The Move Manual:
A Guide to Relocating Laboratories

This booklet contains safety guidelines and reference information for the physical relocation of hazardous materials and equipment and is primarily written for laboratory relocations[1] at Oklahoma State University Center for Health Sciences (OSU-CHS.)

Planning and preparing for your move is the perfect time to update your chemical and equipment inventories, clean out unusable and outdated materials, repair or discard broken equipment, and ensure that a safe work space is created in your new location. The time you spend preparing and organizing may save you time and money by avoiding preventable accidents and fines.

Topics covered include:

- ✓ Planning Your Move
- ✓ Handling Hazardous Materials at the Old Location
- ✓ Handling Equipment During the Move
- ✓ Handling Hazardous Materials at the New Location
- ✓ After You Move

Contact Notes:

Research Office Compliance and Safety Staff (REH&S):
Regulatory Compliance Director, 918-561-1413
Laboratory Safety Coordinator (LSC), 918-561-1403
Radiation Safety Officer (RSO), 918-561-1403
Facilities Use and Planning Committee, https://centernet.okstate.edu/renovate/
Tulsa Help Desk, 918-594-8200, tulsa.helpdesk@okstate.edu

If you have questions before, during, or after your move, contact the REH&S. Additional safety resources, including manufacturer's Safety Data Sheets and equipment user's manuals, should be found in the laboratory or online.

Once you have moved out of the previous laboratory, copy and complete the last page in this document.

[1] This booklet is adapted from Stony Brook, State University of New York, Environmental Health and Safety "The Move Manual", 2009.

Planning Your Move

Before You Start

Relocation requires advance approval by the Facilities Use and Planning Committee. Submit the appropriate online form. Then prepare a checklist of events, time schedules, and people involved with the move. Bring any safety questions to your department chair or the research office compliance and safety staff.

It is advisable to pack and move chemicals and hazardous materials during regular work hours (Monday-Friday, 8 a.m. to 5 p.m.) when your department chair or the research office compliance and safety staff are more readily available in case of a spill or accident. The OSU-CHS Emergency staff are also available off-hours to respond to spills and can be reached by calling OSU-CHS Security at 918-625-8592. If you are moving to another building, you may want to consider hiring a qualified contractor to move your hazardous materials.

Remember these general guidelines:

- Work with a buddy. Do not work alone.
- Always wear appropriate protective clothing and use proper safety equipment.
- Read the information in this manual before you begin to pack and move.
- Review the OSU-CHS Laboratory Emergency Response Procedures.
- If you are unsure about anything, ASK!

Planning Your Move

Once you have received approval from the Facilities Use and Planning Committee and your department chair, approximately one month before the move, notify the research office compliance and safety staff that your current lab will be moved/vacated. Survey existing chemicals and equipment in your laboratory and evaluate your new location site. Design an informal diagram with measurements of the new location and determine where all materials and equipment will be relocated. The following questions and recommended actions will help make your relocation smoother.

New Location

Are you moving to an off-campus location?

- Determine the type and quantities of hazardous materials to be moved.
- Ask the Research Office Compliance and Safety Staff if any notification or special permits are required.
- If radioactive work is to be done in the new facility, a copy of the Radioactive Material License for the new facility must be on file with the Research Office Compliance and Safety Staff.

Have you checked the new area you will be moving to?

- Plan where you will place your large items.
- Determine if there are enough electrical outlets and if not, where you need them. Identify which outlets are on emergency back-up power.
- Plan a storage area for your chemicals, including a flammable storage cabinet.

- Plan a designated area for collecting unwanted hazardous materials until pick-up by the LSC.
- Arrange to have seismic restraints installed on existing open shelves where liquids are stored in glass containers, if at all possible.
- Identify a safe restraint area (i.e., chains) for gas cylinders.

Hazardous Materials

Are there chemicals you no longer need?

- Ask others in your department if they would like the chemicals and transfer them to that lab.
- If the chemicals are in good condition giving them away will be less expensive than disposing of them.
- This is a good time to evaluate your inventory for ways to reduce it or substitute less hazardous chemicals.
- Label chemicals to be disposed as "hazardous waste." Complete a Hazardous Waste Pickup form following the instructions and send by email to the LSC.

Do you have outdated chemicals?

- **If reactive dispose of them**. Dry picric acid, very old ethers and other peroxide formers (reference the OSU-CHS Chemical Hygiene Manual, Appendix C, Section III) should not be moved. Restrict access to the area and call the research office compliance and safety staff immediately if you find any of these types of old highly reactive chemicals.
- Other chemicals that are outdated but not unstable should be packaged for pickup and disposal.

Are there unknown or unlabeled chemicals?

- Label all known chemicals and compounds. Only relabel chemicals whose identity you are sure of. Put new labels on containers with illegible or deteriorating labels. Label according to the OSU-CHS Chemical Hygiene Manual, section 6.3 "Labels and Safety Data Sheets."
- Contact the LSC if you have materials you can't identify.

Are chemical containers and caps in good condition?

- Replace containers and caps if in poor condition. Using damaged containers is one of the major causes of accidental spills.
- Do not move chemicals in open topped flasks or beakers even if tops are covered with parafilm. Put chemicals into containers with caps.

Are there chemicals (including samples) left under the fume hood, under the laboratory sink, in refrigerators/freezers or tucked behind equipment?

- Check all those out-of-the-way places chemicals might have been left. Most laboratories have relics from times past that should be identified and disposed of before moving.
- Identify and properly dispose of all old, unusable materials.

Are there old lecture bottles or other gas cylinders?

- Contact the Regulatory Compliance Director at 918-561-1413 for information on how to dispose of old cylinders.
- Gas cylinders should be handled with extreme care, with safety caps on and properly

restrained.

Do you have biological material in your laboratory?

- Contact the Regulatory Compliance Director at 918-561-1413 for information on moving or disposing of your biological material.
- Ensure that your current laboratory is released as a biological use area and that the new location is registered as a biological use area.

Do you have radioactive material in your laboratory?

- Notify the RSO at 918-561-1403 that you are planning to move. If you will continue to work with radioactive materials, submit a new RS-2 "Restricted Area Approval Request" for the new location and amend your project approval (RS-1 form) to show the new location.
- All Low Level Radioactive Waste (LLRW) must be removed and all sealed sources must be accounted for in the final termination inventory. In addition, a final area contamination survey needs to be performed on all areas before the lab can be returned to a non-control area and all radioactive material signs removed.

Equipment

Does your equipment require special handling?

- Assess whether the equipment needs decontamination before moving and/or recertification after moving (e.g., pathogenic work in a biological safety cabinet, radioactive contamination of liquid scintillation counters or centrifuges, or freezers with an accumulation of contaminated ice).
- If freezers have not been recently defrosted, defrost before moving.
- Make arrangements in advance for help in moving equipment (tulsa.helpdesk@okstate.edu.)
- If you have equipment that contains mercury, take extra precautions to keep the mercury from spilling or leaking during the move. Use secondary containment if possible. Mercury spills can be expensive to clean up.

Do you have old or damaged equipment?

- Schedule equipment for repair before you move, especially if the equipment could leak hazardous material such as mercury during the move.
- Check for and remove all chemical, biological or radioactive contamination.
- Recycle, salvage or dispose of unwanted equipment when possible. Complete a "Fixed Asset Disposal Request Form", accompanied by a notification that all hazardous contamination has been removed.
- Old refrigerators must be emptied and decontaminated. Strap latching refrigerators shut before moving them. Notify the tulsa.helpdesk@okstate.edu that chlorofluorocarbons (CFCs) need to be removed before disposal.

Miscellaneous

- Do you have all the supplies and equipment you need to pack? How will the move be accomplished?
- Are all necessary people notified, e.g., Physical Plant, Research Office Compliance and Safety Staff?

Handling Hazardous Materials at the Old Location

Guidelines for Preparing Chemicals to Be Moved

Serious mishaps can occur if boxes are dropped and incompatible chemicals interact. Since compatibility requirements are similar for moving and storing chemicals, packing chemicals for the move is a good time to lay the groundwork for segregated storage in your new lab. Check the "Chemical Storage Guidelines," in the "Handling Hazardous Materials at the New Location" section of this manual for more details.

Preparing for Packing

- Have spill clean-up materials on hand before you begin packaging. Know the location of the spill kits and clean-up materials available to you before you get started.
- Wear personal protective equipment appropriate for the materials being handled (safety glasses, lab coat, gloves, closed-toed shoes, etc.).
- Make sure that containers are not likely to leak in transport. Make sure that all containers and their lids are in good condition. Secure glass stoppers to their containers with tape and provide secondary containment for the containers.
- Relabel chemical containers that have become difficult to read with the following information if on the initial label: full name of the chemical, supplier identification, hazard warnings or pictograms, a signal word, hazard and precautionary statements, and supplemental information.
- Move only labeled and non-leaking containers to your new location.
- Prepared (working) solutions or transferred chemicals must be in compatible containers with tight fitting lids and labeled with at least: chemical components (full names shall be the same as that from the original purchased containers,) preparer's initials, date of preparation, hazards (where they exist.)
- Separate chemicals from radioactive materials and from biohazardous materials
- Separate chemicals into the categories listed in Appendix 1.

Packing Your Chemicals

- Use sturdy boxes, deep trays or 5 gallon buckets with lids to pack chemical containers. Cushion the containers to prevent breakage and contain spills using compatible absorbent materials. (Newspaper is often a good cushion since it is absorbent and does not react with most chemicals, but it is not recommended for oxidizers or organic peroxides).
- Pack boxes so they can be completely closed and taped shut. Boxes should be light enough to be picked up by one person. Do not allow bottle necks or stems to protrude. Do not stack non-sturdy boxes. Boxes must be placed in upright position, draw arrows in the up direction.
- Keep boxes of incompatibles separated from one another before and during transportation.
- Label each box as you pack. It is recommended to include a copy of the Materials Packing List (see Appendix 2). This will make unpacking easier and keep the box from being misplaced. A Materials Packing List must be included if the chemicals will not be unpacked within 2 weeks.
- Label all boxes according to general hazard class (e.g., radioactive, flammable solid,

corrosive acid, etc.).
- Refrigerated materials need not be boxed together, but should be separated into their hazard class or handled according to their own special requirements. Flammable liquids shall not be stored in refrigerators that are not classified for flammable storage.
- Chemicals stored in the cold need to be stabilized at room temperature before packing and moving. If material is required to not be thawed it may be moved in a cold manner and placed immediately back into the freezer.

Packing Biohazardous Material

The following is the required procedure to be in legal compliance for transport of biohazardous materials:
- Minimize liquid volume and weight of all materials.
- The biohazardous material must be contained in a closed, leak proof, unbreakable primary container.
- The primary container must be contained within a secondary container made of a material sufficient to prevent any leak should the primary container fail.
- Both of the containers must be contained within an opaque plastic or cardboard box, packed with sufficient absorbent material to both cushion the secondary container against shock AND completely absorb the hazardous material should both the primary and secondary containers fail.
- The box must have the name, laboratory address, and laboratory phone number of an emergency contact to be notified should the box be lost or stolen. A biohazard warning sign, the name of the biohazardous material, and its biosafety level (BL-2, etc.) must be just under the lid or flap so that it will be immediately visible to any person opening the box.
- Consult with your department and the Regulatory Compliance Director at 918-561-1413 to arrange for safe and legal transport if material is being sent off campus.
- Freezers can be moved with material still in them, provided the freezer has been recently defrosted (no ice exists), all contents are in sealed, unbreakable containers and secured to avoid breakage and spills when the freezer is moved and opened. The freezer must be sealed shut prior to moving.

Inventorying

- Update your chemical inventory as you pack. Provide an updated excel copy to the LSC.
- Check containers for expiration date and signs of corrosion or crystallization. If such degradation has occurred, arrange for disposal of the material.
- Keep an extra copy of the inventory in a safe location outside the lab for reference in emergencies.
- Use an ID system so that the box can be matched with the inventory should they become
  separated.

Moving Your Chemicals

All chemicals shall be moved by laboratory personnel, those familiar with working with chemicals.

Before moving your chemicals, take time to read the "OSU-CHS Laboratory Emergency Response Procedure," appropriate sections. Make sure your department chair and the Research Office Compliance and Safety Staff are aware of the date and time of your move.

If the move is within the same building, use a good hand-truck, dolly, or cart. Secure the boxes and containers to the dolly or cart to prevent them from falling off. For longer moves or off- campus relocation, other arrangements for safe and legal transport must be made.

Preparing Unwanted Chemicals for Pick-Up

The LSC picks up unwanted hazardous chemical materials for reuse and recycling or for disposal when necessary. Contact the LSC at 918-561-1403 for these types of arrangements. Complete a Hazardous Waste Pickup form (follow the Hazardous Waste Pickup Instructions) by scrolling down to the "Laboratory Safety Forms" section to find the correct forms. Once the form is completed, send in excel format to the LSC to arrange for a removal time. Each chemical container shall be labeled with the hazards of the contents and the words "hazardous waste" by the laboratory personnel before the containers can be removed.

Radioactive Waste for Pick-Up

Radioactive waste must be packaged, prepared for disposal, and stored per the OSU-CHS Radiation Safety Manual policies. If you have any questions regarding radiation safety, need radioactive waste picked up, or information on waste packaging, contact the RSO at 918-561-1403.

Infectious Agents, rDNA and Sharps Waste Disposal

Infectious agents and rDNA waste shall be chemically disinfected or sterilized or placed in a red bag, autoclaved, placed in a black trash bag and put in the outside dumpster beside the dock.

Instructions for disposing of regulated medical waste, such as pharmaceuticals, can be requested by contacting the Compliance Department at 918-586-4540.

Sharps are regulated waste, whether biologically contaminated or not. Sharps are offered to be transported offsite by a common carrier. Sharps include, but are not limited to, needles, lancets, syringes, biologically contaminated broken glass, scalpels, culture slides, culture dishes, broken capillary tubes, broken rigid plastic, exposed ends of dental wires, slides and cover slips. They shall be placed in puncture-resistant containers (usually rigid plastic) designed for sharps waste with the biohazard logo. When the fill mark is reached on the container, generally about 75% full, tightly close and contact the office of research LSC for transport from the area of generation to be readied for transport by the common carrier.

Regular Non-hazardous Trash

To protect housekeeping personnel from injury and prevent illegal hazardous waste disposal, be careful about what you put in the trash. Only non-hazardous solid material should go in the trash. Glass, broken or not, shall be placed in a labeled rigid container such as a corrugated box. The filled box or non-broken glass containers shall be taken to the outside dumpster by lab personnel, not by housekeeping personnel. Do not put broken glass in the normal trash if it is contaminated by hazardous or biohazardous material.

Some non-hazardous items that may go into the trash are sugars and some salts, powdered detergent, and protein mixes, etc. Since many of these non-hazardous items may be easily confused with hazardous substances once they are in the trash, ensure that they are in a plastic container or bag and label the container as "Non-Hazardous."

Disposing of Empty Chemical Bottles

- All empty containers of p-listed chemicals must be triple rinsed with an appropriate solvent before disposal. Collect and dispose of the rinsate as hazardous waste.
- Recycle glass, bottles and cans where possible.
- If the container held a volatile or strong-smelling material, rinse with an appropriate solvent to prevent vapor emissions. If the solvent is a hazardous material, collect and dispose of as hazardous waste.
- If the container had pourable materials, it must be emptied such that no material can be drained when the container is in any orientation.
- After performing the appropriate action above, remove the label or completely deface it with a marker (not a ball point pen) or tape, so that it is clear from a distance that the bottle does not contain hazardous material.

If you do not know whether a substance is a hazardous waste, check the safety data sheet or contact the manufacturer.

Under no circumstances may regulated infectious agent or rDNA waste, hazardous waste, radioactive waste or containers labeled with the international biohazard or radioactive symbol or the words "regulated medical waste," "biohazard," "infectious," or "sharps waste" be disposed of in the regular trash.

Back Injury Prevention

Although you may not be moving your large lab contents personally, you will be packing boxes, moving items out of the way, moving chemicals and stretching over and around objects. To prevent back strain:

- Do not twist while you lift, carry, or deposit a load. Twisting when reaching, lifting or depositing an object is the main cause of back injuries. Make certain that you are facing the object squarely, whether it's a book on a shelf, a reagent bottle or a box.
- Do not lift or lower an object above shoulder height. Use a ladder or step stool to position yourself so that high objects are below shoulder height. Ask someone to help you so you can safely hand down the object.
- Do not stretch to pick up or deposit an object. If you must stretch to reach an object in front of you, support your upper body weight by leaning on a desk or table.

- Get as close as possible to the object you are lifting to prevent back strain. Even a light object lifted at arm's length can strain your neck and back, particularly if it is done repeatedly.
- Lift with your leg muscles, not with your back. As you lift, keep the load as close to the body as possible. Keep your back straight as you lift, bending at the knees instead.

Handling Equipment During the Move

Keep the Physical Plant updated with all information associated with their assistance, e.g. adding extra outlets, moving equipment, if plans were made in advance.

Fume Hood

Remove everything from the fume hood and the cabinets underneath the hood. Clean all work surfaces with soap and water (this should be done. Do not remove panels, since they may contain asbestos.

Biosafety Cabinet

Work surfaces of biosafety cabinets should be disinfected prior to moving them. Cabinets used for work involving pathogenic organisms may require paraformaldehyde decontamination prior to being moved. Otherwise, use of 70% alcohol or a 1:10 dilute bleach solution should be sufficient. This solution must remain on the surface for 20 minutes to be effective. Wipe with water to remove solution.

All biological safety cabinets must be tested and certified for air flow and filter integrity after being moved. Note: Biosafety cabinets have a specially designed HEPA filter system and should not be confused with a chemical fume hood. For further information contact the Regulatory Compliance Director at 918-561-1413.

Compressed Gases

Compressed gas cylinders pose hazards for several reasons:
- Because of their pressure, they can become "unguided missiles". Mishandled gas cylinders can build up enough force to go through a concrete wall.
- The material in the cylinder may be toxic or flammable.
- They can tip over easily if not adequately restrained.

Moving Cylinders
- Remove the gauge and regulator and secure the valve cap before moving a cylinder.
- Transport cylinders on a wheeled cart, carefully securing them in an upright position.
- Secure the label with packaging tape to prevent it from falling off.
- Never leave a cylinder unattended.
- Never move a cylinder by rolling it across the floor; always use a cart.
- Never drop cylinders or bang them against anything.
- Never leave cylinders in the sun.

Leaks
Report all suspected leaks to your supervisor. Report larger leaks and leaks involving toxic gases to your department or the Regulatory Compliance Director at 918-561-1413 for further action. If you believe the situation is immediately dangerous, call Security at 918-625-8592 and the LSC.

Disposal
- Empty cylinders should be labeled EMPTY or "MT". Call the supplier for pick-up.
- Contact the Regulatory Compliance Director at 918-561-1413 if you have a cylinder with unknown contents.

- Because of the very high cost of disposal of most toxic gases, these gases should be returned to the vendor whenever possible. Contact the vendor for guidelines on preparing the cylinder for return.
- Lecture bottles should be returned to the vendor.
- When possible, use vendors who will take back unused portions of product so as to avoid costly disposal charges.

Hazardous Materials in Laboratory Equipment

Some laboratory items may contain materials or chemicals that are potentially harmful to human health or the environment. Preparing this equipment for transport requires special handling.

Care must also be taken to avoid damaging or disturbing asbestos-containing materials. Contact the Tulsa Help Desk at Tulsa.helpdesk@okstate.edu if you have items suspected of containing asbestos. The Tulsa Help Desk will contact the Physical Plant to inspect and make a determination as to how to proceed. Laboratory personnel shall not disturb the asbestos.

Equipment that may need to be decontaminated includes centrifuges, microscopes, incubators, vacuum pumps, refrigerators and biological waste or radiation waste containers.

Fragile components or components containing materials that may spill if inverted (e.g., a glass manometer) must be specially secured with double containment or emptied. Any instrument or piece of unsealed equipment containing significant quantities of a hazardous material in liquid form must be drained prior to move. Report to the Tulsa Help Desk at Tulsa.helpdesk@okstate.edu regarding any items you suspect may contain PCBs.

The following equipment should be given particular attention during your move:

Large Batteries, Power Supplies	Acid
Autoclaves, Ovens, Furnaces, Gloves, Incubators, Fume Hoods, Lab Bench Tops	Asbestos, water
Internal Cylinders, Ampoules, Canisters	Compressed Gases
Manometers, Thermometers, Barometers, Silent Switches	Mercury
High Voltage Systems, Power Supplies, Microscope Immersion Oils, Capacitors, Transformers, Hydraulic Fluid	PCBs
Degreasing Equipment	Solvents

When equipment has been decontaminated and prior to moving, the following label should be used:

Principal Investigator:		
Phone:	Old Lab:	New Lab:
This piece of equipment was used with the following:		
__ No Hazardous Materials were used in this equipment		
__ Biological:		
__ Chemical:		
__ Radiation:		
__ Contained PCBs	__ Other:	
Decontaminated with:		
By:		Date:
REMOVE THIS LABEL BEFORE REUSING EQUIPMENT		

Handling Hazardous Materials at the New Location

Chemical Storage Guidelines

Incompatible materials need to be segregated and stored separately in compatible groups. The guidelines below outline some basics of chemical storage. Hazard classification information helps in identifying storage groups; however, be aware that there are many materials in the same basic class that have specific incompatibilities. Check the "Chemical Compatibility Storage Guide" in Appendix 1 for examples of chemicals in the various compatibility groups.

- Do not store chemicals alphabetically, except within a hazard class.
- Segregate chemicals by hazard class.
- Pay attention to specific chemical incompatibilities. Reference the Safety Data Sheet.
- Keep flammables by themselves in approved storage cans or cabinets.
- Keep acids away from bases. (May use secondary containers to separate, preferably in separate cabinets)
- Separate organics from inorganics.
- Store oxidizers away from flammables.
- Store strong oxidizers away from potential sources of fuel such as paper or cardboard packaging. Oxidizers are very reactive, provide secondary containment where possible.
- Provide as much physical separation as possible between classes.
- Radioactive materials should be properly labeled and stored as a group.
- Biohazards should be properly labeled and stored together as a group.

How to Determine Hazard Classes

Reference materials, such as Safety Data Sheets (SDSs), the "Merck Index", or browser searches can be used to determine hazard information.

Several chemical manufacturers are identifying the storage class of the chemicals by color coding the labels. There are 5 main groups, and several sub-groups. The main storage groups are:

RED:	Flammable. Store in an area segregated for flammables.
WHITE:	Corrosive. May harm skin, eyes, mucous membranes. Store away from red, yellow, and blue coded chemicals.
YELLOW:	Reactive and Oxidizer. May react violently with air, water or other substances. Store separately from flammables and combustibles.
BLUE:	Health Hazard. Toxic if inhaled, ingested, or absorbed through the skin. Store in secure area.
GRAY, GREEN or ORANGE:	Presents no more than a moderate issue. General storage.

Storage Areas

- Store large bottles and containers close to the floor.
- Store acids and caustics below eye level.
- Moveable shelves should be bolted to the wall.
- Shelves should have closed doors, lips, or restraining cords to prevent bottles from falling.
- Storage areas should be well lit, properly ventilated and have an even temperature.
- Use secondary containment for spill containment where needed.
- Keep an appropriate spill kit nearby.

Storage of Flammable Liquids

Do not store more than 25 gallons of flammable liquid (count the new material, material in use and the waste material) in any lab. Use approved flammable storage cabinets whenever possible, and when you must have more than 25 gallons of flammable liquid. Do not remove the vent cover from the flammable storage cabinet.

Biohazard and Particularly Hazardous Storage (PHS)

Access doors to regulated laboratories and storage areas inside of laboratories containing biohazards and PHSs (carcinogens, highly toxic and/or reproductive hazards) must be posted with warning signs indicating the hazards.

After You Move

New Area Checklist

Emergency Equipment

__ Are the emergency eye wash and shower working and accessible within 100 feet (or 10 seconds) of the lab work areas?
__ Is the emergency eye wash scheduled to be tested once a week for 3 minutes?
__ Are fire extinguishers accessible and mounted near the exit door?
__ Are appropriate spill kits available and accessible?

Chemical Storage

__ Are flammables properly stored?
__ Are chemicals segregated by hazard class?
__ Are corrosive materials stored in low cabinets/shelves below waist level?
__ Do liquids in the hood or near the sink have secondary containment?
__ Are there designated areas for collecting and segregating unwanted chemicals for the LSC to pick up?

Radioactive Material Storage

__ Is the material properly stored?
__ Are radioactive labels properly posted on cabinets, hoods and refrigerators where material is located?
__ Is the laboratory door properly labeled? ("Caution – Radioactive Material")
__ Is the "Emergency Procedures" sign posted?
__ Are the materials properly secured when not attended (locked cabinet or room)?

General Laboratory Conditions

__ Are all surfaces including drawers, shelves in old laboratory cleaned with soap and water or appropriate cleanser?
__ Are absorbent pads placed where needed in new laboratory?
__ Are hazardous work areas posted with current hazard information (e.g., biohazards, carcinogens, highly toxic, reproductive toxins, radiation, lasers, UV light) and current Principal Investigator contact information (on the door)?
__ Are the fume hoods working properly and have a current certification?
__ Have biological safety cabinets been certified for proper operation?
__ Are compressed gas cylinders properly secured?
__ Are proper disposal containers available for materials such as sharps, needles, broken glass, etc.?
__ Is there nothing stored within 18-inches of the ceiling with sprinklers or 24-inches without sprinklers (interferes with fire sprinklers)?
__ Is there a minimum of 24-inch clearance in the aisles?
__ Is there a minimum of 36-inch clearance in passageways (direct emergency exit-way?
__ Are heavy or glass items stored low?
__ Are tall pieces of equipment seismically secured?
__ Are all toxic gases stored in a mechanically ventilated area such as a toxic gas cabinet or fume hood?
__ Are all applicable items on the Laboratory Safety Inspection Checklist in place in the new laboratory?

Appendix 1

Chemical Compatibility Guide for Chemical Pick-Up

It is important to properly package unwanted hazardous materials according to the segregation procedures listed below. Mixing incompatible chemicals can result in a fire, explosion, heat generation, or toxic or flammable gas. Contact the LSC if you have any questions on packaging your unwanted hazardous materials.

Steps for Packaging Hazardous Materials for Pick-Up
Step 1 – Segregate organics from inorganics
Step 2 – Segregate solids from liquids
Step 3 – Further segregate materials into the following groups before packaging into boxes. Do not mix different groups in the same box!

Material Group	Definitions and Examples
1. Flammable and Combustible Liquids:	Materials with a flash point less than 200° F
2. Corrosive Acids:	Materials with a pH<3
3. Corrosive Bases:	Materials with a pH>12
4. Flammable Solids:	Solids which may catch fire due to friction during transportation
5. Oxidizers:	Materials that may cause or enhance the combustion of other materials
6. Poisons:	Materials which are toxic, but not flammable, corrosive, oxidizing or reactive
7. Cyanides:	Materials if in contact with corrosives may generate cyanide gas
8. Peroxide Formers:	May form shock-sensitive explosives, e.g., ethyl ether (see OSU-CHS Chemical Hygiene Manual, Appendix C, Section III)
9. Water Reactives:	Materials that emit toxic fumes or catch fire when in contact with water
10. Organic Peroxides:	Organic materials such as benzoyl peroxide, methyl ethyl ketone peroxide, etc. May create explosives or cause chemical burns
11. Explosives:	Dry picric acid (<10% moisture content), out-of-date peroxide formers, contact LSC immediately for removal by appropriate authorities; heat and shock sensitive materials

Remember to label all containers with chemical names and to package them according to chemical hygiene guidelines.

Appendix 2

Materials Packing List (MPL)

Instructions

- *Item Number:* Mark each item (bottle/container) being packed with a number corresponding to the item number on the MPL.
- *Proper Chemical Description:* Provide a complete description of the material. Do not use chemical formulas. For mixtures, please list hazardous components and percent by weight.
- *Number of Containers:* Total number of containers of that chemical.
- *Container Size:* Container volume or weight capacity. P- pounds, G- gallons, gm- grams, L- liters, ml- milliliters.
- *Container Type:* G- glass bottle, P- plastic bottle, M- metal can, C- cardboard, B- bag, W- wood, D-drum or other description.
- *State:* Physical state, S- solid, L- liquid, G- gas.
- *Condition of Material:* N- new material, never opened, O- opened, usable material, U- used or out of date material.

Remember:

- ✓ Please print neatly or type
- ✓ Disposal of unknown chemicals is expensive. Please make every effort to identify unknowns.
- ✓ Use complete chemical names
- ✓ Package materials properly. Boxes should weigh less than 50 pounds and contain no more than 4 liter bottles. Place bottles upright and cushion all breakable containers.
- ✓ Send completed packing lists to LSC. These lists will help if there is a chemical spill.

Page____of ____
Box No. _____

Materials Packing List

WARNING: Do not package incompatible chemicals in the same box. See the material segregation instructions in the Move Manual.
Instructions: Use a separate MPL for each box of materials. Each item (bottle, can, bag, etc.) must be listed separately. Use additional lines if needed. Send a copy of the completed MPL to the Laboratory Safety Coordinator before the move.

P.I. _____ Dept. _____ Contact_____Ph._____Date: _____

Building_____New Room _____ Location in New Lab_____Notes _____

Item No.	Proper Chemical Description Do Not Use Abbreviations, Trade Names, or Chemical Formulas	Number of Containers	Container Size	Type (ml, gal)	State (S, L, G)	Condition (N, O, U)
1						
Prepared By:						

Appendix 2

Move Completion

The following information is required:

Principal Investigator:	Department:	Building/Room #:
Laboratory Vacating Date:		

The following was/were used/generated in this laboratory (check all that apply):

- ☐ Hazardous chemicals
- ☐ Hazardous waste (including medical)
- ☐ Radioactive materials
- ☐ Controlled substances
- ☐ Biohazards

The applicable procedures listed in this document have been completed. The laboratory has been properly emptied and/or decontaminated and prepared for re-occupation.

_____ _____

Principal Investigator Date

_____ _____

Department Chair Date

_____ _____

Laboratory Safety Coordinator Date