# APPENDIX B: STANDARD OPERATING PROCEDURES

1. Accidents and Spills:

* Eye Contact: Promptly flush eyes with water for a prolonged period (15 minutes) and seek medical attention.
* Ingestion: Follow directions on SDS
* Skin Contact: Promptly flush the affected area with water and remove contaminated clothing. If a symptom persists after washing, seek medical attention. Use safety shower if necessary.
* Clean-Up: Promptly clean up spills, using appropriate protective apparel and equipment and proper disposal.

1. Avoidance of Routine Exposure:

* Use appropriate personal protective equipment.
* Do not smell or taste chemicals except as directed by instructor. Vent apparatus which may discharge toxic chemicals (vacuum pumps, distillation columns, etc.) into local exhaust devices.
* Inspect gloves and test glove boxes before use.

1. Choice of Chemicals: Use only those chemicals for which the quality of the available ventilation system is appropriate.
2. Eating, smoking etc.: Do not eat, smoke, drink, chew gum or apply cosmetics in areas where laboratory chemicals are present; wash hands before conducting these activities.
3. Equipment and Glassware:

* Handle and store laboratory glassware with care to avoid damage. Do not use damaged glassware.
* Use extra care with Dewar flasks and other evacuated glass apparatus; shield or wrap them to contain chemicals and fragments should implosion occur. Use equipment only for its designed purpose.
* Compressed gas tanks: Handle with care. Do not move without protective cap. Secure tank at all times.

1. Exiting: Wash areas of exposed skin well before leaving the laboratory.
2. Horseplay: Avoid practical jokes or other behavior which might startle or distract another worker.
3. Mouth Suction: Do not use mouth suction for pipetting or starting a siphon.
4. Personal Apparel: Confine long hair and loose clothing. Long pants may be required at the discretion of the professor of the lab course. Wear shoes at all times in the laboratory but do not wear sandals or perforated shoes.
5. Personal Protection:

* See Appendix E for eye protection policy.
* Wear appropriate gloves when the potential for contact with toxic materials exists; inspect the gloves before each use, wash them before removal, and replace them periodically.
* Use any other protective and emergency apparel and equipment as appropriate.
* Recommend contact lenses not be used in laboratory.
* Remove laboratory coats immediately on significant contamination.

1. Planning: Seek information and advice about hazards, plan appropriate protective procedures, and plan positioning of equipment before beginning any new operation. This includes reading the Safety Data Sheet for substances to be used.
2. Use of Hood:

* Use the fume hood for operations which might result in release of toxic vapors or dust. As a rule of thumb, use a hood or other local ventilation device when working with any appreciably volatile substances with a PEL (Permissible Exposure Limit) of less than 50 ppm.
* Confirm adequate hood performance before use. Keep materials stored in hoods to a minimum and do not allow them to block vents or air flow.
* Leave the hood on when it is not in active use if toxic substances are stored in it or if it is uncertain whether adequate general laboratory ventilation will be maintained when it is off.

1. Vigilance: Be alert to unsafe conditions and see that they are corrected when detected.
2. Waste Disposal:

* Deposit chemical waste in appropriately labeled receptacles and follow all other waste disposal procedures of the Chemical Hygiene Plan.
* Refer to the *University of Wisconsin Green Bay Hazardous Waste Disposal Guide* for information on correct disposal of hazardous waste.

1. Working Alone: The following policy has been adopted for all persons using NAS and HB facilities:

* **University Employees** (faculty, staff, LTEs, student employees and graduate students): Researchers and laboratory workers are strongly encouraged to prioritize work and research so that work with hazardous chemical, biological, or physical agents occurs only during normal working hours when others are present in the vicinity. After-hours work (on nights and weekends) should be restricted to non-hazardous activities. If hazardous materials must be used at night or on weekends, ensure that at least one other person is within sight and ear-shot to provide help in an emergency. According to UW-Green Bay’s *Building Access Policy*, University employees (faculty, staff, LTEs, student employees and graduate students) working in laboratories outside of building hours (6:00 a.m. to 11:00 p.m.) must have approval by their Academic Dean or their designee and must show university identification to Public Safety upon request.
  + During any after-hours work, it is advisable to use the buddy system or notify another person of your presence in a laboratory.
* **Undergraduate Students**:
  + ***Scheduled Courses***: Students in scheduled courses must be supervised at all times. The instructor will be present in the laboratory or in the vicinity of the laboratory during scheduled laboratory hours. Students may not work outside of class hours for any scheduled course unless specific permission is granted by the faculty person supervising the lab and students will not be doing any manipulations using hazardous chemicals and hazardous conditions do not exist.
  + ***After-hours Laboratory Access***:
    - Students who work in laboratories between the hours of 6:00 a.m. - 7:30 a.m. and/or 6:00 p.m. – 11:00 p.m. must either be supervised or have specific faculty permission and must acquire a ‘Blue Pass’ from their Department Chair or designee and show it to Public Safety upon request consistent with [UWGB OP-15-17-1](http://www.uwgb.edu/UWGBCMS/media/policies/files/Building-Access-OP-15-17-1.pdf?ext=.pdf).
      * Two or more students may perform unsupervised work together if they all have Blue Passes and they are not performing hazardous work.
      * In order for students to work alone after hours, the Department must:
        + Conduct an assessment and eliminate or control the dangers of working alone. These guidelines serve as the assessment:

[Working alone safety assessment for students in the lab sciences](file:///\\fpsa\safetyrisk$\SAFETY%20-%20JILL\Safety%20Programs\Chemical%20Hygiene%20Plan\Lab%20sciences%20working%20alone%20assessment.docx)

* + - * + Provide students with specific written standard operating procedures

[Standard Operating Procedures for students working alone in UW – Green Bay Laboratories](file:///\\fpsa\safetyrisk$\SAFETY%20-%20JILL\Safety%20Programs\Chemical%20Hygiene%20Plan\SOPs%20for%20LS%20students%20working%20alone.docx)

* + - No students may be present in any campus buildings between the hours of 11 p.m. and 6 a.m. unless they are supervised and have specific permission from a faculty member.
* In research laboratories, the research supervisor or designated faculty supervisor will be present in the laboratory or available in the department for consultation or supervision as needed. The degree of supervision for research students in various circumstances requires the judgment of the faculty supervisor and will vary with the risks involved. Projects such as data analysis, computational projects, or certain types of spectroscopic measurements (as examples) do not require supervision. However, under no circumstances are student researchers (both graduate and undergraduate) allowed to conduct potentially hazardous procedures when the faculty supervisor or designated substitute is not present in the vicinity. Student researchers (both graduate and undergraduate students) may never work alone if working with hazardous chemicals or if hazardous conditions exist. Ultimately it is the responsibility of the Principal Investigator to ensure safe supervision of undergraduate and graduate researchers.

**STANDARD OPERATING PROCEDURES FOR STUDENTS**

1. No eating, drinking or smoking is permitted in any laboratory.
2. Eye protection must be worn when required by the lab instructor. Contact lenses are not advisable, even under splash goggles.
3. Wear sensible clothing. Loose fitting clothing and open sandals or open footwear should not be worn. Long pants may be required at the discretion of the professor of the lab course.
4. Long hair must be confined.
5. No unauthorized experimentation is allowed. Do not change written laboratory procedures without permission of the instructor.
6. Students may not work in the laboratory without an instructor present in the laboratory or in the vicinity of the laboratory. (Exceptions may be made depending on the course.)
7. Students are not allowed to work in instructional laboratories outside of regularly scheduled hours without specific permission of instructor.
8. Students should know locations of all available safety equipment. This includes eye wash stations, safety showers, fire extinguishers and first aid supplies.
9. Pipetting by mouth is not allowed. Never place anything in the mouth except as directed by instructor while in the laboratory. Smell chemicals only by wafting a small amount of vapor toward the nose with the hand.
10. Personal protective equipment besides eye protection (eye protection should be worn at all times) should be used at the direction of the laboratory instructor. This equipment includes gloves when working with certain corrosives and organic solvents and laboratory aprons.
11. Keep lab bench clear of book bags and outer clothing. These should be placed in provided areas. Students are responsible for maintaining a safe and clean work area.
12. Laboratory fume hoods should be used for all operations which have the potential to release fumes, gases or volatile solvent vapors in excess of recommended exposure levels. Follow written laboratory procedures and the laboratory instructor's directions. Notify the instructor if you think the fume hood is not functioning properly.
13. Read lab procedures before entering the laboratory. Do not proceed with an experiment if you do not understand the procedure. All chemical names and identities should be carefully double-checked prior to any use. Check labeling before using a chemical so that potential hazards are known.
14. Report all injuries, no matter how minor, to the laboratory instructor. The instructor will give guidance on any appropriate treatment which may be needed or call Public Safety if necessary.
15. Proper disposal of laboratory waste is essential. Do not dispose of any chemical down sewer/sink without approval from the instructor. Use appropriate waste containers when provided.
16. Clean up spills promptly. If you should break a mercury thermometer, notify the instructor so that the mercury is promptly recovered. If you have questions on spill clean-up, ask your instructor.
17. Only students registered for the class are allowed into the laboratory.
18. Students should clean work area and wash hands thoroughly before leaving the laboratory.

Detach and return this bottom portion to your instructor.

I have read and I understand the above standard operating procedures. I understand that it is my responsibility to follow the above procedures and I agree to follow these procedures.

Date: Signature: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_