Ferris State University Academic Affairs Laboratory Safety
Working Alone

Is there an academic reason for working alone?

Yes

Has a current Working Alone Hazard Worksheet been conducted for the lab by all Professors involved with this approval?

No

Conduct

Yes

Has the current Laboratory Safety Working Alone Protocol Worksheet been completed by all Professors and students involved?

No

Conduct

Yes

Has a Workplace Hazard Assessment for Laboratory Personal Protective Equipment Worksheet been completed by all Professors associated with this approval?

No

Conduct

Yes

Will the working alone occur in more than one location on campus?

No

Chair will approve or disapprove access.

Yes

Deans for all areas should approve this work.

No

If Dean's approval is not obtained, make corrections.

Yes

Continue to next page
Individual working alone must receive identified training.

Notify Public Safety of the approved Working Alone assignment/research.

Develop the Emergency Procedure.

Posting the Documents.

Current Working Alone Hazard worksheet: original with sponsor, copy with student.

After Hours Access Authority must be kept with a person with a valid school ID. Send a copy of the ID to DPS.

Emergency Procedure and door sign: post when work begins and remove at the end of each session. Send a copy to DPS.

Within Laboratory, keep lab notebook and the following documents: Laboratory Specific Working Alone Protocol approval and Workplace Hazard Assessment for Laboratory Personal Protective Equipment.
It is Ferris State University policy that faculty and supervisors assess their work areas and take preventative measures to eliminate or minimize risks to individuals working alone. Working Alone means an isolated individual working with an immediately hazardous material, equipment, or in an area that, if safety procedures fail, could reasonably result in incapacitation and serious life threatening injury for which immediate first aid assistance is not available.

Use this document along with the Working Alone flowchart to assist in determining whether a Working Alone situation exists.

<table>
<thead>
<tr>
<th>Area of Concern</th>
<th>Hazard Addressed</th>
</tr>
</thead>
<tbody>
<tr>
<td>Answer each of the questions with a &quot;Yes&quot;, &quot;No&quot;, or &quot;Not Applicable&quot; to assist in determining the Working Alone status of the area/activity.</td>
<td>Yes</td>
</tr>
</tbody>
</table>

### Preparation

1. Does the area have a current Workplace Hazard Assessment (WHA) in place?  
2. Have students been briefed on the WHA and have appropriate safety training per Academic Affairs Laboratory Safety Training Checklist?  
3. Are there nearby means of emergency contact? (Phone, fire alarm, etc.)

### Environment

4. Are there other students/personnel nearby? (Within sight and/or hearing distance.)  
5. Is this an easily accessible (non-restricted) area? (No locked doors.)  
6. Is this a remote location?

Consult with Academic Affairs Laboratory Safety for any “Yes” answers below.

### Activities (Supervisor must answer each question for time that a student will be working in isolation)

7. Will student work with compressed gas, pressurized, or vacuum systems under high vacuum?  
8. Will student work with hazardous chemicals? (Corrosive, reactive, or toxic.)  
9. Will student work with flammable materials or potential ignition sources?  
10. Will student work on or near thermal hazards? (Hot or cold.)  
11. Will student be involved in installation, fabrication, or assembly work?  
12. Will student be potentially exposed to electrical hazards? (>50 volts.)  
13. Will student be involved in excavation work or concrete wall penetration?  
14. Will student be involved in material handling? (E.g., forklifts, cranes, etc.)  
15. Will student be exposed to operational hazards?  
16. Will student need to wear Personal Protective Equipment? (PPE.)  
17. Will student work with or near running hazardous machinery? (Saws, lathes, mechanical equipment.)  
18. Will student be in an area with possible oxygen deficiency hazards or need respiratory protection?  
19. Will student be exposed to potentially hazardous stored energy sources?  
20. Will student be in adverse working environments? (E.g., heights, noise, confined spaces, ventilation, low lighting, clutter, etc.)  
21. Will student be exposed to any other workplace hazards?

<table>
<thead>
<tr>
<th>Supervisor/ designee completing worksheet</th>
<th>Date</th>
<th>Safety Monitor Required?</th>
<th>Reason</th>
</tr>
</thead>
</table>
Ferris State University Academic Affairs Laboratory Safety
Working Alone

Laboratory Safety Working Alone Protocol Approval*

Lab Worker: __________________________________________________________
Lab Location: ___________________________________ Date: ______________

- This procedure does not involve any highly hazardous materials or processes. “Working Alone” is allowed.
- This procedure involves work with highly hazardous materials or processes. Check the appropriate category:

**Chemical Hazards:** Working with any materials in these hazard classes requires a "buddy system"

- **Pyrophoric Chemicals** (ex.: Lithium Reagents: RLi (R=alkyls, aryls, vinyls); Metal carbonyls: Lithium carbonyl, Nickel tetracarbonyl; Metal hydrides: Potassium hydride, Sodium hydride, Lithium aluminum hydride; Nonmetal hydrides: Arsine, Boranes, Diethylarsine, Diethylphosphine, Germane, Phosphine, Phenylphosphine, Silane; Elements: Phosphorus, Cesium, Lithium, Potassium, Sodium, Sodium Potassium Alloy (NaK)), or listed as OSHA hazard Class Pyrophoric.

- **Water Reactive Chemicals** (ex.: Aluminum Carbide, Calcium, Calcium carbide, Litium aluminum hydride, Potassium, Sodium), or listed as OSHA Hazard Class “substances which in contact with water, emit flammable gases”

- **Potentially Explosive Chemicals** (ex.: Azide metal (M-N3), Nitrate (-ONO2), Nitro (-NO2), Nitrite (-ONO), Peroxide (-O-O-), Ammonium nitrate, Ammonium perchlorate, Benzoyl peroxide, Dinitrophenol, Nitrocellulose, Piric acid (trinitrophenol), Urea nitrate), or listed as OSHA Hazard Class Explosive or Self-reactive.

- **Explosive Salts** (ex.: Perchlorate salts (ClO4-)), or listed as OSHA Hazard Class Explosive or Self-reactive.

- **Acutely Toxic Chemicals** (ex.: Carbon Monoxide, Cyanide Salts, Digoxin, 2,4-Dinitrophenol, Methyl mercaptan, Nitric oxide, Phosgene, Potassium cyanide, Sodium azide, Sodium cyanide, any chemical with LD50 (oral)< 50 mg/kg), or listed as OSHA Hazard Class Acutely Toxic Category 1 or 2.

- **Peroxide Forming Chemicals** (ex.: Isopropyl Ether, Methyl Isobutyl Ketone, Tetrahydrofuran, Acrylonitrile, Methyl Methacrylate, Styrene), or listed as OSHA Hazard Class Peroxide.

- **Strong Corrosives** (ex.: Hydrochloric acid, Hydrofluoric acid, Nitric acid, Perchloric acid, Phenol, Sulfuric acid, Potassium hydroxide, Sodium hydroxide), or listed as OSHA Hazard Class Corrosive.

- **Strong Oxidizing Agents** (ex.: Ammonium perchlorate, Ammonium permanganate, Bromine, Calcium chloride, Calcium hypochlorite, Chromic acid, Hydrogen peroxide, Oxygen), or listed as OSHA Hazard Class Oxidizer.

- **Strong Reducing Agents** (ex.: Lithium, Lithium Aluminum hydride, Magnesium, Potassium, Sodium, Sodium borohydride).

- **Regulated Carcinogens** (ex.: Acrylonitrile, Benzene, Formaldehyde, Gallium Arsenide, Inorganic Arsenic, Paraformaldehyde), or listed as OSHA Hazard Class Carcinogen.

- **Biological Hazards:** Working with any materials in this hazard class requires a “buddy system”

- **Process Hazards:** Working with any materials in these hazard classes requires a “buddy system”

- **Use of a Bunsen burner**

- **Health and Safety Requirements:**
  - Can the person rescue themselves in case of an emergency? Yes No
  - Identify the “buddy” and confirm they are available before beginning to work.
  - The Laboratory Emergency Plan is posted near the lab phone. The names and phone numbers for the lab and building contacts are up to date.

**Principle Investigator Approval:**

I have reviewed the Hazard Assessment for this procedure, the tasks and hazards involved in the work, the consequences resulting for a worst-case scenario, the possibility of accident or incident that would prevent the laboratory personnel from calling for help, the laboratory personnel's training and experience, and the time the work is to be conducted (during normal business hours versus at night or on weekends/holidays). This lab worker has permission to work alone on this procedure.

PI Signature: ___________________________ Date: ______________

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**Notes and Instructions:**
- Ensure all proper safety equipment is used.
- Follow all laboratory safety protocols strictly.
- Regularly review and update the Laboratory Emergency Plan.
- Keep all emergency contacts updated and available.

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**References:**
- OSHA Hazard Class Definitions.
- HazCom 2012 requirements.
- Laboratory Safety Protocols.

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**Additional Comments:**
- Detail any additional safety precautions or considerations.
- Include any special training or certifications required.

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**Appendix:**
- Detailed procedure and instructions.
- Emergency contact list.

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**Contact Information:**
- Laboratory Safety Officer: [Name]
- Phone: [Number]
- Email: [Email]

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**Date of Approval:** September 2015

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**Author:** [Name]
Emergency Procedure
Actions: (These should be determined by both the person undertaking the task and their responsible manager)
## Workplace Hazard Assessment for Laboratory Personal Protective Equipment

<table>
<thead>
<tr>
<th>Principal Investigator:</th>
<th>Department:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</table>

<table>
<thead>
<tr>
<th>Building:</th>
<th>Lab Room Number:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Lab Functions/Activities:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Type of Hazard Present</th>
<th>Describe Hazards</th>
<th>Personal Protective Equipment (check all applicable and describe specific PPE required e.g., goggles, face shields, nitrile gloves, etc.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impact</td>
<td>Describe Hazards</td>
<td>Eye/Face, Hand, Head, Clothing, Foot/Leg</td>
</tr>
<tr>
<td>(e.g., flying objects, sand, dirt, dust, particulate, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do hazards prohibit working alone?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Cuts/Penetration</td>
<td>Describe Hazards</td>
<td>Eye/Face, Hand, Head, Clothing, Foot/Leg</td>
</tr>
<tr>
<td>(e.g., cuts, punctures, lacerations, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do hazards prohibit working alone?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Pinch/Crush/Roll Over</td>
<td>Describe Hazards</td>
<td>Eye/Face, Hand, Head, Clothing, Foot/Leg</td>
</tr>
<tr>
<td>(e.g., moving machine parts, falling/rolling heavy equipment, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do hazards prohibit working alone?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Chemical</td>
<td>Describe Hazards</td>
<td>Eye/Face, Hand, Head, Clothing, Foot/Leg</td>
</tr>
<tr>
<td>(e.g., pouring, mixing, splash hazards, washing/cleaning, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do hazards prohibit working alone?</td>
<td>Y</td>
<td>N</td>
</tr>
<tr>
<td>Biological</td>
<td>Describe Hazards</td>
<td>Eye/Face, Hand, Head, Clothing, Foot/Leg</td>
</tr>
<tr>
<td>(e.g., infectious materials, human or animal tissue, blood or bodily fluids, biological toxins, etc.)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do hazards prohibit working alone?</td>
<td>Y</td>
<td>N</td>
</tr>
</tbody>
</table>
Workplace Hazard Assessment for Laboratory Personal Protective Equipment (continued)

<table>
<thead>
<tr>
<th>Hazard Type</th>
<th>Required Protection</th>
<th>Do hazards prohibit working alone?</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Thermal (Hot/Cold)</td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>(e.g., torching, hot sparks, working with cryogenic gases, etc.)</td>
<td></td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Electrical</td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>(e.g., exposed electrical conductors, energized parts, electrical switch, gear, etc.)</td>
<td></td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Harmful Dust/Mites/Fumes/Vapors</td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>(e.g., grinding, drilling, sanding, welding, soldering, working with silica dust, animal bedding, allergens, nanomaterials, etc.)</td>
<td></td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Light (Optical) Radiation</td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>(e.g., laser, UV light, welding, etc.)</td>
<td></td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Ionizing Radiation</td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>(e.g., radioisotopes, X-rays, etc.)</td>
<td></td>
<td>N</td>
<td></td>
</tr>
<tr>
<td>Noise</td>
<td></td>
<td>Y</td>
<td></td>
</tr>
<tr>
<td>(e.g., continuous noise, impact noise, etc.)</td>
<td></td>
<td>N</td>
<td></td>
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<tr>
<td>Hearing (Contact EH&amp;S) for direction</td>
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</tbody>
</table>

Assignment Completed By: 
Title: 
Signature: 
Date: 
Unit: 
Email: 
Phone: 

Effective Date: September 2015
Issued Date: September 2015
Author: AH
Permission to use Equipment
This is to certify that ________________________  ________________________
has permission to access   Building: ________________________________
                               Workspaces: ________________________________
For the period   Commencement Date: ____ / ____ / _____
                               Completion Date:   ____ / ____ / _____
        ______ After hours between 5:30 pm to 8:00 am weekdays
        ______ Weekends

Permission ceases to apply after completion date

Permission to use Equipment
Authorization of equipment to be used After Hours will depend upon the Risk Rating of the equipment and level of competency required to operate the equipment.

This authority, granted by the PI/Professor who oversees the equipment to be used after hours, permits the user to operate the following equipment After Hours

Equipment      Risk Rating
________________________  Low    Medium    High
________________________  Low    Medium    High
________________________  Low    Medium    High

Acknowledgment of Authorization

Students and Staff, working after hours, should be reminded that they should carry with them their staff or student identification card, or else this authority will have no effect. Any authorized person should contact DPS, at extension 5000, to organize removal of any person who is not authorized to enter the premises.

I have read and understand all the above conditions.

Signature: ____________________  Student/Staff # _____________  Date: ____ / ____ / ____

Authorizing Officer (Academic Supervisor)

Name: ______________________  Signature: ______________________  Date: ____ / ____ / ____