



Title:	Working Alone in Research Labs		
Program:	Laboratory Safety	Effective Date:	April 5, 2013

- Purpose:** This policy provides safety requirements for working alone in the research laboratory. Working alone, especially after hours, can be unsafe and should be avoided whenever possible. When it cannot be avoided, use other available means to protect lab workers in the event of an emergency situation.
- Scope:** This policy applies to all work with hazardous materials (chemical, biological or radiological material) or hazardous equipment in research laboratories at Stony Brook University.
- Policy:**

High School Students: Never permitted to work alone in a research lab, even with non-hazardous materials. They must always have a mentor/supervisor present. The mentor/supervisor must be an employee of Stony Brook University. This person must have received all EH&S required safety training pertinent to the work that the supervised students will be performing. The Supervisor must understand the hazards and risks of the student’s project and reviewed the written SOP/safety protocol. Review the Minors in Research Labs policy for additional information, including the requirements for “Qualified Supervisor”:
<http://www.stonybrook.edu/ehs/lab/minors.shtml>

Undergraduate Students: Never permitted to work alone with hazardous materials or equipment. Someone else with EH&S required safety training must be in the lab or adjacent to the lab and be able to check on their safety.

Graduate Students, Postdoctoral Fellows, Research Scientists, Technicians and Principal Investigators: These are considered full time laboratory workers, and laboratory training is integral to their professional training. They have completed all EH&S training related to their laboratory work. They are permitted to work alone in a research laboratory after approval by the PI and following the lab’s safety protocol for working alone.

Clinical Students, including Medical Students, Residents and Clinical Fellows: Since their laboratory training is only a portion of their professional training and work intermittently in a research lab and have minimal laboratory experience, are not permitted to work alone in a research lab with hazardous materials. They must use the “buddy system”. Lab workers in this category, who have previous laboratory experience or where the non-clinical education is the primary laboratory training and experience, are permitted to work alone in a research laboratory after approval by the PI and following the lab’s safety protocol for working alone.

- Responsibilities:**
 - Principal Investigator (PI): approve laboratory staff to conduct work with hazardous materials alone in the research laboratory.
 - Laboratory Workers: Obtain PI approval before working alone in the research laboratory.
- References:**
 - EH&S Policy *Minors in Research Laboratories* (<http://www.stonybrook.edu/ehs/lab/minors.shtml>)
 - EH&S Policy *Machine Shop Safety* (<http://www.stonybrook.edu/ehs/policy/campus.shtml>)

6. Definitions:

- 6.1. Buddy System: A “buddy system” establishes regular, routine checks on personnel working alone, such as every 15 – 30 minutes, to ensure no accidents have occurred. This could be accomplished by physically walking to the room where the lab worker is located. A system of visual checks ensures there are no problems and/or determines if help is needed.
- 6.2. Working Alone: A worker is considered as "working alone" if the individual is working by his/herself such that assistance is not readily available should some injury, illness or emergency arise. Alone is interpreted as being out of visual contact with another person for more than a few minutes. It includes working in physical isolation, e.g. as the sole occupant of a laboratory or during a site sampling activity, where no other person is in the vicinity, i.e. within a short direct range or earshot. It is possible for a worker to be on the same floor of a building or even in the same general area as others, yet be working alone. It can occur during normal working hours as well as in the evening, at night or during weekends.
- 6.3. Hazardous Materials and Equipment: Hazardous materials includes, but is not limited to, chemicals that are pyrophoric, water reactive, potentially explosive, acutely toxic, peroxide forming, strong corrosives, strong oxidizing agents, strong reducing agents and regulated carcinogens; biological material that is listed as a “select agent”; and radiological material. Hazardous equipment includes, but is not limited to, equipment found in machine shops (lathes, drill presses) and high pressure/vacuum equipment.

7. Procedures:

Working Alone

- 7.1. Working alone, especially after hours, should be avoided whenever possible.
- 7.2. Conduct a Hazard Assessment of the work being performed and the risks and emergency requirements for working alone or after hours.
- 7.3. Prepare a written safety protocol identifying the hazards, risks and the methods for controlling the risks. (<http://www.stonybrook.edu/ehs/lab/general-lab-safety/hazard-reviews.shtml>)
- 7.4. Working alone and working after normal building hours requires supervisor/PI approval.
- 7.5. PI approval for working alone or after normal building hours must consider:
 - Tasks and hazards involved in the work.
 - Consequences resulting from a worst-case scenario.
 - The possibility of an accident or incident that would prevent the laboratory personnel from calling for help.
 - The laboratory personnel’s training and experience.
 - Time the work is to be conducted (during normal business hours versus at night or on weekends/holidays). See Appendix for *Laboratory Specific Working Alone Protocol Approval form*.
- 7.6. Have a cell phone on person with University Policy Department phone number programmed in (631-632-3333). If no cell phone is available or there is no cell service, know where the campus phone is located and have the emergency number posted nearby.
- 7.7. Each lab must develop a safety protocol for working alone (or use the recommended form in this policy). This protocol must clearly state what hazardous materials (chemical, biological and/or radiological), equipment, and/or procedures must not be performed when working alone. Example requirements are:

The policy in this laboratory is:

The following chemicals will not be used while working alone:

- Pyrophoric Chemicals
- Water Reactive Chemicals
- Potentially Explosive Chemicals or Compounds
- Explosive Salts
- Acutely Toxic Chemicals or Gases
- Peroxide Forming Chemicals
- Strong Corrosives

- Strong Oxidizing Agents
- Strong Reducing Agents
- Regulated Carcinogens
- Other chemicals or substances deemed hazardous by PI, Lab Manager or EH&S

Ex: http://dl.dropbox.com/u/6614355/UC_chemical_list.pdf

The following biological material will not be used while working alone:

- Select Agents (ex. Botulinum neurotoxins, Tetrodotoxin, Yersinia pestis)
(<http://www.selectagents.gov/Select%20Agents%20and%20Toxins%20List.html>)

The following procedures will not be conducted with only one person present:

- Use of machine shop equipment or lathes (see Machine Shop Policy <http://www.stonybrook.edu/ehs/lab/general-lab-safety/machine-hazards.shtml>)
- Procedures involving high-pressure equipment [identify specific equipment]
- Transferring large quantities [e.g., 10 liters or more] of hazardous materials
- Handling animals that could cause serious injury
- Other safety considerations for working alone in the laboratory: (list specific lab requirements)

Emergency requirements including, but not limited to:

- The person's ability to self-rescue
- "Check in" with someone (identify person and confirm they are available before beginning work)
- Door has a viewing window or other means of indicating someone is inside
- Use SB Guardian
 - Turns your cell phone into a "personal blue light phone" in your pocket and can function in "Panic Call Mode" or "Precautionary Timer Mode". This application only works where you have cell phone service.
 - A recorded message for those individuals working alone in laboratories should include the following:
 - Name
 - Building name/number, floor number, room/lab number
 - Any highly hazardous processes/chemicals being used

Instructions for accessing SB Guardian:

<http://www.stonybrook.edu/commcms/emergency/guardian.html>

Situations where working alone may occur include:

- Periodic attendance to check laboratory equipment/experiments
- Cleaning and maintenance activities in laboratories
- Working with analytical equipment
- Working in storage areas and temperature-controlled rooms
- Working in offices, libraries and at computer workstations

7.8. A Laboratory Emergency Plan must be posted near the lab phone. The names and phone numbers for the lab and building contacts must be up to date. (<http://www.stonybrook.edu/ehs/lab/general-lab-safety/signs-and-labels.shtml>)

8. Related attachments, forms or documents:

8.1 Policy Summary

8.2 *Laboratory Specific Working Alone Protocol Approval*

Appendix: Policy Summary

See Policy for definitions and descriptions

Summary for Personnel

	HS	UG	Grad	Clinical	PI and Non-Student Worker
No Hazardous Materials	Always supervised when in lab	No restrictions			
Hazardous Materials, Process &/or Equipment		Someone else in the lab	Working alone ok after PI approval	Buddy System	Working alone ok after PI approval

Summary for Supervision

Supervision	Qualified Supervision at all times	Someone present in lab	Buddy System	Working Alone Permitted with PI Approval
Personnel	High School Students	Undergraduate Students	Clinical (Medical Students, Residents, Fellows) [See Section 3 of this Policy for exceptions]	Graduate Students, Postdoctoral Fellows, PhD/Clinical Students, Research Scientists, Technicians
Reason	- No lab experience - Legal requirement for Minors	- Limited lab experience - Limited experience in emergency situations	- Limited lab experience	- Experienced in lab procedures - Familiar with campus emergency procedures

Appendix

Laboratory Specific Working Alone Protocol Approval*

Lab Worker: _____

Lab Location: _____ Date: _____
(include date range for this specific protocol)

- 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 appropriate category:

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

<input type="checkbox"/> 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
<input type="checkbox"/> Water Reactive Chemicals (ex.: Aluminum Carbide, Calcium, Calcium carbide, Lithium aluminum hydride, Potassium, Sodium), or listed as OSHA Hazard Class "substances which, in contact with water, emit flammable gases"
<input type="checkbox"/> 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, Picric acid (trinitrophenol), Urea nitrate), or listed as OSHA Hazard Class Explosive or Self-reactive
<input type="checkbox"/> Explosive Salts (ex.: Perchlorate salts (ClO4-)), or listed as OSHA Hazard Class Explosive or Self-reactive
<input type="checkbox"/> 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
<input type="checkbox"/> Peroxide Forming Chemicals (ex.: Isopropyl Ether, Methyl Isobutyl Ketone, Tetrahydrofuran, Acrylonitrile, Methyl Methacrylate, Styrene), or listed as OSHA Hazard Class Peroxide
<input type="checkbox"/> 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
<input type="checkbox"/> Strong Oxidizing Agent (ex.: Ammonium perchlorate, Ammonium permanganate, Bromine, Calcium chlorate, Calcium hypochlorite, Chromic acid, Hydrogen peroxide, Oxygen), or listed as OSHA Hazard Class Oxidizer
<input type="checkbox"/> Strong Reducing Agents (ex.: Lithium, Lithium aluminum hydride, Magnesium, Potassium, Sodium, Sodium borohydride)
<input type="checkbox"/> Regulated Carcinogens (ex.: Acrylonitrile, Benzene, Formaldehyde, Gallium Arsenide, Inorganic Arsenic, Paraformaldehyde), or listed as OSHA Hazard Class Carcinogen
<input type="checkbox"/> Other:

Biological Hazards: Working with any materials in this hazard class requires a "buddy system"

<input type="checkbox"/> Select Agents (ex. Botulinum neurotoxin, Tetrodotoxin, Yersinia pestis) http://www.selectagents.gov/Select%20Agents%20and%20Toxins%20List.html
<input type="checkbox"/> Other:

Process Hazards: Specify source when necessary

<input type="checkbox"/> Use of machine shop or lathes [identify specific equipment]
<input type="checkbox"/> Procedures involving high-pressure equipment [identify specific equipment]
<input type="checkbox"/> Transferring large quantities [e.g., 10 liters or more] of hazardous materials
<input type="checkbox"/> Handling animals that could cause serious injury
<input type="checkbox"/> High voltage, high current
<input type="checkbox"/> Other:

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 work:
SB Guardian activated? A recorded message includes: Name, Building name/number, floor number, room/lab number and any highly hazardous processes/chemicals being used. Instructions for accessing SB Guardian: http://www.stonybrook.edu/commcms/emergency/guardian.html
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.

Principal Investigator Approval:

I have reviewed the Hazard Assessment for this procedure, the tasks and hazards involved in the work, the consequences resulting from a worst-case scenario, the possibility of an 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: _____

**This is a recommended form for labs to use when approving "Working Alone". The PI can change these recommended hazards that would require the Buddy System, unless required by another policy.*