<td>Incompatible wastes are not collected in the same container.</td>
</tr>
<tr>
<td>WM006</td>
<td>Waste containers are in good condition and are closed except when adding or removing waste.</td>
</tr>
<tr>
<td>WM008</td>
<td>If waste must be stored on the floor, secondary containment is used.</td>
</tr>
<tr>
<td>WM009</td>
<td>The appropriate headspace is left in the waste container (1.5&quot; - 3&quot;).</td>
</tr>
<tr>
<td>WM010</td>
<td>The waste containers are free of contamination (clean and do not contain materials not listed on label).</td>
</tr>
<tr>
<td>WM011</td>
<td>Used oil is labeled as “Used Oil”.</td>
</tr>
</tbody>
</table>

### PPE

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
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<tbody>
<tr>
<td>PP001</td>
<td>Appropriate personal protective equipment (PPE) is provided to lab workers.</td>
</tr>
<tr>
<td>PP002</td>
<td>Appropriate dress is worn in the lab. Lab coat and gloves are worn when working in the lab with biological, chemical, or radioactive materials or when conducting work that involves other hazards; eye protection is worn per the PPE Hazard Assessment Tool (PPE HAT) requirements. Defective PPE is discarded, not worn. Lab coats, gloves and other PPE are removed prior to leaving the lab.</td>
</tr>
</tbody>
</table>
| PP003 | The lab PPE Hazard Assessment Tool (PPE HAT) is complete, including:  
- Initial certification/signatures by PI or designee for hazard assessment  
- **ANNUAL REVIEW OF PPE HAT BY PI OR DESIGNEE (DATE/SIGNATURE)**  
- **ANNUAL PPE HAT TRAINING WITH STAFF (DATE/SIGNATURES)**  
Contact Rick Byrum at 335-9379 with questions. |
Does anyone in the lab wear a mask or respirator?
If “Yes”, is it voluntary or required?

Informational only: If “Yes”, list type (manufacturer, model # found on mask)

If “Yes” above, does the lab have a documented RESPIRATOR USE EVALUATION by EHS (or other expert) maintained on file for the respirator-use task? If not, a respirator use evaluation request may be submitted to EHS. Your Safety Advisor will assist you with this request.

Does the lab maintain a CURRENT LIST OF USERS allowed to wear the respirator/mask for each approved use? Contact Justin Newnum at 335-9554 with questions.

Are respirators stored in an appropriate manner? Voluntary dust masks are excluded from storage requirements but must be thrown out if damaged or dirty.

Chemical Management

CM001 Chemical containers, including beakers and flasks, are in good condition and labeled with the chemical name (best practice labeling includes chemical name and hazards). Labels on incoming chemicals are not removed or defaced.

CM002 Chemicals are stored segregated by compatible storage group.

CM003 Chemicals are stored to prevent spills; liquids are not stored above eye level on open shelving. Open shelving should have lips and/or secondary containment is used.

CM004 Peroxide-forming chemicals (such as ethyl ether, tetrahydrofuran, or dioxane) are dated when opened and tested or disposed of before the expiration date.

CM005 Quantities of flammable and combustible chemicals greater than 10 gal. (40 L) are stored in a flammable storage cabinet (ideally as little as possible outside the flammable cabinet).

CM006 Cylinders, including small cylinders/lecture bottles, are labeled with the chemical name of the contents, stored by compatibility, and stored away from heat sources. Flammable and explosive gas cylinders are not located next to any exit.

CM007 Large cylinders are firmly secured to a solid support and those without regulators have caps in place. Small cylinders are carefully stored to prevent damage to valves.

CM008 Cylinders containing acutely toxic gases are stored in continuously ventilated cabinets [OSHA GHS signal word “Danger” on label, NFPA health rating = 4 or equivalent].

CM009 Precautions to prevent spills such as bottle carriers and carts with side protection are available and are used when transporting chemicals outside the lab. Handcarts are used to transport gases.

Recombinant DNA Information

RD001 Is work with rDNA performed in this laboratory/by this PI? Such as, but not limited to, cloning, transfections, transformations, transductions, and the creation of transgenics. If yes, does the PI have an active rDNA protocol approved by the IBC or is a co-investigator on an active rDNA protocol?

Contact ehs-rdna@uiowa.edu with questions.

NIH Guidelines for Research with Recombinant DNA and Synthetic Nucleic Acid Molecules
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| **RD002** | Is the approved protocol up-to-date with the appropriate staff, locations, and agents?  
If No, the PI or assigned proxy must submit an amendment request through the eIBC protocol management system [eibc.research.uiowa.edu](http://eibc.research.uiowa.edu).  
Informational only: Is exempt rDNA work carried out?  
Informational only: If yes, is the exempt work registered with the IBC?  
NIH Guidelines for Research with Recombinant DNA and Synthetic Nucleic Acid Molecules  |
| **BA001** | The biological agent inventory, provided by EHS, was reviewed by the laboratory and is current (in use as well as those in storage)?  
(Genetically altered agents do not need to be listed separately unless the pathogenicity or transmissibility has been increased above those of the parental agent.)  
Institutional Biosafety Committee  |
| **BA002** | Are all staff members aware of the potential health effects of all biological agents/organisms worked with in the laboratory?  
How is staff informed of the health effects?  
BMBL Section III  |
| **BA004** | A COPY OF THE USDA OR CDC PERMIT(S) (paper or electronic) has been provided to EHS staff.  
BMBL Section III  |
| **BA003** | Does the lab possess any of the following: abrin, botulinum neurotoxins, conotoxins, diacetoxyscirpenol, ricin, saxitoxin, Staph. Enterotoxins, T-2 toxin, tetrodotoxin?  
If yes,  
• List all Select Agent Toxins in the lab:  
• Has the lab transferred any of the listed toxins (in exempt amounts)?  
• Does the lab have a WRITTEN SOP in place for each toxin possessed?  
• Is the toxin(s) properly secured, i.e. locked freezer or lock-box?  
• Is the amount in the inventory accurate?  
• A COPY OF THE SIGNED CURRENT INVENTORY is provided.  
Amount in inventory:  
Federal Select Agent Program  |
| **BP001** | Does work in this laboratory involve human blood, tissue, human cell lines or other potentially infectious material?  
If yes, please specify:  
If yes, laboratory staff has access to the lab /department’s Exposure Control Plan (ECP)?  
Name of Exposure Control Officer for Dept./Lab:  
Date of last update:  
Location of ECP (including electronic if available):  
29 CFR 1910.1030  |
| **BP002** | Does work in this laboratory involve human embryonic stem cells (ESC) or human induced pluripotent stem cells (iPSC)?  
If yes, please specify:  
NIH Guidelines for Human Stem Cell Research  |
| **BP003** | Are universal precautions practiced, as the BBP poster demonstrates?  
29 CFR 1910.1030 (d)  |
| **BP004** | Have all At Risk paid employees completed a Hepatitis B vaccine survey?  
29 CFR 1910.1030 (f)  |
| **WP001** | Are biohazard signs or labels on doors and equipment that contain biological agents?  
BMBL Section IV  |
| **WP002** | An appropriate disinfectant is used to decontaminate surfaces at the end of the day or after spills.  
BMBL Section IV  |
| **WP003** | An appropriate method of decontamination is used on biological cultures before disposal.  
University of Iowa Biohazardous Waste Guidelines  |
| **WP010** | Informational only: Have there been any injuries in the lab within the last year?  |
| **WP005** | Have all staff been informed that all injuries and accidents must be reported to the PI and an Iowa First Report of Injury form completed?  
29 CFR 1910.38  |
| **WP006** | Is a biological safety cabinet used whenever there is a potential for splashes or the creation of aerosols?  
Contact bio-cabinet@uiowa.edu with questions.  
BMBL Section IV  |
| **WP009** | Does a lab have an inactive/expired BSC?  
If yes, are there signs the BSC is still being used?  
Is an “Inactive” sticker present?  
BMBL Section IV  |
| **WP007** | Do all laboratory staff members wash hands after removing gloves?  |
### Do you ship any biological material or use dry ice in your shipments?

If yes, contact Nyree Mortensen for training materials/questions, 353-5679.

**WP008**

<table>
<thead>
<tr>
<th>Radioactive Materials (RAM) Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>RM001</td>
</tr>
<tr>
<td>RM002</td>
</tr>
</tbody>
</table>

**Abbreviations:**
- ANSI: American National Standards Institute
- BMBL: Biosafety in Microbiological and Biomedical Laboratories
- CFR: Code of Federal Regulations
- CGA: Compressed Gas Association
- CHP: University of Iowa Chemical Hygiene Plan
- COI: Chemicals of Interest
- DHS: Department of Homeland Security
- ER-RTK: Emergency Response Right-to-Know
- IATA: International Air Transport Association
- NFPA: National Fire Protection Association
- NIH: National Institutes of Health

**Training:**

**TR001** Complete a **LAB TRAINING NEEDS ASSESSMENT** (prior to review meeting) that includes a list of all lab personnel and a simple assessment of the types of work each person does in the lab. Send this Assessment to your Safety Advisor prior to the review meeting. EHS will use this information to enter lab personnel into their lab inspection software program and assign required ICON training courses for each person. The Safety Advisor will then produce a report for the lab identifying lab personnel missing required training, if any. This process will take the place of providing training documentation for employee ICON courses.

| TR001 | Provide records of all **SITE-SPECIFIC TRAINING** completed since the last annual EHS review. |

**Prepare any lab questions or concerns.** Questions can be sent to the Safety Advisor before the review meeting.