

**CHEMICAL HYGIENE PROGRAM
PART II**

**CHEMICAL HYGIENE PLAN
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PART II UAMS CHEMICAL HYGIENE PLAN

This plan shall be readily available to laboratory workers and auditors. It represents minimum standards for UAMS laboratories.

1. General Laboratory Safety Procedures (Quick Reference)

Laboratories contain many potential hazards for the untrained and uninformed individual. The hazards may include toxic materials, infectious material, radioactive material, hot surface, electrical current, glassware, systems under pressure, spinning devices, extremely cold items or a combination of these. With proper training and an understanding of practices to reduce exposure to these materials, employees can perform assigned tasks with minimal health risk. While certain laboratory protocols require extensive safety precaution, most can be performed safely by observing these general procedures.

a. Accidents and spills:

For **medical emergency** assistance dial 8-688-3333. Speak clearly and state: “333 Team” and “building/room number”. Repeat message. Then dial “0” and give the operator the same information.

For **chemical spills** requiring assistance weekdays from 7:30 a.m. to 4:00 p.m. contact OH&S at 686-5536. Nights, weekends, and holidays contact Central Control at 686-6424.

For **ingestion of chemical** emergency contact the Poison Control Center at 661-6161.

- b. Hand washing: Thoroughly wash your hands with soap and water to prevent ingestion or contact with harmful materials before handling food or drink.
- c. Personal protection: Use proper personal protective equipment such as gloves safety glasses, goggles, lab coat, etc.
- d. Fire safety: In case of fire dial 686-5333. Know the location of the nearest fire extinguisher and fire alarm pull station.
- e. Sharp objects: Place broken glass or other sharp objects in puncture resistant containers.

- f. Fume hood: Use a laboratory fume hood while working with volatile compounds.
- g. Chemical storage: Store chemicals properly and minimize quantities handled.
- h. Chemical waste disposal: Dispose of chemicals properly. Contact OH&S for assistance if in doubt (686-5536).
- i. Biohazardous waste disposal: Place in red bag, or yellow bag if chemotherapy waste is present, and/or appropriate sharps container. Clinical buildings will have their waste picked up by the biohazard team (page 688-2148). Waste from campus buildings will be picked up by campus housekeeping (686-5840).
- j. Smoking, eating, etc.: Smoking, eating, drinking, cosmetic application, etc. is prohibited in the laboratory.
- k. Children in laboratories: Prudent clinical and laboratory practices prohibit the presence of young children in areas that have a potential exposure to radioactive materials, toxic or hazardous chemicals, infectious agents or where children are exposed to possible injury or accident.
- l. Pregnancy: Pregnant laboratory workers and those intending to become pregnant should review Material Safety Data Sheets for special precautions before working with substances that are suspected to be reproductive toxins.
- m. Mouth pipetting: Mouth pipetting is strictly prohibited. Use mechanical device.

2. Personal Hygiene

- a. If a hazardous chemical has contacted the skin the area should be washed promptly.
- b. Avoid inhalation of chemicals; do not "sniff" to test chemicals.
- c. Do not use mouth suction to pipet anything; use mechanical suction devices.
- d. Wash well with soap and water if chemical contact is suspected.
- e. Smoking, eating, drinking, application of cosmetics, etc. is not permitted inside laboratory areas where laboratory chemicals, radioactive materials or biological materials are used or stored.

3. Protective Clothing and Equipment

- a. Eye protection worn when working with chemicals should meet the requirements of the American National Standards Institute (ANSI) Z87.1. Chemical safety glasses should be worn whenever there is a potential for chemical contact such as a liquid splash. A face shield may be necessary for some procedures and should be worn. Employees are encouraged to inform their supervisors when contact lenses are worn, and medical personnel treating the individual in case of chemical contact, so that proper eye irrigation can be provided. For general laboratory work without the potential for chemical contact or splash, the routine use of goggles or safety glasses with side shields should be considered.
- b. When working with corrosive liquids, gloves made of a material known to be resistant to permeation and degradation from the corrosive chemical should be worn. For example, a neoprene glove provides excellent resistance against 10% nitric acid while an industrial latex glove provides only good resistance. With 70% nitric acid the same neoprene glove provides only good resistance and the use of an industrial latex glove is not recommended by the manufacturer. The Occupational Health and Safety Office can provide additional information on the chemical resistance afforded by different gloves and protective clothing items.
- c. A laboratory coat should be worn when conducting laboratory activities when contamination is possible in order to reduce the potential for chemical contact and to protect street clothing. When significant potential for liquid contact exists the use of safety goggles, impervious gloves and an impervious apron over the laboratory coat should be considered.
- d. When working with allergenic, sensitizing, or toxic chemicals, gloves should be worn that are resistant to permeation by the chemical and inspected by the user for the absence of pin holes.
- e. Whenever exposure by inhalation is likely to exceed the airborne limits described in the Material Safety Data Sheet (MSDS) a chemical hood should be used; if this is not possible consult with your supervisor and/or the Occupational Health and Safety Office before doing any such work.
- f. Carefully inspect all protective equipment before using. **Do not use defective protective equipment.** Keep protective equipment clean.
- g. Laboratory users should ensure that they have in their laboratory an eyewash unit connected to the potable water supply. This eyewash unit should be operated periodically (at least quarterly) by the user to verify proper operation. Keep electrical wires/equipment away from the area of the eyewash.

- h. Laboratory users should know the location of the nearest emergency shower.

4. Housekeeping

- a. Access to emergency equipment, showers, eyewashes, and exits should never be blocked by anything, not even a temporarily parked chemical, housekeeping or maintenance type cart and/or construction material.
- b. Original labels on containers of chemicals must be protected so that the identity of the contents and the hazards those contents present is known. When chemicals are transferred from the original container to a secondary container, a new label should be attached that shows the chemical name(s). In any event, at the end of each workday, the contents of all unlabeled containers should be labeled or are to be considered wastes and placed into a properly labeled waste container.
- c. Laboratory personnel should keep all work areas, especially laboratory benches, clear of clutter.
- d. All aisles, hallways, and stairs (egress paths) should be kept clear of all chemicals as required by fire codes and the Fire Marshal.
- e. All chemicals should be placed in their assigned storage areas at the end of each workday.
- f. Promptly clean-up all small chemical spills when appropriate expertise, protective apparel and equipment and disposal resources are available to safely accomplish the task. Properly dispose of the spilled chemical and cleanup materials through the Occupational Health and Safety Office.
- g. All working surfaces and floors should be cleaned regularly. Always consider the measures that should be taken to prevent injury to personnel entering the laboratory to clean, collect waste, repair or remove equipment, etc.

5. Prior Approval

- a. Mandatory Prior Approval

Employees must obtain prior approval by Occupational Health and Safety and the PI prior to proceeding with a specific laboratory task when:

A laboratory accident has occurred or it is suspected that laboratory personnel may have become ill because of the laboratory work and the cause has not been identified and corrected.

b. Suggested Prior PI/Supervisor Approval

Employees should obtain prior approval to proceed with a laboratory task from the PI in the research laboratory or the supervisor in other laboratories when:

A new laboratory procedure or test is to be carried out that has potentially dangerous or toxic repercussions.

It is likely that airborne contaminant levels could exceed the (PEL, TLV, etc.) or that other harm is likely.

There is a failure of any equipment used in the process, especially safeguards such as fume hoods.

There are unexpected results that could impact safety.

6. Spills and Accidents

- a. Small chemical spills should be promptly cleaned up when appropriate expertise, protective apparel, equipment and proper disposal is available to safely accomplish the task. If in doubt, the spill should be reported to Occupational Health and Safety, phone 686-5536 or Central Control, 686-6424 after hours, the laboratory cleared of personnel and the laboratory door kept closed until assistance arrives.
- b. Any employee injury or suspected occupational illness must be reported to the lab supervisor and Student/Employee Health Services (SEHS) where a report of injury/illness will be completed. Medical treatment/evaluation of such occupational incidents is handled during normal work hours by SEHS. Outside of normal work hours contact the Emergency Department and inform them that you are a UAMS employee and care is required for a work-related incident. Dial 686-3333 for help in an emergency.

7. Workplace Monitoring

- a. OSHA and this CHP recognize that regular instrumental monitoring of airborne concentrations is not usually justified or practical in laboratories but may be appropriate when testing or redesigning hoods or other ventilation devices or

when a highly toxic substance is stored or used regularly. The Chemical Hygiene Officer should be contacted when such monitoring may be indicated. The CHO will then, determine when such monitoring is needed and insure such monitoring is accomplished when necessary.

- b. The Chemical Hygiene Officer will ensure monitoring of the employee's exposure as required by the Laboratory Standard, to any substance regulated by an OSHA standard which requires monitoring if there is reason to believe that exposure levels for that substance routinely exceed the action level (or in the absence of an action level the permissible exposure limit [PEL]).

8. Procedure-Specific Safety Procedures

Any written laboratory procedures should include a written description of the specific safety practices required by and/or reference the CHP. Employees should read and understand these practices and Chemical Hygiene Plan requirements before commencing a procedure. Specific additional safety procedures follow, in this section, for the laboratory use of chemicals that may present special hazards.

a. Procedures for Carcinogens, Reproductive Toxins, Substances That Have a High Degree of Acute Toxicity, and Chemicals of Unknown Toxicity

For their protection laboratory employees must follow the additional procedures described in this section when performing laboratory work with any **select carcinogen, reproductive toxin**, substance that has a **high degree of acute toxicity**, or a chemical whose **toxic properties are unknown** (when using or handling amounts greater than a few milligrams to a few grams, depending on the substance). These additional procedures do not apply when the principal investigator/supervisor has coordinated the work with the Chemical Hygiene Officer and the CHO has concluded that exposures, because of the conditions of use, will not routinely exceed the action level or the permissible exposure level or when the CHO and Principal Investigator/supervisor have agreed on other safety procedures.

- (1) The following definitions will apply:

Select carcinogen: Any substance defined as such in 29 CFR 1910.1450 and any other substance described as such in the applicable MSDS.

Reproductive toxin: Any substance described as such in the applicable MSDS. Examples of reproductive toxins include dibromochloro-propane (DBCP), ethylene oxide, inorganic lead compounds, formamide, alkyl

mercury compounds and glycol ethers (2-methoxy-ethanol, 2-ethoxyethanol, and their acetates). Questions on reproductive toxins should be addressed to the Occupational Health and Safety Office. See Appendix A, paragraph 1910.1450 b for the OSHA definition.

High acute toxicity substance: Any DOT poison gas and any substance described in the applicable MSDS as a "highly toxic chemical" (e.g. hydrogen cyanide). Questions on substances that should be considered "high acute toxicity" should be referred to the Occupational Health and Safety Office.

Chemicals with **unknown toxicity**: A chemical for which there is no known statistically significant study conducted in accordance with established scientific principles that establishes its toxicity.

For the purposes of this Chemical Hygiene Plan, chemicals in these four categories will be called "special chemicals".

Designated Area: A hood, glove box, portion of a laboratory, or an entire laboratory room designated as the only area where work with quantities of the "special chemical" shall be conducted.

- (2) Prior to ordering a "special chemical" the principal investigator/laboratory supervisor should determine how to comply with these additional safety requirements. Prior to use the PI/supervisor must specify the designated area(s) and post the boundaries clearly. (The principal investigator or supervisor designating an area for the use of "special chemicals" should consult with Occupational Health and Safety Office and post the designated area in accordance with OH&S recommendations.) Only those persons trained by the principal investigator/supervisor to work with the "special chemical" and informed of its toxicity should use the substance. Such work should be done in the designated area. All users of special chemicals should conduct their work in accordance with the CHP and the principles outlined below:
 - (a) Use the smallest amount of chemical that is consistent with the requirements of the work to be done.
 - (b) Minimize personal exposure by the consistent use, as appropriate, of a chemical hood, properly selected gloves, safety goggles, and laboratory coat that is removed by the individual prior to his/her leaving the laboratory.

- (c) Use high-efficiency particulate air (HEPA) filters or high-efficiency scrubber systems to protect vacuum lines and pumps.
 - (d) Work on a spill containment tray and/or absorbent pad to facilitate cleanup and decontamination in case of a spill.
 - (e) Prepare for disposal any wastes from work with "special chemicals" as recommended by the Occupational Health and Safety Office.
- (3) During storage and use, compressed gas cylinders containing a DOT poison gas should be kept in a ventilated enclosure (e.g. a lecture bottle of chlorine in a lecture bottle stand in a chemical hood).
 - (4) Because the decontamination of jewelry may be difficult or impossible, jewelry should not be worn when working with "special chemicals."
 - (5) Any surface contaminated with a "special chemical" should be properly disposed of or thoroughly cleaned and decontaminated. For a limited number of chemicals suggested decontamination methods are available from the Occupational Health and Safety Office. Contact the Occupational Health and Safety Office on spills. As a minimum, during use of "special chemicals" users should wear gloves resistant to permeation by the "special chemical", a laboratory coat and, if eye contact is possible, safety goggles. Wash hands and face promptly if contact is suspected and as soon as work with such "special chemicals" is completed.

b. Procedures for Flammable Chemicals

In general, the flammability of a liquid is determined by its flash point, the lowest temperature at which an ignition source can cause the chemical's vapor to ignite momentarily in air under certain controlled conditions.

- (1) Liquids with a flash point below 100° F (37.8° C) will be considered "flammable liquids."
- (2) Applicable standards; Arkansas Fire Code, OSHA standards and the National Fire Protection Association (NFPA).
- (3) Association (NFPA) guidelines apply to the use of flammable liquids in the laboratory. Consultant advice on these Fire Safety Regulations is available from the Campus Fire Marshal (Ext. 686-5536).

- (4) Quantities of flammable liquids in the laboratory should be kept to a minimum consistent with laboratory needs and fire code mandates. Flammable liquids should be stored properly. Flammable liquids or items from which flammable vapors can evolve (e.g. ether) must not be stored in refrigerators/freezers, that are not designed as explosion-proof or explosion-safe.
- (5) Flammable liquids should normally be used only in well ventilated areas away from sources of ignition.
- (6) Special fire hazard potentials should be assumed to exist whenever oxygen is in use and/or oxygen concentrations in air are elevated above normal levels.
- (7) Always store flammable liquids away from oxidizers.
- (8) Be aware that liquids with flash points at and above 100° F may also present a significant fire hazard in case of ignition.

c. Procedures for Reactive Chemicals

Reactive chemicals are substances which may enter into violent reactions with the spontaneous liberation of heat and/or gases too rapidly to be safely dissipated. This may result in the rupture of the container, an explosion, fire or the release of toxic gases/vapors. Laboratory users should handle reactive chemicals with all proper safety precautions, including segregation in storage. For example, nitric acid (a strong oxidizer) should not be stored with flammables. Water reactives should not be stored in a location where the item could get wet. Users should not mix for the first time even small quantities of such reactive chemicals with other chemicals without prior approval of the PI/supervisor. If picric acid crystals must be used, procedures should be established to keep the crystals moist with water. Dry picric acid crystals are a shock sensitive explosive. Some chemicals on aging form reactive compounds. For example diethyl ether forms peroxides. Thus, ether has an expiration date. Limit quantities of such materials.

d. Procedures for Corrosive Chemicals and Contact-Hazard Chemicals

Corrosive chemicals are those substances that, by direct chemical action, are injurious to body tissues or corrosive to metals. Users of corrosive liquids should take special precautions so that direct contact does not occur. Common corrosive liquids include the inorganic acids (hydrochloric, nitric, etc.), organic acids (acetic, butyric, etc.), caustic solutions (ammonia, sodium hydroxide, etc.), other inorganics (bromine, phosphorous trichloride, etc.), and other organics (acetic

anhydride, liquified phenol, 2-aminoethanol, etc.). Corrosivity, allergenic, and sensitizer information is sometimes given in manufacturers' MSDSs and on labels. Corrosive and contact hazard chemicals should be handled with all proper safety precautions, including wearing safety goggles when the potential exists for eye contact, gloves tested for absence of pin holes and resistant to permeation and degradation, and a laboratory coat and/or laboratory apron, as appropriate. In case of direct contact with such chemicals, immediately irrigate the area with copious amounts of water and seek medical attention.

e. Procedures for Compressed Gase

All compressed gas cylinders must be kept properly secured during transportation, storage and use. Cylinders equipped for a protective valve cap must have the protective cap installed during any cylinder movement and during storage (normally cylinders should not be moved with the regulator installed).

f. Procedures for Cryogenic Liquids

In addition to the potential hazards that may result because of their chemical composition, cryogenic liquids have other hazardous properties related to their low temperatures and the tremendous volumes of gases released upon vaporization. Cryogenic liquids should be used and transported in containers designed to handle such liquids. Areas where such materials are used or stored should be well ventilated. When working with such liquids users should wear suitable protective equipment (e.a. protective gloves, a laboratory coat, and when the potential exists for a splash an impermeable apron and eye protection). Extreme care should always be taken to have an open vent on such containers because liquid vaporization can cause extreme pressures to be generated if the container is not adequately vented.

g. Engineering Controls and Equipment

Chemical safety is achieved by continual awareness by the user and P.I./supervisor of the specific hazards of the chemicals being used and by reducing the risk of such potential hazards by the implementation of suitable practices and controls, including engineering controls (e.g. chemical hoods). P.I.s and laboratory supervisors should be alert to detect the malfunction of engineering and other safeguards. All engineering safeguards and controls should be properly maintained, inspected on a regular basis, and never overloaded beyond their design limits. Physical Plant maintains and inspects installed engineering controls such as chemical hoods in order to ensure their proper performance. Users should

follow proper procedures so that they obtain the full protection that may be afforded by such controls. Users should promptly report suspected problems with installed engineering controls, such as chemical hoods, to Physical Plant for evaluation and correction. The Occupational Health and Safety Office will verify the proper operation of chemical hoods at least annually and upon request.

- a. Physical Plant will maintain good laboratory ventilation. Work with significant quantities of toxic chemicals that have low air concentration limits, or that have high vapor pressures, should always be done in a hood.
- b. Chemical hoods should provide a minimum face velocity of 100 feet per minute (fpm) average, plus or minus 20%, with the sash fully open.
- c. A chemical fume hood is a safety backup for condensers, traps, or other devices that collect vapors and fumes. It should not be used to "dispose" of chemicals by evaporation unless the vapors are trapped and recovered for proper waste disposal. For a chemical fume hood to provide significant protection it must be used and maintained properly by the user.
- d. The work or apparatus inside the hood should be placed at least six inches behind the sash.
- e. The fume hood sash should be closed at all times except when necessary to adjust the apparatus that is inside the hood (when hoods have horizontal sliding panes, the panes should be kept closed).
- f. The hood fan should be kept "on" whenever a chemical is inside the hood, whether or not any work is being done in the hood; Personnel should be aware of the steps to be taken in the event of power failure or other hood failure (e.g. stop work, cover chemicals, close hood, notify supervisor or PI).
- g. Occupational Health and Safety inspects hoods at periodic intervals to be sure they are working properly.
- h. Hoods should not normally be used as storage areas for chemicals, apparatus, or other materials.
- i. Environmental rooms are NOT well ventilated and procedures carried out in such rooms should be carefully designed to minimize exposures.
- j. In addition to chemical hoods, many laboratories have biological safety cabinets. Users are responsible for an initial and yearly certification of biosafety cabinets used for personnel protection.

- k. Hot perchloric acid digestions must be accomplished in a properly equipped perchloric acid hood (there is not one on campus). Small quantity use may be approved on an individual basis by the Chemical Hygiene Officer.

h. Flammable Liquid Storage

- (1) Flammable liquids on hand shall be kept within fire code guidelines.
 - (a) Barton Research, Ed II, Ed III, Shorey, Biomedical Research and Jones Eye Laboratories may store up to 60 gallons in flammable liquids storage cabinets. Twenty Five (25) gallons may be stored in safety cans and up to 10 gallons may be stored in glass bottles.
 - (b) University Hospital, Outpatient Center, and ACRC may store up to 60 gallons in flammable liquids storage cabinets. Up to 10 gallons may be stored outside of safety cabinets.
 - (c) When flammable storage cans are used, never disable the spring-loaded closure. Always keep the flame-arrestor screen in place; replace the screen if it is punctured or damaged. Flammables should not be stored with incompatible materials like oxidizers or in refrigerators and freezers that are not designed for storage of such.
- (2) Cabinets designed for the storage of flammable materials should be properly used and maintained. The user should read and follow the manufacturer's information and should also follow these general safety practices:
 - (a) Store only compatible materials inside a cabinet;
 - (b) Do not store paper or cardboard or other combustible packaging material with flammable liquids:
 - (c) The manufacturer establishes quantity limits for various sizes of flammable liquid storage cabinets; cabinet should not be overloaded.

9. Eyewash Fountains and Safety Showers

- a. All laboratories shall have an eyewash, inside the lab, connected to the potable water system. Safety showers are located in labs or hallways. Users need to know the location and how to operate such devices.

- b. Physical Plant periodically flush and check the functioning eyewash fountains and safety showers. Lab workers should make sure that electrical wires and devices are clear of the eyewash. Users are encouraged to report problems with such safety devices promptly to Physical Plant for evaluation and repair (686-5891).
- c. Be sure that access to eyewash fountains and safety showers is not restricted or blocked.

10. Respirators

- a. Respiratory protection should only be used in a laboratory on rare occasions; including emergencies, and after ruling out all possible engineering control methods.
- b. Use of respirators to protect against a chemical exposure requires that the potential user be medically qualified by SEHS, and certified by Occupational Health and Safety. Contact Occupational Health and Safety before the use of any respirator.
- c. Campus Policy 11.4.14, "Respiratory Protection Policy," governs the use of respiratory protection for all UAMS employees. Surgical masks are not to be used to provide respiratory protection against chemical overexposure.

11. Medical Consultation and Medical Examinations

All medical examinations and consultations will be done by or under the direct supervision of a licensed physician. These will be provided without cost to the employee, without loss of pay and at a reasonable time and place. This will be available under at least one of these circumstances:

- a. Whenever an employee develops signs or symptoms associated with a hazardous chemical to which the employee may be exposed in the laboratory.
- b. Exposure monitoring reveals an exposure level routinely above the action level (or the PEL if an action level is not available) for an OSHA regulated substance for which there are exposure monitoring and medical surveillance requirements.

12. Laboratory Audits

Occupational Health and Safety will conduct formal audits at least annually in each laboratory on campus. Every laboratory employee must be alert to unsafe conditions and see that they are corrected or reported to the supervisor or PI when detected.

13. Records

- a. UAMS shall retain employee work-related injury and incident reports.
- b. Laboratory audit records shall document that facilities and precautions are compatible with current knowledge and regulations.
- c. UAMS shall keep employee medical records according to the requirements of state and federal regulations.

14. Information and Training Program.

The aim is to assure that all individuals at risk are adequately informed about the work in the laboratory, its risks, and what to do if an accident occurs. Annual chemical hygiene training is mandatory for all laboratory workers.

- a. Occupational Health and Safety shall provide general lab safety training. Training for a specific process or procedure is the responsibility of the PI/Supervisor. All training should be documented.
- b. Every laboratory worker should know the location and proper use of available protective apparel and equipment.
- c. Some full-time laboratory personnel should be trained in the proper use of emergency equipment and procedures.
- d. OH&S maintains a reference library containing texts on lab safety and design, chemical safety, chemical disposal, current OSHA and USEPA regulations, fire codes and the campus master MSDS library.

15. Waste Disposal Program

The following general guidance will not cover every situation. Contact OH&S at 686-5536 for additional information.

- a. It is a violation of federal and state law to dispose of a United States Environmental Protection Agency (USEPA) hazardous waste improperly by throwing the substance in the trash or pouring it on the ground.
- b. Drain (sanitary sewer) disposal of chemicals is regulated by the USEPA Clean Water Act and Little Rock Wastewater Utility District regulations. SMALL amounts of certain chemicals are permissible for drain disposal if there are:
 - (1) No hazards of fire, explosion, violent interaction
 - (2) No interference with the sewage treatment process
 - (3) Temperatures less than 150 degrees F/65 degrees Celsius
 - (4) pH values between 5.0 and 11.0
 - (5) No corrosive hazards to personnel or the sewage works.
 - (6) No unusual concentrations of inert suspended solids
 - (7) No excessive discolorations, such as large amounts of stains
 - (8) No toxic effects or public nuisance (No highly toxic/acute hazardous wastes, no malodorous or lachrymatory substances)
- c. OH&S provides hazardous waste disposal services including limited recycling, bulking organic solvents and arranging for contractor lab packs for all categories of chemical waste. Call OH&S at 686-5536 for specific guidance.
- d. Chemical waste can be brought by laboratory employees to the OH&S Lab, (Hospital G/172). Call for an appointment, 686-5536.

16. Moving Procedures

These procedures apply to investigators who are closing out a laboratory as well as moving previously established laboratories within UAMS.

- a. Prior to the closing or moving a laboratory, the Occupational Health and Safety Office must be notified in writing by the Principal Investigator or Department Chairman. This notification should provide as much lead time as possible, but two weeks is a minimum. The Occupational Health and Safety Office will provide assistance to assure that the movement of hazardous chemicals,

radioactive materials and infectious agents are done in compliance with the appropriate regulatory agency.

- b. A "close-out survey" must be performed for all previously occupied laboratory areas prior to their being used again. This survey will verify these areas are free of radioactive contamination, hazardous chemicals and infectious agents.
- c. Movement of potentially contaminated equipment, (refrigerator/ freezers, centrifuges, bench-tops, etc.) must be approved and the equipment must be surveyed by the Occupational Health and Safety Office before it is transferred to another area. It is the responsibility of the laboratory to provide effective decontamination/deactivation of the various hazards involved.