FIU | FLORIDA INTERNATIONAL UNIVERSITY

Environmental Health & Safety

FIU Laboratory Relocation Guide

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Environmental Health & Safety

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GENERAL GUIDELINES

INTRODUCTION

Upon relocation or termination of project or employment, regardless of the reason, it is important that the laboratory is left in a

The information in this packet is intended to guide you through this process. Forms and documents required to assure that this process is carried out safely and in compliance with regulatory requirements are also provided clean and safe condition for maintenance and construction crews, or the next occupants...

SCOPE

This Laboratory Relocation Guide applies to the relocation of hazardous substances within the same building, or from one building to another on the same campus. It *does not cover* the transportation of hazardous substances on public roads and highways.

The transportation of hazardous substances on public roads and highways is regulated by the U.S. Department of Transportation Hazardous Materials Regulations. The Department of Environmental Health & Safety strongly recommends contracting the services of an authorized hazardous substances transporter when the need for transportation of hazardous substances on public roads and highways becomes necessary.

Before You Start

Identify the facility move coordinator, the project manager or any other individuals whose decisions regarding your relocation are likely to affect you.

Contact Information:

Facilities, Construction – Moves involving renovation of space

- (305) 348-4011

Facilities Management – Move Coordinator – General Items

- (305) 348-4600

Environmental Health & Safety Lab Safety Team Lead – All Labs

- (305) 348-2621, http://ehs.fiu.edu

Academic Space Management

- (305) 348-1762

Property Control - For surplus items

- (305) 348-2167

Overview of the Process:

Prepare a schedule of events with due dates and the contact information for the various persons involved in helping you coordinate your move.

STEPS	WHAT TO DO	WHY WE ASK YOU TO DO IT
1	Complete Lab Characterization Survey (Appendix 1) for the "NEW" location you will be occupying and Fax to EH&S at least three weeks before your scheduled move. Special Hazard Materials may require additional time – See specific section of this manual. *Response time 5- 8 working days, however we strive to exceed your expectations*	Knowing the nature of the research you do allows EH&S to advise you and Facilities Management on necessary safety & compliance components that should be in place to assure you are able to start off on the right foot at your new location.
2	As necessary complete the Facilities Construction - Minor Projects Request Form and identify whether there are Hazardous Materials in the locations to be renovated.	By checking this box FM will be notified that they should consult with EH&S so that we may support the safe entry and access of workers in the area, and provide input based on the Lab Characterization information you provided and to which we responded
3	Obtain approvals on space and budget as required	Puts everyone on the same page and avoids delays
4	Monitor the progress of your planned relocation and begin the planning process for your move from your existing location: 1. Decide what to Discard 2. What to Relocate 3. What to Leave behind	Hazardous materials or specialized equipment require special handling. Equipment may need to be decontaminated, and clearance issued. Labs may need to be scheduled for "Clearance Inspections"

5	Complete the applicable forms and submit paperwork to the identified department: 1. Lab Close-out Activities Checklist (Appendix 2) - EH&S Staff 2. Hazardous Waste Disposal 1. Biomedical/Biohazardous Waste Disposal/Change in Services Request Form (Appendix 2c) - EH&S 2. Request for Hazardous Waste Pick-up For Disposal Form (Appendix 2d) EH&S 3. Radioactive Waste Pick-up Request (Appendix 2e) – EH&S 3. Property Control - Asset Transfer Form 4. Property Control - Request for Surplus / Pick-Up of Equipment Form 5. Special Hazard Materials Notifications and Registration with EH&S for New Location: 1. Compressed Gas Cylinder Relocation Inventory Notification Form (Appendix 3b) – EH&S 2. Cryogenic Liquid Cylinder and Dewar Inventory Notification Form (Appendix 3c) – EH&S 3. Biological Materials Inventory Relocation Registration Form Registration (Appendix 3d) – EH&S 4. Installation of Biosafety Cabinets Registration Form (Appendix 3e) – EH&S 5. Relocation of Radioactive Materials / Radiation Producing Devices Registration Form (Appendix 3f) – EH&S 6. Relocation of LASER Devices Registration Form (Appendix 3g) – EH&S 7. Biohazardous Waste Generator	Lab close out assures the space is safe and ready for renovation or occupancy by new researchers. Various regulations and FIU policy (Special Hazard Materials) require the exercise of appropriate levels of accountability and responsibility. Completing the forms and following the process allows FIU to standardize its procedures for compliance and helps to assure smooth relocation and occupancy. Registration forms must be submitted to EH&S as specific regulated area follow-up is required for these items

	Registration (Appendix 2c) _ EH&S 8. Nano Materials Users Notification Form (Appendix 3h) – EH&S 9. Relocation of Controlled Substances Registration Form (Appendix 3i) – EH&S	

Visualize and organize your move in the following phases (This guidance document provides health and safety and compliance guidelines applicable to the Preparation of New Location and Vacating Existing Location, only. Bear in mind the Preplanning and Approval phase will likely include budget consideration for some safety infrastructure.

- ☑ Preplanning & Approvals
- ☑ Preparation of New Location
- ☑ Vacating Existing Location

As appropriate, apply these general guidelines:

- Read the relevant sections of this guide before you begin to pack and move.
- Contact Environmental Health & Safety with any safety related concerns
- Plan for appropriate level of security during relocation activities.
- Remain cognizant of the need to maintain clear hallways and egress routes.
- Allow yourself enough time to get things done properly
- If you are unsure about anything, ASK!

- *Do not overexert yourself. Get help to move or lift heavy or oversized loads. If you ignore or forget your own limitations and do overexert and injure yourself – contact the Workers' Compensation Program Coordinator at 305.348.7960 or Cruzma@fiu.edu.*
  - Assure everything scheduled to be relocated is properly labeled
  - Empty chemical containers must be defaced – an "X" through the label is OK.
  - Do not work with acutely hazardous materials while you are alone or when no one is aware of your activities.
  - Always pack and move hazardous materials on weekdays during regular working hours, when there is prompt assistance readily available
  - Always wear the appropriate protective equipment and use proper safety equipment.
  - **DO NOT** leave chemicals, gases or any other Special Hazard Materials behind.

PLANNING YOUR MOVE

About one month before the date scheduled date for your move, inventory existing chemicals and equipment in your laboratory and determine what you will do with **each** item:

ITEMS TO BE:

1. RELOCATED

- Prepare a list of items/equipment you plan to relocate.
- Identify exact location where these items will be placed at the new location.

  Remember to allow 18" from the ceiling for all stored items and to allow clear access to fire extinguishers, pull stations, safety showers & eye wash stations, emergency spills kits, first aid stations and emergency supplies, and egress from the lab.
- Assure that appropriate electrical outlets are available at the locations where they are required. (*Use of extension cords, as permanent wiring is a fire code violation*)
- Clean and decontaminate items that will be handled by movers.
- Clean external surfaces of all items/equipment to prevent the spread of contamination.
- Label each item/container identifying new location. (Building, room number, owner name and contact numbers (Appendix 2f).
- Pack items appropriately. Chemicals should be properly packed to assure that a sufficient quantity of absorbent material is in place to prevent leakage in case of a spill. Check and make sure that the absorbent used is compatible with all chemicals in the container.
- Special arrangement must be made for the transportation of Hazardous, Biohazardous, Radioactive materials or Controlled Substances. Security of all these materials must be ensured at all times.
- Some equipment is particularly sensitive to vibration - make special arrangements for these items.

2. DISCARDED & SURPLUSSED

- Prepare a list of items/equipment you plan to discard.
- Clean and decontaminate each item, to assure it is free from contamination and label as "clean". Contact EH&S for confirmation or to assist you with contracting for professional decontamination services (Appendices 2a & 2b).
- Assure all hazardous waste is properly labeled - Check the FIU Lab Safety Manual/ Radiation Safety Manual/Biosafety Manual.

- Complete the hazardous waste/radioactive waste/biological waste pick-up request form for waste disposal, and submit to EH&S (Appendices 2c, 2d, & 2e).
- Deface labels of empty hazardous waste containers before discarding any item in regular trash
- **DO NOT** place hazardous materials of any kind in regular trash. Contact EH&S before surplussing any Special Hazardous Material (stock solutions of radioactive materials, radioactive or other hazardous materials in instruments, radiation producing devices, laser devices, hazardous/biohazardous materials, etc.).
- Items bearing FIU Tags that you would like to discard must be disposed of through the Property Control Department by sending them a completed Property Control - Request for Surplus/Pick-Up Equipment Form.
- **DO NOT** abandon items by simply leaving them behind, at the loading dock or in the hallways
- **DO NOT** place items in hallways and corridors to await pick-up. You must schedule your pick-up with Property Control well in advance of your scheduled move date.
- Deface or remove stickers such as radioactive, biohazardous, etc., after equipment has been declared free of contamination by EH&S.
- Label each item and identify it as "**SURPLUS**".
- Schedule pick-up to be completed **before** you separate from the University, terminate the project, or the new occupant is scheduled to move in.
- **DO NOT** leave items in the hallway or on loading docks.

3. LEFT IN PLACE

- Prepare list of equipment and supplies to be left behind.
- Coordinate with appropriate departments for transfer of ownership where necessary (Property Control - Asset Transfer Form).
- Clean and decontaminate each item and label as "clean". Download a copy of the clearance sticker (Appendix 2b) from the EH&S web site (**http://ehs.fiu.edu**) and attach to the item.
- Contact EH&S at least 2 weeks to a month early if you are leaving any Special Hazardous Materials behind.

PERSONAL SAFETY - ERGONOMIC TIPS

Although you may not be involved in actually moving the contents of your lab, you may be packing boxes, moving items out of the way, and stretching over and around objects.
Follow these guidelines to help prevent injuries:

- Move as close to the object as possible, even light objects lifted at arm's length, from the body, can strain your neck and back, particularly if done repeatedly.
- Twisting while reaching, lifting, or depositing an object is the main cause of back injury. Face the object squarely, whether it is a book on a shelf, a reagent bottle, or small piece of equipment.
- Lift with your legs, NOT your back.
- If an object is too heavy to move, get more help!
- **DO NOT** stand on chairs, desks, or other piece of furniture to reach objects above shoulder level.
- Use an approved stepladder to bring objects down from below shoulder height.
- Use hand trucks and carts where necessary.
    - When transporting compressed gas/liquid cylinders only use hand trucks specifically designed for that purpose (see Transportation of Cylinders and Cryogenic Containers)
- **Never** pick up a cylinder by its valve stem or cap and never drag or roll.
- Rest periodically and stay hydrated.
- Report all injuries as soon as possible; submit the Workers Compensation Injury/Accident Report. If you have any questions regarding this form or other related information, call Worker's Compensation at (305) 348-7960.

THE MOVE

TRANSPORTATION OF CYLINDERS AND CRYOGENIC LIQUID CONTAINERS

If you do not have access to an appropriate compressed gas/liquid cylinder hand truck or cryogenic liquid container 4 wheeled flatbed cart a commercial mover or chemical supplier company representative must be contacted to relocate these materials. If you have the required training (Compressed Gases/Liquids Safety training, EHS approved written safe moving plan, appropriate moving equipment, required personnel protective equipment for all persons involved in the move) and follow the guidelines listed below, you may move compressed gas/liquid cylinders and cryogenic liquid containers *ONLY* between rooms on the same floor.

Compressed Gas / Liquid Cylinders

- Check the MSDS before attempting to move a compressed gas cylinder.
- Assure compressed gas cylinders are not leaking prior to moving them.
- Make sure all required personnel protective equipment is being worn by persons involved in moving the cylinder.
- NEVER MOVE A CYLINDER WITH A REGULATOR STILL CONNECTED.
- NEVER MOVE A CYLINDER IF THE VALVE CAP IS NOT IN PLACE AND TIGHTENED.
- Empty cylinders must be labeled "**EMPTY**"; arrangements must be made to return the cylinder to the manufacturer. Do not move an empty cylinder to a new location.
- Secure the label with packaging tape or wire to prevent it from falling off.
- Compressed gas cylinders must be moved by a cylinder hand truck with the cylinder appropriately secured with a strap or chain in an upright position (see hand truck figure in Equipment move section below).

- Never move a cylinder by the valve stem or cap.
- **Never** move a cylinder by rolling it across the floor.
- Never drop cylinders or bang them against each other or another object.
- Report all suspected leaks immediately - if the material is highly toxic evacuate everyone from the area.
- Leaking cylinders should be placed in a fume hood (with air exhausted at the proper velocity and/or with the hood sash closed as much as possible).
- Do not leave an unsecured cylinder (upright orientation secured from falling by a strap or chain) in the laboratory.
- Toxic compressed gas cylinders must be, and extremely flammable compressed cylinders should be, used only in ventilated cylinder storage cabinets.

Cryogenic Liquid Containers

The main concerns usually identified with the handling and use of cryogenic liquids and gases are burns to the skin and eyes from spills during contents transfer between storage vessels, transport between rooms and material use. Cryogenic liquid containers can also pose an asphyxiate hazard in confined spaces if improperly stored or during moves in elevators because

- they are under pressure.
- Periodically release pressurized gases to the general environment to safely maintain the container integrity and maximize storage quantity.
- most are also asphyxiates which can displace room oxygen levels
- there thermal rate of expansion for cryogens can range from 600 – 800 times that of air
- the amount of cryogenic liquid and gas within the cylinder can be much greater than a Dewar

For these reasons the following precautions are required when moving cryogenic liquid containers

- Cryogenic liquid containers which are going to be moved between floors or buildings must **ONLY** be done by the chemical supplier or a qualified commercial mover.
- Cryogenic liquid containers which are to be moved between rooms on the same floor of a building must be done by the chemical supplier, qualified commercial mover or properly trained personnel. Properly trained personnel must
    - Read and understand the hazards and safety precautions explained in the suppliers Safety Data Sheet for the cryogen before attempting to move.
    - Have completed a cryogenic safety training course.
    - Have a written EHS approved Move Plan, prepared by the PI or Lab Manager, which has been reviewed and signed by all persons involved.

- Have all required moving equipment (EHS approved 4 wheeled flatbed cart, or equivalent).
- Have enough required personnel protective equipment for all persons involved in the move.
  - Chemical goggles
  - Face shield
  - Laboratory coat, or cryogenic or leather apron that extends below knee level
  - Loose fitting insulated cryogenic or leather gloves (gauntlet or elbow length)
  - Long sleeve shirt
  - Long pants with no cuffs that extend over the shoe tops (NO SHORTS, or SKIRTS)
  - Close leather shoes (NO SANDLES or shoes with surface openings).

- Written inspect records for all required cryogenic trucks, carts and other appropriate handling device which are to be used and insure they are in good working order.
- Shut off all gas and liquid valves and disconnect all hoses (pressure relief valves and rupture disks must never be closed, plugged or obstructed).
- Do not move the cryogenic liquid container by rolling it on its lower rim.
- If using a cryogenic cylinder flatbed cart (4 wheeled) where the cylinder is not permanently secured in place, use strap(s) to secure the container to the truck or cart frame.
- Keep the cryogenic liquid upright at all times, except for minor tilting of the container onto an appropriate 4 wheeled cart during the move.
- Always "PUSH" the container (DON'T PULL) as pushing reduces the chances of the cylinder falling on someone.
- If the cryogen container must be transported on by elevator, the chemical supplier or a qualified commercial mover must be used
- When at the final destination the cryogenic liquid containers must be placed in an area that
  - Allows adequate unobstructed aisle width for occupants to meet life safety requirements (32 inches)
  - Has adequate ventilation to prevent accidental accumulation of asphyxiate gases to take place in the room.
    - Contact EH&S to do an evaluation, if the room conditions are deemed inadequate for the cryogenic container size to be used or stored in the room a fully functional room oxygen sensor and alarm system may be needed.

- Follow all equipment precautions and procedures as identified for the Cryogenic Liquid Container.

Non-Pressurized Portable Cryogenic Material Containers (Dewars)

The main hazard associated Dewar flasks is burns to the skin and eyes from cryogenic liquid and gas spills during their filling, transport, and use. Following are the minimum requirements for their movement between rooms, floors or buildings.

- Read the MSDS for the cryogenic material, to become familiar with the material hazards and controls, before attempting to move Dewar containing cryogenic material.
- A minimum of two people must be used to transport Dewars containing cryogenic liquids (each wearing full personal protective equipment as described below)
- Make sure all required personnel protective equipment is being properly worn by the individuals involved in the move (chemical splash goggles, face-shields, laboratory coat, long sleeve shirt, long pants without cuffs, loose fitting insulated or cryogenic gloves, and closed toed leather shoes).
- If the Dewar has two handles each person must use one during the move.
- Make sure the lid and handles to the Dewar is secure during the move and, if applicable, wheels are functioning properly.
- Stairways shall not be used to transport Dewars containing cryogenic liquids between floors.
- Dewars containing cryogenic liquid will not be transported in elevators with members of the public. Schedule use for non-peak hours, or make arrangements to restrict elevator use during transport

- Precautions for the move of Dewars, unpressurized flasks, containing cryogenic materials should follow those outlined in the section for Cryogenic Liquid Containers.

EQUIPMENT DECONTAMINATION

All lab equipment that could be contaminated with radioactive, chemical or biohazardous materials needs to be checked and decontaminated if the equipment is to be moved to a new location by movers or left in the present location. *See the relevant section of this manual for additional guidelines.*

- Any equipment scheduled for repairs must be checked and decontaminated before maintenance personnel conduct any work.

- Equipment decontamination must be documented using the "Laboratory Equipment Decontamination Form" (Appendix 2a).

- The form must be completely filled out and signed by personnel conducting the decontamination and/or the Supervisor/PI responsible.

- A copy of the form must be faxed to EH&S at (305) 348-3574 and another copy must be posted on the decontaminated equipment once the decontamination is complete.

GENERAL TRASH

To protect custodians from injury and prevent erroneous reports of illegal hazardous waste disposal, be careful about what you put in the general trash.

- Only non-hazardous materials should go in the trash.

- Before general disposing of a non-hazardous substance that might be mistaken for a laboratory chemical by a custodian or others, place the substance in a plastic bag and label the bag so that the contents are identified. Or, mark or deface the label on the container.

- Do not put broken glass in the regular trash, unless they are properly secured in a broken glass container box.

- Laboratories must be equipped with broken glass containers for the disposal and removal of broken glass.

- **Do not** place hypodermic needles and syringes in the common trash. Place them in a "sharps" container and deposit it in a biohazardous waste disposal container.

- **Under no circumstances may medical waste, hazardous waste, radioactive waste or containers labeled with the international biohazard or radioactive symbol or the**

words "medical waste", "biohazard", "infectious", "sharps waste", or similar, be disposed of in the regular trash.

LABORATORY CLOSE OUT

Remember that University workers and non-University contractors will be working in your vacated lab space. These workers are not familiar with the hazards of the materials or equipment in you laboratory and, equally important; do not know how to protect themselves.

It remains the vacating department's responsibility to ensure that all chemicals, biohazardous materials, radioactive materials/radiation producing devices, DEA controlled substances, laser devices and other chemical and physical hazards (e.g., glassware, equipment, sharps waste, items with radiation warning labels, etc.) are removed from the lab. Under no circumstances should chemicals, biohazardous materials, radioactive materials, laser devices or DEA controlled substances be left in the lab unless prior arrangements have been made with EH&S. It is also important that the office, laboratory areas, and equipment are thoroughly decontaminated and certified free from contamination before the user releases the areas/equipment for use by any other person.

Refer to the FIU Chemical Hygiene Plan Section 6.4 for the proper laboratory closeout procedure. For a copy of the "Laboratory Closeout Activity Checklist" (Appendix 2).

IMPORTANT!!! Close out inspections must be scheduled with EH&S (305)348-2621 at least one month to two weeks PRIOR to the move date.

Biohazardous Materials

- **Packing Guidelines**
- **Transportation**
- **Biohazardous Waste Disposal**
  - **Packing and Inventory**
  - **Special Pick-Up**
  - **Change in service**

BIOHAZARDOUS MATERIALS

PACKING GUIDELINES

The following are the packing requirements for biohazardous materials:

- Refer to Section 12.0 in the FIU Biosafety Manual. Follow the packaging requirements stipulated in OSHA 29 CFR 1910.1030, and the IATA Infectious Substances Shipping Guidelines.
- Wear personal protection appropriate for the material being handled.
- The biohazardous material must be contained in a closed, leak proof, unbreakable primary container.
- The primary container must be contained within a secondary container that is able to contain leaks should a spill occur.
- Both containers must be contained within an opaque plastic or cardboard box, packed with sufficient absorbent material should both the primary and secondary containers fail.
- The box must be labeled with the Principal Investigator's (PI's) name, laboratory address, and 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 (BSL-1, BSL-2, etc.) must be just under the lid or flap so that it will be immediately visible to any person opening the box. Refer to Section 4.0 of the FIU Biosafety Manual for information on biosafety levels.
- Remove your gloves and wash your hands before you leave the lad. Do not contaminate door handles and elevator buttons with dirty gloves.
- Infectious materials should not be transported in elevators with members of the public. Schedule use for non-peak hours.
- Infectious or biohazardous materials must **never** be left in hallways unattended

TRANSPORTATION

Anticipate delays or disruptions to the "best laid plans". Assure cultures and materials likely to be affected by temperature changes are appropriately packaged in a cooler and/or dry ice. **Check to assure that refrigeration is in place and working at your new location** before transporting materials there.

BIOHAZARDOUS WASTE DISPOSAL

Packing and Inventory

Biological materials and potentially biohazardous materials (including all etiologic agents, microbial agents, toxins, human and animal tissues, blood and body fluids, etc.) that are to be disposed must be inventoried and packed by trained and responsible individuals.

Biomedical waste must be properly labeled and packed to prevent spills or damage during transport. The packed boxes should also be labeled. Labeling and packing must be according to F.A.C. 64E-16. Refer to FIU Biomedical Waste Plan.

Special Pick-Up

Registered generators of biohazardous waste are scheduled for periodic pickup services by the approved biohazardous waste disposal company. If a special pick-up is required for your lab, please try to provide the EH&S Biosafety Officer with as much notice as possible.

Change in Service

Generators of biohazardous waste must contact EH&S to request the discontinuation of services at the present location and the establishment of services to the new location see Appendix 2c for the Change in Service Request Form. **Please note that this change of service location will not happen unless the completed form is received by EH&S** or the required information is provided to EH&S by calling 305-348-3387 or 305-348-2621.

CHEMICALS

- **General Information**
- **Packing Guidelines**
- **Waste Disposal**

The chemical transportation cart shown above shows some of the l features you should look for when selecting a cart to transport chemicals from one lab, across relatively short distances, to another lab.

CHEMICALS

GENERAL INFORMATION

- The general rules on segregation of chemicals must be applied when packing chemicals. 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 proper segregated storage in your new lab. Appendix S **"Chemical Incompatibility**", in the FIU Chemical Hygiene Plan is your reference, also use the MSDS for additional information.
- Uncontaminated chemicals that have not yet reached their expiration date and which are no longer needed should be made available for the FIU Chemical Pharmacy, contact FIU EH&S at 72621 for assistance. This program allows other University researchers/departments access to the information regarding the availability of surplus chemicals in inventory.
- Dispose of outdated chemicals. Chemicals that are outdated should be packaged and labeled for pickup and disposal. Complete a hazardous waste pick-up form and submit directly to EH&S at least 1 month to 2 weeks prior to the scheduled move date. Refer to FIU Chemical Hygiene Plan Section 9.5 for labeling instructions.
- Label and identify hazards of all known chemicals and compounds. Containers with missing or illegible labels (must be printed in English NOT chemical symbols) should be relabeled. Re-label chemical containers only if you are sure of their identity. If you are unsure please make your best effort to find out. Note that EH&S will arrange for a chemical analysis. Payment will be by ID transfer to EH&S.
- Replace containers and caps that are in poor condition and place in secondary container. Failure to do so can also present a significant hazard to personnel assigned to handle your waste.
- Check corners, cubbyholes and obscure out-of-the-way places where chemicals might have been hoarded. Many laboratories have adopted chemicals that must be identified and disposed of before moving.
- Primary and secondary chemical containers being transported between labs, floors, storage rooms or buildings must be in secondary containment
    - On a chemical transportation cart with spill trays or
    - in a chemically compatible container with a handle and screw or snap on lid
- Remember to update your laboratory chemical inventory information. This is essential for your safety and compliance with various regulations.
- Keep your chemical inventory current.

PACKING GUIDELINES

Supplies:
The following supplies are most typically required to facilitate a chemical move:

- 4 x 4 liters compartmentalized boxes
- 20 gallon polyethylene drums with sealable screw tops
- 1 and 5-gallon pails with snap or screw tight lid (secondary container)
- Secondary spill containment (tray, buckets, jackets)
- Small moving boxes
- Label tape and tape guns
- Moving labels
- Zip lock bags
- Shredded paper (packing material)
- Kitty litter
- Markers
- Duct tape or packing tape
- Spill Kit (appropriate for the material(s) being moved
- First Aid Kit
- A proper moving cart

GLOVES

Use chemical resistant gloves. Make sure you have the right type of gloves for the chemicals with which you work.

SAFETY GLASSES, CHEMICAL SPLASH GOGGLES OR FACE SHIELD

Use safety glasses or chemical splash goggles whenever there is a risk of chemicals getting into your eyes.

CHEMICAL LABORATORY COAT

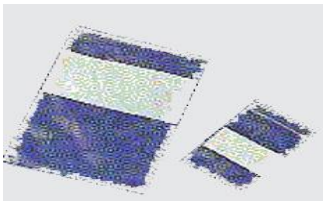
Where at all times when handling chemicals (packaging, transporting and un-packaging)

CLOSE TOED SHOES

DO NOT wear sandals or shoes with other surface openings when handling chemicals

PEN & LABELS

USE A PERMANENT MARKING PEN FOR LABELING, CONTAINERS, BOXES AND HAZARDOUS WASTE.



BAGS

Use zip lock bags for containing small spill cleanup items or for small containers that are difficult to label.

First Aid Kit

First Aid Kit must be readily available in all areas where chemicals will be handled and transported during the move.

CHEMICAL SPILL KIT

The spill cleanup kit must be readily available during the move process and must be of adequate capacity and type for the material being moved

Chemical Transportation Cart

Use to transport boxes containing chemicals individual chemical containers or chemical containers or equipment.

SECONDARY SPILL CONTAINMENT TRAY

Containers on carts must be placed inside secondary spill containers during the move. The containers must be large enough to contain 110% of the liquid in the largest container and must be chemically compatible with all materials within it

SECONDARY SPILL CONTAINMENT PAILS AND JACKETS

Must be used if transporting individual chemical containers between labs, floors or buildings. Must be chemically compatible with material being transported, have a handle and a screw top lid securely in place at all times during the move. An adequate amount and appropriate type of spill absorbent must be in the bucket in case of a leak or spill

Pre-Packing Precautions:

- Have all appropriate spill clean-up materials on hand before you begin packing. Know the location of the spill kits and the clean up materials before you get started.
- Wear personal protection equipment appropriate for the material being handled. Consult the MSDS or contact FIU EH&S for assistance Ext. 72621.
- Label chemical containers according to Section 3.1 of the FIU Chemical Hygiene Plan Manual.
- Assure containers are not likely to leak in transport. Do not package containers that may leak during transport.
- Separate chemicals from radioactive materials and from biohazardous materials.
- Separate chemical according to categories to prevent incompatibles from being close to each other. Refer to Appendix S of the FIU Chemical Hygiene Plan for incompatibility information.
- The primary chemical container must be contained in a closed, leak proof, unbreakable primary container.
- The primary container must be contained within a secondary container of sufficient volume and appropriate absorbent material to contain a leak should a spill occur.
- 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. Assure secondary containment is compatible with the chemicals being transported in them.
- The container or box used for must be labeled with the
    - Principle Investigators Name
    - Laboratory Address
    - Principle Investigators Phone Number (Office, Cell, Lab)
    - Emergency contact to be notified should the box be lost or stolen.
- Remove your gloves and wash your hands before you leave the lab. Do not contaminate door handles and elevator buttons with dirty gloves.
- Hazardous materials shall never be left in the hallway unattended.

Procedures

- Check the wheels on carts to assure they rotate smoothly and are unlikely to hitch or buckle during use. If you are using a cart or hand truck - check your path of travel for likely obstructions. When transporting extremely hazardous materials by cart do so with a co-worker and stay clear of heavily traveled areas. If part of your travel route requires the use of an elevator, make sure it is clear of non-essential passengers during transport. Do not use elevators during peak periods.

- Use sturdy boxes and deep trays to pack chemical containers. Cushion the containers to prevent breakage and contain spills using compatible absorbent materials. (Newspaper is often a good cushion because it is absorbent and does not react with most chemicals, **but it is not recommended for oxidizers and 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 bottlenecks or stems to protrude. Boxes that cannot be stacked are not suitable for transport. Boxes must be placed in upright position, **use arrow to indicate direction**. Keep boxes of incompatibles separated from one another before and during transportation.
- Label and number each box as you pack it. EH&S recommends including a list of chemical names (Appendix 2f) for packing List (list of chemicals in the box) to facilitate maintaining a record.
- Label all boxes according to general hazard class (e.g. flammable solid, corrosive acid, radioactive, etc.)
- Maintain a list of box numbers and contents in a separate folder. This will make unpacking easier and keep the box from being misplaced.
- Refrigerated materials need not be boxed together, but should be separated into their hazard class or handled according to their own special requirements.

Prevent Spills

Most chemical spills and accidents that happen during chemical packaging and transport are preventable. Taking the following precautions can help to avoid mishaps.

- Keep bottles from knocking against each other by using plenty of packing material between them inside boxes.
- Put primary and secondary containers inside secondary containment trays that are of adequate size to hold any potential leak of spill and is chemically compatible with the materials being transported.
- If transporting individual chemical containers one at a time they must be placed in chemically compatible bottle jackets or buckets with a handle and screw top lid securely in place at all times during the move. An adequate amount and appropriate type of spill absorbent must be in the bucket in case of a leak or spill.
- Do not lift containers or bottles by the cap.
- Do not try to save yourself addition trips by stacking too many boxes on the carts.
- Do not lift too much. Do not rush.
- When you lift boxes support them from underneath. Do not lift them up by the sides or the box bottoms may split open.
- Use a cart designed to carry the loads you will be transporting.
- Use the elevator when carrying containers not the stairs, however avoid periods of heavy usage such as during class change, etc.

Hazardous Waste Disposal

EH&S picks up unwanted hazardous chemical materials from the laboratories when requested. Hazardous chemical waste must be packaged and labeled according to the guidelines included in Section 9.5 of the FIU Chemical Hygiene Plan.

Generators must complete and sign a "Request for Hazardous Waste Pick up for Disposal" form (Appendix 2d) and send the form to EH&S. Additional forms can be obtained by calling the EH&S office at Ext. 2622 or visiting the EH&S Hazardous Waste web page.

Once the form is received by EH&S, the generator will be contacted to schedule the pick-up.

RADIOACTIVE MATERIALS & RADIATION PRODUCING MACHINES

RADIOACTIVE MATERIALS AND RADIATION PRODUCING MACHINES

VACATING OR RELOCATION OF RADIATION LABORATORY

The responsibilities of the authorized user and the Radiation Safety Officer (RSO) are given below:

Authorized User

- In case where an authorized user wishes to relocate from an authorized radiation use laboratory, written notice of this intention must be provided to the RSO at least 30 days before the planned move.
- Radioactive material/equipment shall not be moved to any location unless the location is an authorized radioactive material use area, and the EH&S department obtains the authorization from the Radiation Control Committee.
- Shall ensure appropriate radiation Warning Signs/Notices/Regulations are posted at the entrance door of the new location.
- Shall assure that appropriate radiation surveys are carried out prior to vacating, relocating or decommissioning a radioactive laboratory. The results of these surveys must be provided to the RSO approximately 8 days prior to the move and after all work has stopped.
- Subsequent to the RSO's inspection, shall assure that any area found to be contaminated is appropriately decontaminated and follow-up notification provided to the RSO.
- Shall assure that all radioactive materials are either appropriately disposed as waste or removed to new location. Contact RSO for guidance.
- Shall make arrangements for the removal of all radioactive waste and radioactive waste containers.
- Shall complete an inventory of all radioactive materials in their control, including generally licensed calibration standards and sealed sources, and shall in consultation with the RSO transfer these materials to another authorized user in the same department or to the RSO.
- Shall, at all times, ensure security of radioactive materials.
- Shall never leave radioactive materials unattended.

RADIATION SAFETY OFFICER

- Shall upon receipt of the results of authorized users' radiation surveys schedule a final walk through with the authorized users of the laboratory.

- Shall conduct a closeout survey, as required by regulations, of the lab areas and generate a permanent decommissioning report for the Department Chair and for the FIU annual ALARA report.
- Shall notify the authorized user if he/she discovers any contamination or radioactive materials as part of the closeout survey. The authorized user is required to perform the required decontamination and notify the RSO before the lab will be released for general use or re-occupancy.
- Shall conduct follow-up close out once decontamination procedure has been completed.
- Shall ensure that an authorized user or RSO himself/herself takes charge of radioactive materials/waste, if the authorized user is leaving FIU.
- Shall ensure radiation warning signs and other notices are removed after the lab is released for unrestricted use.

PACKING

- All liquid samples must be placed in unbreakable plastic bottles and then placed in transparent zip lock bags before placing in a shipping container. The shipping container must be lined with adequate quantity of the absorbent.
- All radioactive materials must be properly labeled. The label should at minimum include the name of the user, name of the isotope, the activity level, the form (solid or liquid), and the radiation level.
- Labels must be placed both on the bottle and the shipping container.
- Each carton that contains radioactive items must be marked such and a list of the contents must be attached to the carton.
- Radiation producing devices shall be appropriately packaged and labeled.

TRANSPORT

- As per State regulation radioactive materials can only be transported by properly trained and authorized personnel.
- Coordinate with the Radiation Safety Officer (RSO) to transfer the materials.
  Note: *The new location must be approved for use of radioactive materials. The RSO must be contacted in advance to obtain this approval which takes approximately 14 days, based on the availability of the Radiation Control Committee.*

WASTE DISPOSAL

The Radiation Safety Officer will pick up waste materials from the laboratories when necessary. Generators must complete and sign a "Request for Radioactive Waste Pick up" form (Appendix

2e) and send it to the RSO. Once the form is received by the RSO the Generator will be contacted to schedule the pick up by the RSO.

Radioactive waste must be packaged and labeled according to the guidelines provided below:

Packing

- Waste containing different isotopes must be packed separately
- Solid and Liquid wastes must be packed separately
- Solid Waste: Solid waste must be packed in containers approved by the RSO and sealed in transparent plastic bags
- Liquid Waste: Liquid Waste must be packed in bottles/jars (primary containers) approved by the RSO and sealed. Bottles/jars should then be placed in plastic bags. The primary containers must be placed in a liquid resistant secondary container with sufficient absorbent material. The containers must be placed such that they do not move during transportation.
- Label the surface of the waste container, which should be visible through the transparent bag. The radiation labels should not be inside the primary container.

Labeling

Labeling of the packages shall be as described in the "Request for Radioactive Waste Pick up" form (Appendix 2e). It shall contain the following information:

- Year (first or second half of the year shall be designated I or II)
- Lab location
- Physical state (liquid or solid)
- Serial number of the package for that half of the year
- Isotope
- Activity in mCi
- Maximum surface dose rate in mR/hr

For example:
2008(I) - OE 307 – Solid – 001 – P32 – 0.01 mCi – 5 mR/hr or
2008(II) - OE 307 – Liquid - 002 – P32 – 0.02 mCi – 2 mR/hr

All materials, including gels, which upon storage may become liquid, shall be packaged as liquids in suitable containers. There must not be any radiation labels inside the package. Pipette tips or sharps, which can pierce through plastic bag, must first be placed in sharp resistant container before placing in plastic bag.

LASER DEVICES

DO NOT MOVE
DO NOT RELOCATE
PRIOR AUTHORIZATION REQUIRED

Some devices are registered with the State by actual room number location. These devices shall not be moved, even temporarily, from their existing location unless prior written notification is provided to the Laser Safety Officer.

Laser Safety Officer (305) 348-0489

LASER DEVICES

- All class 3B* and 4* laser devices are registered with the State Bureau of Radiation Control for a specified lab location. If you are relocating laser devices, you must complete the Relocation of Laser Devices form (Appendix 3g) and contact the Laser Safety Officer (LSO), who will then notify the State of the new location of the laser device. Please contact the LSO at least 2 weeks before you plan to relocate your laser device.

- Arrange with Facilities Management to install electrical power supply(s) for various systems, including "laser on" lighted sign boards for the new location of the laser device using the Minor Projects request form. Remember to check the box for the applicable hazard, e.g., laser. This will alert the Facilities Management Project Manager to coordinate with the LSO, as required.

- Decontaminate the existing lab/equipment/fume hood/ducts of any contaminants (toxic chemicals or laser generated airborne contaminants) and dispose of waste following procedures applicable to the contaminant, and submit reports to the LSO. The LSO will coordinate with other members of the EH&S Lab Safety team to address the other hazards that may exist

- Depending on the sensitivity of the device and the distance of the move, it may be necessary to contract with a company that relocates specialized equipment.

- Once the relocation is complete - take precautions to set up the system so that beams are properly aligned and directed. Make sure to address all safety issues with laser devices, including electrical and chemical safety. All labels and signs should be in place.

- Surplus or transfer of equipment to another department requires the use of the FIU Property Control - Asset Transfer Form. Please check the box for the applicable hazard.

See the FIU Laser Safety Manual Section 11 for information on Laser Classification

DEA CONTROLLED SUBSTANCES

Vacating, decommissioning or relocation of DEA* controlled substances laboratories requires special arrangements and notification prior to initiating any actions in this regard.

Adequate time is required for notification and approval from external agencies – **these approvals are not discretionary**. They are mandatory

DEA Controlled Substances Safety Officer: (305) 348-0489

DEA CONTROLLED SUBSTANCES

VACATING, DECOMMISSIONING OR RELOCATION OF DEA* CONTROLLED SUBSTANCES

The responsibilities of the DEA registrant and the University Controlled Substances Safety Officer (CSSO) are given below *(There are circumstances when the CSSO may serve as the registrant, or the co-registrant for particular permits. Such circumstances **do not** relieve the researcher of the responsibility to comply with all the requirements of the FIU Special Hazard Materials Policy that prescribe security controls, inventory control and general compliance):*

DEA Registrant or Researcher:

- Shall assure that the new location is secure against unauthorized access. The location is capable of being located securely and that a properly installed safe, capable of being locked (21 CFR 1301.71) is available at the new location.
- Shall provide written notification to the CSSO, (Relocation of Controlled Substances form (Appendix 3i), at least 45 days prior to planned relocation or cessation of research work at a specified location.
- Upon receipt or confirmation and release to proceed from the CSSO the registrant/ researcher provides written notification to the DEA, with a copy to the CSSO, then awaits confirmation before initiating the move. A minimum prior notice of 30 days should be provided to the DEA.
- Upon receipt of approval of the new location from the DEA, the Registrant shall apply for new DEA form 222 for the new location. Requesting a new FORM 222 should be done as soon as possible after receiving approval in order to avoid delays in being able to place orders.
- Shall fax copy of DEA response to the CSSO at 305.348.3574
- Shall provide the most current inventory by email to the direct attention of the CSSO. The inventory shall include all controlled substances on each permit, and each schedule present in the lab 5 working days prior to relocation (This inventory will be used to reconcile the inventory that arrives at the new location).
- Shall assure that the controlled substances are properly packaged and transported under their direct supervision and as appropriate, with support from the FIU Public Safety Department.
- Shall decontaminate the existing lab of any controlled substances and dispose of waste following proper procedures and in consultation with the CSSO.

FIU Controlled Substances Safety Officer

- Upon receipt of initial notification of intent to relocate, the CSSO shall conduct a cursory evaluation of the new location to determine if there is security or other issues likely to prevent approval by the DEA.

- Shall respond to the registrant/researcher within 10 working days with recommendations or release to proceed. The CSSO's response shall be copied to the Director of Public Safety and the Associate VP of Facilities Management so that the appropriate levels of security and access controls will be maintained and enforced at the new location.

- Upon receipt of notification regarding inventory the CSSO shall schedule with registrant to conduct post relocation reconciliation of materials, and general inspection of the new lab. This will take place within five working days of the actual relocation.

- Shall provide verbal recommendations at the end of the inspection and follow-up in writing as necessary, within five working days.

- **IMPORTANT!!** Shall assure that the controlled substances are properly and securely locked away from unauthorized access at the new location.
- Obtain and file inventory of the controlled substances.

* U.S. Drug Enforcement Administration

NANOMATERIALS

DO NOT MOVE
DO NOT RELOCATE
PRIOR AUTHORIZATION REQUIRED

Nanotechnology Safety Officer (305) 348-0489

NANOMATERIALS

VACATING, DECOMMISSIONING OR RELOCATION OF NANOMATERIALS

At least 15 days prior to relocation the authorized user shall contact the Nanotechnology Safety Officer (NSO) with information on use of nanomaterials, protocols, location of the new lab and the safety equipment in the lab. The NSO will evaluate the suitability of the lab for the intended use.

The responsibilities of the authorized user and the NSO are given below:

Authorized user or Researcher:

- Shall assure that the new location is secure against unauthorized access. The laboratory is equipped with suitable exhaust system (fume hood, glove box etc.) to prevent release of nanomaterials into the lab or environment.
- Shall provide written notification to the NSO (Relocation of nanomaterials form (Appendix 3h), at least 15 days prior to planned relocation or cessation of research work at a specified location.
- Shall procure personal protective equipment suitable for the research.
- Shall provide the most current inventory of nanomaterials by email to the NSO. Shall assure that the nanomaterials are properly packaged and labelled.
- Shall not put material from nanomaterial-bearing waste streams into the regular trash or down the drain. Shall label the waste containing nanomaterials as such and seek evaluation and approval for disposal from FIU Environmental Safety and Health.
- Shall decontaminate the existing lab of any nanomaterials or other contaminants and dispose of waste following proper procedures and in consultation with the Environmental Compliance Officer /NSO.

FIU Nanotechnology Safety Officer

- Upon receipt of initial notification of intent to relocate, the NSO shall conduct an evaluation of the new location to determine if there are any security or safety issues.
- Shall consult with EH&S lab safety team for issues in their program areas that may have bearing on the clearance of the lab.
- Shall respond to the authorized user/researcher or have EH&S lead team respond within 10 working days with recommendations or release to proceed.

GUIDELINES FOR NEW LOCATION

- **General Conditions**
- **Emergency Equipment**
- **Chemical/Hazardous Material Storage**
- **Fume Hoods**
- **Biosafety Issues**

GUIDELINES FOR NEW LOCATION

Principal Investigators and laboratory managers moving into new laboratories should assure the following

GENERAL CONDITIONS

- Post signs as appropriate (emergency gas shut-offs, biohazards, radiation, lasers, carcinogens etc., (Appendix 3a)
- Secure compressed gas, liquid and cryogenic cylinders
- Maintain a minimum 30" clearance in all the aisles.
- Secure storage shelves and cabinets.
- Keep exit doors free of obstruction.
- Maintain minimum 18' clearance from ceiling and sprinkler heads
- Request installation of additional outlets to avoid using extension cords

EMERGENCY EQUIPMENT

- Locate emergency supplies (spill kits, first aid kits, MSDS and safety manuals) near an exit door, if possible.
- Locate closest fire extinguisher (near an exit door, if possible)
- Familiarize yourself with the location of all emergency exits and gas shut offs

CHEMICAL/HAZARDOUS MATERIAL STORAGE

- Do not store chemicals alphabetically, except within a hazard class. Fire codes require segregation of chemicals by hazard class[1].
- Pay attention to specific chemical incompatibilities[2].
- Keep flammables by themselves in approved storage cans or cabinets.
- Keep acids away from bases. Keep nitric acid separate.
- Separate organics from in-organics.
- Store oxidizers away from flammables.
- Store strong oxidizers away from potential sources of fuel such as paper or cardboard packaging.
- Provide as much physical separation as possible between classes.
- Gas cylinders must be secured with a strap, belt or chain in an upright position with the valve cap or regulator securely in place.
- Gas cylinders like all chemicals must be stored according to classification. Oxidizers and Flammables (or other incompatibles) shall be stored at least 20 feet apart or separated by a 5 foot wall with a 0.5 hour fire rating.
- Empty and full cylinders shall be stored separately and where compatibility or other safety issues warrant have a 5 foot wall with a 0.5 hour fire wall separating them or a distance of 20 feet
- Gas cylinders shall not be placed or stored in areas which interfere with roots of emergency egress routs or access to emergency equipment.
- Cryogenic liquid cylinders may need to be stored in a room which has a working & calibrated oxygen monitor with appropriate warning devices at all entrance doors.
- Cryogenic liquid containers should be stored in areas where the room general ventilation system exhausts 100% of its air directly to the outside of the building (not recirculated),

- Cryogenic liquid containers may not be stored in areas which interfere with emergency egress routes or safety equipment.
- Radioactive materials should be properly labeled and stored as a group.
- Biohazardous materials should be properly labeled[3] and stored together as a group.
- OSHA regulated carcinogens[4] must be properly labeled and segregated.
- Update Laboratory Chemical Inventory for the new location and follow notification procedures

FUME HOODS

- Check for fume hoods inspection labels. Do not operate fume hoods which have not been inspected and approved by EH&S within the last 12 months.
- Do not use fume hoods to store chemicals or equipment.

BIOSAFETY ISSUES

- Containers for biohazardous/biomedical waste must be available and appropriately labeled
- Sharps containers must be available if sharps are handled.
- Assure arrangements have been made for biohazardous/biomedical waste disposals.

1 Refer to FIU Laboratory Safety Manual Appendix M for a list of hazard classes.
2 Refer to FIU Laboratory Safety Manual Appendix S for a list of chemical incompatibilities.
3 Refer to FIU Biomedical Waste Plan for proper labeling procedures.
4 Refer to FIU Laboratory Safety Manual Appendix J for a list of carcinogenic substances.

APPENDIX – 1

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

Laboratory Characterization Survey

Please use this simple checklist to help us determine how to have your laboratory prepared to meet your safety and University compliance needs. You may provide a few details, or simply check the appropriate box. Skip items that do not apply.
Please fax completed form to Attention: William Youngblut CIH, CSP: 305-348-3574

NOTE: Principle investigators with permits & licenses for Controlled Substances are required to directly contact the Controlled Substances Safety Officer (ext. 72621) as there is no reference to these materials on this characterization.
THIS IS NOT AN OVERSIGHT.

Bldg# & Rm#: _____ **Rm. Phone:** _____ **Dept.:** _____ **Date:** _____

Primary Emergency Contact (PI/Lab Mgr.): _____
Office Phone: _____ **Phone No.:** _____

Secondary Emergency Contact (Lab Manager): _____
Office Phone: _____ **Phone No.:** _____

☐ Biological ☐ BL1 ☐ BL2 ☐ BL3

☐ Research Animals Housed in Lab Type: _____

☐ Carcinogens _____

☐ Compressed Gases or Liquids (Tanks, or Cylinders) How many _____
☐ Asphyxiate ☐ Corrosive ☐Flammable ☐ Non Flammable ☐ Oxidizer ☐ Toxic

☐ Acetylene _____ ☐ Air _____ ☐ Ammonia ____ ☐ Argon _____
☐ CO _____ ☐ CO_2 ____ ☐ Ethane _____ ☐ He _____
☐ H_2 _____ ☐ Methane _____ ☐ N_2 _____ ☐ NO _____
☐ NO_2 _____ ☐ O_2 _____ ☐ Med. grade O_2 ____ ☐ Propane ___
☐ Other _____ ☐ Mix _____

☐ Cryogenic liquid container(s) How many _____
☐ Ar ☐ CO_2 ☐ He ☐ N_2 ☐O_2
160L ____ 180L ____ 230L ____ _____ ____

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

Laboratory Characterization Survey

Building: _____ **Room No.: _____** **Survey Date: _____**

☐ Cryogenic liquid Dewar(s) How many _____ In use _____ Empty _____

Size (L) and contents

_____ L Contents _____ How Many _____
_____ L Contents _____ How Many _____
_____ L Contents _____ How Many _____
_____ L Contents _____ How Many _____

☐ Explosives: _____

☐ Flammable Materials: _____

☐ Flammable Safety Cabinet(s) How many _____

☐ Water Reactive Materials (ex. sodium metal, aluminum phosphate, potassium cyanide)

☐ Peroxide Forming Materials (ex. tetrahydrofuran, diethyl ether, isopropyl benzene, etc.)

☐ Other Regulated Materials
☐ Acids ☐ Caustics ☐ Irritants ☐ Oxidizers ☐ Sensitizers ☐ Toxics

☐ Nanomaterials

☐ Ovens or Kilns How many _____

☐ High Voltage Equipment (Equipment directly wired into a power disconnect box)

☐ High Electric Fields producing equipment How many _____

☐ High Magnetic Fields producing equipment How many _____

☐ Laser Equipment Classes & How many 3R ____ 3B ____ 4 ____

Embedded Beam Open Beam

FIU | FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

Laboratory Characterization Survey

Building: _____ Room No.: _____ Survey Date: _____

☐ IR radiation producing equipment How many _____

☐ Micro-wave producing equipment (other than cooking ovens) How many _____

☐ Radio-wave producing equipment How many _____

☐ Radioactive Materials ☐RAD1 ☐RAD2 ☐RAD3

☐ UV radiation producing equipment How many_____

☐ X-ray producing equipment How many _____

☐ Bio Safety Cabinets or Laminar Flow Benches in Lab How many _____

☐ Class I
☐ Class II, Type A Type B1 Type B2 Type B3
☐ Class III

☐ Laboratory Fume Hood(s) How many _____

☐ Laminar Flow Hood(s) How many _____

☐ Ventilated Glove Box How many _____

☐ Snorkel (elephant trunk, flexible drop line, etc.) How many _____

☐ Other Local Exhaust Ventilation Pick-ups in Lab How many _____

GCMS _____ Oven/Furnace _____ Storage Cabinet _____ Other _____

☐ Security Alarm:

_____

Signature: Principal Investigator/Lab Manager

Upon completion of form, fax to Environmental Health & Safety at (305) 348-3574.

Thank You

APPENDIX – 2

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

LABORATORY CLOSEOUT ACTIVITY CHECKLIST

Please complete and fax to EH&S at (305) 348-3574 in order to schedule the final closeout inspection

Laboratory to be closed out: Building _____ Room _____

Date current research/teaching activities will cease: _____

Principal Investigator (please print): _____ Department: _____

ACTIVITIES CHECKLIST

CHEMICALS	**Yes (✓)**	**N/A**	**Initials**
Identify all chemicals for disposal.	❑	❑	
Label all containers with full chemical names(s).	❑	❑	
Submit *Request for Hazardous Waste Pick up for Disposal* form at least 2 weeks prior to pick up date.	❑	❑	
Clean all laboratory surfaces including working surface of hoods.	❑	❑	
If transferring chemicals to another lab, refer to Sections 3.0 and 6.0 of the Chemical Hygiene Plan.	❑	❑	
Confirm that all hazardous waste and surplus chemicals have been removed.	❑	❑	
Update Computerized Chemical Management Inventory System, include disposal information or reflect transfer to another laboratory.	❑	❑	

GAS CYLINDERS - ❑ YES ❑ NO *If no please go to next this section*	**Yes (✓)**	**N/A**	**Initials**
Identify contents of cylinder(s) or mark MT.	❑	❑	
Contact supplier to move cylinders between rooms, floors or buildings (if personnel with required training, appropriate handling and safety equipment is not readily available for the move).	❑	❑	
Return to supplier, if appropriate, transfer to another lab, or contact EH&S	❑	❑	

CRYOGENIC LIQUID CONTAINERS / DEWARS - ❑ YES ❑ NO *If no please go to next section*	**Yes (✓)**	**N/A**	**Initials**
Identify contents of container(s) / Dewar(s)	❑	❑	
Contact cryogenic container supplier or qualified commercial mover to transport containers between rooms and floors (if personnel with required training, an EHS approved written move plan, and required handling and safety equipment is not available), and always when moving between buildings and campuses.	❑	❑	
Return container(s) to supplier, if appropriate, transfer to another lab, or contact EH&S for assistance	❑	❑	

ANIMAL AND HUMAN TISSUE - ❑ YES ❑ NO *If no please go to next this section*	**Yes (✓)**	**N/A**	**Initials**
Clean and decontaminate refrigerators and freezers.	❑	❑	
Dispose of biohazardous waste as per regulations, contact EH&S if needed.	❑	❑	
Dispose of any chemical preservative through EH&S.	❑	❑	
Transfer responsibility to: _____			
MICROORGANISMS AND CULTURES - ❑ YES ❑ NO *If no please go to next this section*	**Yes (✓)**	**N/A**	**Initials**
Place waste in biohazardous bag.	❑	❑	
Autoclave waste then over-bag.	❑	❑	
Clean all equipment used with above waste.	❑	❑	
Transfer responsibility to: _____			

RADIOACTIVE MATERIALS - ❑ YES ❑ NO *If no please go to next this section*	**Yes (✓)**	**N/A**	**Initials**
Inventory radioactive materials (RAM) and account all RAM.	❑	❑	
Send inventory of RAM to RSO	❑	❑	
Package all materials and waste in approved-labeled containers.	❑	❑	
Complete rad waste cards (stickers) and attach to containers.	❑	❑	
Complete rad waste pick-up form and submit to RSO.	❑	❑	
Perform contamination survey of laboratory and all equipment, including refrigerator, liquid counter, decontaminate if necessary and re-survey.	❑	❑	
Schedule close out survey with Radiation Safety officer.	❑	❑	
Arrange for a responsible person to be present.	❑	❑	
Prepare rad materials for transfer to new authorized use lab.	❑	❑	
Transfer inventory to new authorized use lab.	❑	❑	
Post the new lab with rad signs and symbols, emergency contact, etc.	❑	❑	
Remove all rad signs, stickers, postings, etc. from doors and equipment	❑	❑	
Return dosimeters and holders, if issued.	❑	❑	

LASER DEVICES - ❑ YES ❑ NO *If no please go to next this section*	**Yes (✓)**	**N/A**	**Initials**
Perform inventory of laser devices.	❑	❑	
Package and label all laser devices.	❑	❑	
Manage all chemicals, radioactive or biohazardous materials and gas cylinders appropriately (see relevant sections).	❑	❑	
Remove hazards from high voltage or other equipment/devices	❑	❑	
Transfer laser devices and equipment to new authorized use lab.	❑	❑	
Post the new lab with laser signs and symbols, emergency contact, etc.	❑	❑	
Remove laser postings from doors.	❑	❑	
Schedule walk through inspection LSO.	❑	❑	

CONTROLLED SUBSTANCES - ❑ YES ❑ NO *If no please go to next this section*	**Yes (✓)**	**N/A**	**Initials**
Perform inventory of controlled substances.	❑	❑	
Obtain permission to transfer ownership of controlled substance from the DEA, if leaving FIU or discontinuing use of controlled substances. .	❑	❑	
Transfer controlled substances to another DEA licensed individual. Name of the individual_____ Department _____	❑	❑	
Dispose controlled substances through an authorized company. Name_____, phone number_____	❑	❑	
Transfer under supervision of public safety.	❑	❑	
New storage location is secure and new laboratory adequate	❑	❑	
Schedule Walk through by FIU controlled substances coordinator.	❑	❑	

FUME HOODS - ❑ YES ❑ NO *If no please go to next this section*	**Yes (✓)**	**N/A**	**Initials**
Remove all items including debris from the fume hoods.	❑	❑	
Clean hoods with soap and water.	❑	❑	
Remove signs & placards from the hoods. (Do not remove hoods inspection sticker)	❑	❑	
Obtain clearance from RSO, if radioactive materials have been used.	❑	❑	

EQUIPMENT AND LAB FURNITURE	**Yes (✓)**	**N/A**	**Initials**
Clean or decontaminate equipment and furniture	❑	❑	
Surplus equipment and furniture no longer usable.	❑	❑	
Remove signs & placards from the hoods. (Do not remove hoods inspection sticker)	❑	❑	
Obtain clearance from RSO, if radioactive materials have been used.	❑	❑	

DEPARTMENT CLEARANCE

Principal Investigator's Agreement

I certify that my staff and I have adequately cleaned and decontaminated the laboratory to be closed out under my supervision.

_____ _____

Principal Investigator's Signature **Date**

Department Head/Designee

I am aware of the status of the lab(s) being vacated.

_____ _____

Department Head's/Designee's Signature **Date**

Return completed form to EH&S at CSC 162 at least 14 days prior to scheduled move.

APPENDIX – 2a

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

LABORATORY EQUIPMENT DECONTAMINATION FORM

All equipment must be appropriately cleaned prior to disposal or relocation by general handlers

_____ _____

Bldg./Room No. **Equipment Description**

_____ _____

Manufacturer, Model #, Serial # **FIU ID#**

☐ **Has never been used with radioactive materials, chemicals, or biological agents.**

☐ **Has been used with the following materials:**

☐ **Radioactive Materials (list isotopes used)**

_____

_____ _____

(Date Radioactive Materials Removed) **(Certified by R.S.O)**

☐ **Chemicals (list high risk chemicals, carcinogens, water/air reactive, poison, etc.)**

_____

☐ **Biological Agents (list biological agents used)**

_____

The above named equipment has been cleaned with: _____,
Which is suitable for (Describe process and agent used) **deactivating/removing/disinfecting the hazardous materials.**

_____ _____

Print Name and Title of Person Doing the Cleaning **Signature and Date**

_____ _____

Print Principal Investigator Name **Principal Investigators Signature**

_____ _____

Title **Department**

APPENDIX – 2b

CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:
CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:
CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:
CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:
CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:
CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:
CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:
CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:
CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:
CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:	CLEANED & DECONTAMINATED Date: ________ Initials: ________ CONFIRMED BY EH&S ON:

APPENDIX – 2c

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

BIOHAZARDOUS WASTE DISPOSAL REQUEST

Please complete SECTIONS 1 and 2 and fax to the Biosafety Office at 7-3574. If you have a special pick-up request, complete SECTIONS 1 and 3.

SECTION 1

Generator's Name _____ Phone _____

Generator's Department _____

SECTION 2

A. Change in Current Service

Change the following at _____:
(Bldg/Room)

☐ frequency, from: _____ to: _____

☐ contact information: _____

B. Add New Service

Location _____ Frequency _____
(Bldg./Room) (Weekly/Biweekly/Monthly)

Number of Containers _____ Container Size: ☐ 15 Gal ☐ 30 Gal

START service to the above location effective _____
(Date)

C. Discontinue Service

Location _____ Frequency _____
(Bldg./Room) (Weekly/Biweekly/Monthly)

END service to the location indicated below effective _____
(Date)

SECTION 3

SPECIAL PICK-UP REQUEST

Date required: _____ Location: _____

Number of Containers _____ Container Size: ☐ 15 Gal ☐ 30 Gal

Generator's Signature _____ Date _____

APPENDIX – 2d

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

REQUEST *for* HAZARDOUS WASTE PICK-UP *for* DISPOSAL

Complete one form for each container of waste

You may use a single form for multiple containers with the same chemical constituents.*

Generators are strongly encouraged to take responsible steps to limit the amount of waste generated and to participate in the Interdepartmental Chemical Exchange Program (ICEP)

Waste generating **department**:_____ Request Date:_____

Generator requesting the pick-up:_____Title:_____

Bldg. & Room No: _____Extension:_____E-mail:_____

Process generating waste *(please be specific)*:_____

Total Est.Volume/Weight of Waste: _____ No. of Containers:* _____

Container Size(s):_____/_____/_____/_____
Type of Container: □Metal □Plastic □Glass

Containers are clean and sealed properly? □Yes □No

Are the containers properly labeled? □Yes □No

Waste contains: □Spent Solvents □Infectious material □Radioactive Contamination

Please check all that apply: □Corrosive □Flammable □Irritant □Reactive □Toxic Metals: □Yes

(ppm) □N/A If Yes, please specify: _____

Hazardous Waste Material Profile

Chemical Constituents:	**(%)**
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
_____	_____
Total:	100%

Item is eligible for redistribution via the ICEP program:
❑ Yes ❑ No

Characteristics at room temperature:
Physical State: ❑ Solid ❑ Semi-solid ❑ Liquid ❑ Gas
Layers: ❑ None ❑ Multilayer _____
Free Liquids (%): _____ ❑ N/A
Precipitated solids (%): _____❑ N/A
Viscosity: ❑ Low ❑ Medium ❑ High
pH: ❑ < 2 ❑ > 12
Odor: ❑ None ❑ Mild ❑ Strong

Electronic Requests must include Generator's Panther ID # on Signature Line & must be sent from Generator's FIU Email address

- I represent that the information provided is accurate regarding the known and suspected hazards of the waste submitted to EH&S for disposal. If this form is not signed and containers are not properly labeled pickup may be delayed
- I am aware that as a generator of hazardous waste I am **required** (by 40 CFR 262) and have completed annual training on the proper handling and disposal of hazardous waste and that I am responsible for compliance with the waste management regulations for my lab or operations. *www.fiu.edu/~ehs*
- My **signature below** acknowledges my understanding of my responsibilities for compliance with hazardous waste management regulations.

Please obtain standard form from EH&S web-site – this copy has been compressed for publication

EH&S USE: Control #_____ ***Date picked up: _____Picked up by:*** _____
Weight: _____ ***lbs.***

APPENDIX – 2e

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

Request for Radioactive Waste Pick-up

Please note that it is important to fill up this form prior to scheduling a pick-up

Principal Investigator: _____Phone: _____ Department: _____

Campus: _____ Pick up Location: _____ Number of Packages/Containers: _____

Do all Packages/Containers have the required labels[1]: Yes ☐ No ☐ *(If no, please assure that all labels are in place at the time of pick-up)*

Survey meter model No._____ Serial No. _____Manufacturer _____Background Dose Rate _____mR/h

Please complete all the details in the following table:

No.	Year (I or II), Location, Type (solid/liquid), ID, Isotope, Activity[2]	Half-life of Isotope	Surface Dose Rate (mR/h)	Volume/ Weight	Date Package Sealed	Final Disposal Date[3]	Other hazard [4] (Chemical/ Bio/ None)	Name of Hazardous Subsatance[5]
1.								

Date Pick-up Required: _____ Pick-up Location: _____

Per requirements of the FAC 64E-5.1505 I certify that all information on this form is complete and factual and is an accurate representation of the waste to be disposed.

Authorized user: Name: _____ Signature: _____ Date: _____

To be completed by EH&S:

Date received by EH&S: _____Reference #: _____Actual Pick-up Date: _____Picked-up by: _____Date of Final Disposal: _____

Disposed by: _____Surface Dose Rate at time of final disposal: _____Meter Model & Serial: _____

---

[1] Affix label on the external surface of the packing. **Do not place any radiation tag/labels inside the package**.

[2] Do not mix waste of different isotopes and types (solid or liquid). Enter year (and first or second half of the year), Lab #; Solid or Liquid, 3-digit sequential distinctive # of waste of each isotope for the stated half of the year, Isotope and Activity. For example: 2003 (I)-ACII351-Solid-001-I125-0.05 mCi or 2003 (I)-ACII351-Liquid-001-I125-0.05 mCi. This information should appear legibly on a radioactive material tag on each waste package/container.

[3] Calculate based on 10 half-lives from the date when package was sealed.

[4] State the hazard (chemical or biomedical, or none, if there is no hazard).

[5] Different chemicals should not be packed in the same container.

APPENDIX – 2f

BOX #: _____

CONTACT NAME: _____

PHONE #: _____

MOVE FROM:

MOVE TO:

SPECIAL PRECCAUTIONS:

- ___ Keep Upright
- ___ Do not apply pressure
- ___ Heavy
- ___ Fragile
- ___ Extreme caution
- ___ Other: _____

CATEGORY:

- ___ Flammable
- ___ Corrosive
- ___ Reactive
- ___ Oxidizer
- ___ Toxic
- ___ Other (Specify) _____

PACKING LIST:

Chemical Name	Volume

APPENDIX - 3

APPENDIX – 3a

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

SAFETY SIGN CHECKLIST

Please check all applicable safety signs that you will require for new laboratory:

- ☐ **Biohazard / Carcinogen / Laser / Poison / Radiation / X-ray**
- ☐ **Bio Safety Poster**
- ☐ **Biohazard – Universal Precautions Must Be Observed**
- ☐ **_____ – No Eating, Drinking or Smoking**
- ☐ **_____: Authorized Personal Only**
- ☐ **Caution – Chemical Gloves Required**
- ☐ **Caution – Chemical Storage Area**
- ☐ **Caution / Danger - _____ Waste / Material / Gas**
- ☐ **Caution – Eye / Face Protection Required**
- ☐ **Caution – Hazardous / Biological / Radioactive Waste Storage Only**
- ☐ **Caution – Head Protection Required**
- ☐ **Caution – High Noise Area – Hearing Protection Required**
- ☐ **Caution – Hot Surface**
- ☐ **Caution – Keep All Cylinders Chained**
- ☐ **Caution – Microwave / Radio-Wave / UV Radiation Hazard**
- ☐ **Caution – Work Gloves Required**
- ☐ **Danger – Flammables – No Open Flames**
- ☐ **Danger - High Voltage**
- ☐ **Danger – Reacts Violently When Exposed To _____**
- ☐ **Danger – Restricted Area**
- ☐ **Do Not Dispose of Chemicals in the Sink / Floor Drain**
- ☐ **Do Not Store Chemicals, Hazardous Waste or Equipment in Laboratory Hoods**
- ☐ **Emergency Contact List (Names & Phone Numbers, Outside of All Entrances)**

☐ **Emergency Procedures**

☐ **Emergency Safety Shower and Eye Wash Station**

☐ **Emergency Spill Response Equipment**

☐ **Fire Alarm**

☐ **Fire Blanket**

☐ **Fire Extinguisher**

☐ **First Aid Supplies**

☐ **Laboratory Hazard Identification Chart (on outside of all entrance doors)**

☐ **Laboratory Safety Rules Poster**

☐ **Material Safety Data Sheets**

☐ **Notice - _____ Shut-off**

☐ **Notice – Do Not Block Door**

☐ **Notice – Film Badge or Dosimeter Required**

☐ **Notice - Full Cylinders / Empty Cylinders**

☐ **Notice – Keep Waste Containers Closed When Not In Use**

☐ **Notice – Keep Work Area Clean**

☐ **Notice - Keep Doors Closed and Locked When Room Is Unoccupied**

☐ **Notice – No Food or Drink To Be Stored In Refrigerator**

☐ **OSHA Carcinogen Poster**

☐ **Warning – Do Not Use Elevator – Transporting Potentially Hazardous Material**

☐ **Warning – Do Not Remove or Modify Equipment Guards**

☐ **Warning – Protective Clothing Required**

☐ **Warning – Respiratory Protection Required**

These are just some examples, if you have any questions on what types of signage you may need contact EH&S at 7-2621.

APPENDIX – 3b

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

PRINCIPAL INVESTIGATOR: _____ PREFERRED EMAIL: _____

COMPRESSED GAS CYLINDER RELOCATION INVENTORY NOTIFICATION FORM - *Check all that apply*

Are you acquiring or relocating compressed gases that are classified as follows:

☐ **Poisonous or Toxics** (ex., Ammonia, Carbon monoxide, Chlorine, Diborane, Germane, Hydrogen sulfide, Nitrogen dioxide Nitric oxide, Phosphine, Sulfur dioxide, etc.).
Poison gases must be stored in a ventilated enclosure; e.g., an approved gas cabinet or a chemical fume hood.
Gas detection systems may be required in laboratories utilizing poison gases. Contact the Department of Research (DoR) and Environmental Health and Safety (EHS) for information.
The quantity of poison gas in a laboratory should be kept to a minimum.
Flow restrictors are required on most poison gas cylinders.
Ensure that pressure-relief devices vent directly to a laboratory exhaust system.

☐ **Corrosive** (ex., Ammonia, Chlorine, Nitric oxide, etc.).
If a cylinder or valve is noticeably corroded, the gas vendor should be contacted and the gas vendor's instructions followed before the cylinder is moved.

☐ **Inert** (ex., Acetylene, Argon, Carbon dioxide, Chlorine, Ethane, Ethylene, Helium, Hydrogen, Isobutylene, Krypton, Methane, Nitrogen, Neon, Xenon, etc.).
These gases are often stored at pressures exceeding 2,000 psi. They can be classified as simple asphyxiates because of their ability to displace the amount of oxygen necessary to support life when released in a confined place. Use of adequate ventilation and monitoring of the oxygen content in confined places will minimize the danger of this type of asphyxiation.

☐ **Flammable or Oxidizers** (ex., Acetylene, Carbon monoxide, Ethane, Ethylene, Hydrogen, Hydrogen sulfide, Methane, Nitric oxide, Oxygen, Propane etc.).
Cylinders containing flammable gases (empty or full) should be separated **from cylinders containing oxidizing gases by a minimum distance of 20 feet** or by a barrier at least 5 feet high which has a fire-resistance rating of at least one-half hour; e.g., a concrete block wall. Flammable and oxidizing gases shall not be situated near unprotected electrical connections, heat sources or any source of ignition.
Proper ventilation is required fire resistant enclosure is recommended; e.g., an approved gas cabinet or chemical fume hood. If this is not possible, flammable gas cylinders should be stored in a well-ventilated space.
A maximum of three full-size cylinders of flammable gas are permitted in one laboratory.

GAS (Argon, Ammonia, CO, Nitrogen, etc.)	**CLASSIFICATION(S)** (Inert, Flammable, etc.)	**Number of Cylinders**	**TOTAL Volume** (Cubic Ft.)	**Current Location Lab # or N/A**	**New Location Lab #**	**Proper Chains in Place**
						Yes ☐ No ☐
						Yes ☐ No ☐
						Yes ☐ No ☐

Please use this form to assist you in preparing for your move, particularly if you are using a moving company. Keep the completed form in with your safety records. Fax a copy to EH&S @ 305.348.3574 for our records and to use in follow-up inspections of your new lab. You may also send an email attachment to ehslabs@fiu.edu.

APPENDIX – 3c

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

PRINCIPAL INVESTIGATOR: _____ PREFERRED EMAIL: _____

CRYOGENIC LIQUID CONTAINER & DEWAR INVENTORY RELOCATION FORM - *Check all that apply*

All cryogenic liquids & vapors present a thermal burn hazards to the skin & eyes, they also may give rise to hazardous environments do to their large thermal expansion ratios and chemical properties. Are you acquiring or relocating cryogenic liquids that are classified as follows:

☐ **Poisonous / Toxic** (ex., Carbon monoxide, Nitric oxide, etc.).

☐ **Corrosive** (ex., Nitric oxide, etc.).

☐ **Inert** (ex., Argon, Carbon dioxide, Helium, Krypton, Neon, Nitrogen, etc.).
Inert gases do not react chemically to any great extent.
They do burn or support combustion.

☐ **Oxidizers** (ex., Air, Fluorine, Nitric oxide, Oxygen, etc.).

☐ **Flammable** (ex., Carbon monoxide, Hydrogen, Methane, etc.).
Some cryogenic liquids produce a gas that can burn in air

Due to their large coefficient of expansion, liquid cryogenic materials in pressurized containers can create asphyxiation and confined space hazards when used or stored inside buildings. To control these hazards cryogenic liquid containers should only be stored in rooms which have been evaluated by EH&S and are equipped with an:

1. **Oxygen monitoring system with warning signs and alarm/light at each entrance door to warn of low oxygen content.**
2. **Independent, room general ventilation system which exhausts directly to the outside (non-recirculating).**

CRYOGENIC MATERIAL (Argon, Helium, Nitrogen, Oxygen, etc.)	**CLASSIFICATION(S)** (Inert, Flammable, etc.)	**Number of Cryogenic Liquid Containers**	**Volume of Cryogenic Liquid Containers** (Liters)	**Number of Non-Pressurized Cryogenic Liquid Dewars/Flasks**	**Volume of Non-Pressurized Cryogenic Liquid Dewars/Flasks** (Liters)	**New Location Lab #**	**Proper Chains in Place**
							Yes ☐ No ☐
							Yes ☐ No ☐
							Yes ☐ No ☐

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APPENDIX – 3d

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

PRINCIPAL INVESTIGATOR: _____ PREFERRED EMAIL: _____

BIOLOGICAL MATERIALS INVENTORY RELOCATION REGISTRATION FORM - *Check all that apply*

Are you acquiring or relocating biological materials that are classified as follows:

- ☐ **Infectious (viral, bacterial, fungal, etc)**
- ☐ **Restricted (Select Agents and Toxins)**
- ☐ **Research Organisms (Vertebrates, Invertebrates, Plants)**
- ☐ **Human or Non-Human Primate Tissue/Cell line/Fluids**
- ☐ **Recombinant DNA**

Acquisition or relocation of these materials requires the following:

- ♦ Authorization from the appropriate FIU research oversight committee*
- ♦ Adequate facility design and containment equipment in accordance with state and federal regulations, specifically for materials classified as Risk Group 2 and above
- ♦ Package and transport in accordance with IATA and DOT regulations

MATERIAL	**BIOSAFETY LEVEL**	**CLASSIFICATION** Infectious, Restricted, etc.	**Number of Items** Animals, Vials, etc	**TOTAL** Volume (uL, L)	**Current Location** Lab # or N/A	**New Location Lab #**	**Proper Storage and Security in Place****
							Yes ☐ No ☐
							Yes ☐ No ☐
							Yes ☐ No ☐
							Yes ☐ No ☐

*** Institutional Animal Care and Use Committee (IACUC), Institutional Biosafety Committee (IBC), Institutional Review Board (IRB)**

****Refer to FIU Special Hazard Materials Policy**

Please use this form to assist you in preparing for your move, particularly if you are using a moving company. Keep the completed form in with your safety records. Fax a copy to the Biosafety Officer @ 305.348.3574 for our records and to use in follow-up inspections of your new lab. You may also send an email attachment ehs@fiu.edu.

APPENDIX – 3e

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

INSTALLATION, RELOCATION, OR REMOVAL OF BIOSAFETY CABINETS

Please complete and submit the completed form to the Biosafety Officer in AHC4 121 for approval **PRIOR** to installation, relocation, or removal.

NAME OF P.I.:			DEPT.		
P.I.'S TELEPHONE #		FAX:		EMAIL:	

Installation Approval

Location of BSC: _____ Installation Date: _____

Number of BSC(s) to be installed: _____ BSC Type(s): _____

Manufacturer: _____ Model No: _____ Serial No. _____

Work to be perform in BSC:

Relocation Approval

Initial location of BSC: _____ Relocation Date: _____ Final location: _____

Number of BSC(s) to be relocated: _____ BSC Type(s): _____

Manufacturer: _____ Model No: _____ Serial No. _____

Has BSC been decontaminated? Yes No* Decontamination Date: _____

*If no, contact the Biosafety Officer to schedule decontamination

Removal Approval

Location of BSC: _____ Removal Date: _____

Number of BSC(s) to be removed: _____ BSC Type(s): _____

Manufacturer: _____ Model No: _____ Serial No. _____

Has BSC been decontaminated? Yes No* Decontamination Date: _____

*If no, contact the Biosafety Officer to schedule decontamination

Reason for removal:

PI Signature: _____ Date: _____

EH&S Internal Use

Approved By:		Date Received:	
Approval No.		Date Returned	

APPENDIX – 3f

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

PRINCIPAL INVESTIGATOR: _____ PREFERRED EMAIL: _____

RADIOACTIVE MATERIALS/ RADIATION PRODUCING DEVICES INVENTORY RELOCATION REGSITRATION FORM – check all that apply

All locations for use of radioactive materials / radiation producing devices must be approved by the FIU Radiation Control Committee. These locations must be registered with the Radiation Safety Office. If you plan to move radioactive materials / radiation producing devices to a new location written approval from the Radiation Safety Office must be obtained. All radioactive materials must be transported by an individual trained in DOT regulations.

☐ Yes ☐ No ☐ N/A Radiation warning signs and Notices have been posted at the entrance to the lab
☐ Yes ☐ No ☐ N/A Lighted "X-ray on" warning sign has been installed at the entrance to the lab
☐ Yes ☐ No ☐ N/A Fume hood/ glove box is installed and is working to control air and area contamination
☐ Yes ☐ No ☐ N/A Suitable instruments for radiation surveys are available and are calibrated
☐ Yes ☐ No ☐ N/A Access to the lab is only to authorized users
☐ Yes ☐ No ☐ N/A Two independent locking mechanisms are available to secure radioactive materials / radiation producing devices

RADIOACTIVE MATERIAL/RADIATION PRODUCING DEVICE	FORM Solid/Liquid/ Equipment	MAXIMUM ACTIVITY/ Voltage- milli amps	MANUFACTURER	MODEL No./ Lot No.	SERIAL No.	REGISTERED LOCATION	NEW LOCATION

☐ The facilities and equipment left behind will be decontaminated of any contaminants before relocating

☐ The facilities and equipment have been decontaminated of any contaminants and clearance from the Radiation Safety Officer obtained
☐ The facilities and equipment have been decontaminated of any contaminants and clearance from the Radiation Safety Officer is hereby requested

Please use this form to assist you in preparing for your move, particularly if you are using a moving company. Keep the completed form in with your safety records. Fax a copy to EH&S @ 305.348.3574 for our records and to use in follow-up inspections of your new lab. You may also send an e-mail attachment to ehslabs@fiu.edu.

APPENDIX – 3g

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

PRINCIPAL INVESTIGATOR: _____ PREFERRED EMAIL: _____

LASER DEVICES INVENTORY RELOCATION REGSITRATION FORM – check all that apply

All Class 3B and Class 4 laser devices, including embedded laser devices, are registered by the Laser Safety Officer with the Bureau of Radiation Control for a specific location. If you plan to move these devices to a new location the Bureau must be informed in writing.

☐ Yes ☐ No ☐ N/A Lighted "laser on" warning sign has been installed at the entrance to the lab
☐ Yes ☐ No ☐ N/A Door interlock with the laser device has been installed
☐ Yes ☐ No ☐ N/A Standard operating procedures have been prepared and approved
☐ Yes ☐ No ☐ N/A Eye wear suitable for laser is available
☐ Yes ☐ No ☐ N/A Exhaust suitable for Laser Generated Airborne Contaminants has been installed
☐ Yes ☐ No ☐ N/A Exhaust suitable for toxic gases used has been installed
☐ Yes ☐ No ☐ N/A Monitor for toxic gases used has been installed

MEDIUM (Argon, CO_2, Nd:YAG, etc.)	**CLASS** (3B or 4)	**MAXIMUM OUTPUT** (Watts or Joules/pulse)	**MANUFACTURER**	**MODEL No.**	**SERIAL No.**	**REGISTERED LOCATION**	**NEW LOCATION**

☐ The facilities and equipment left behind will be decontaminated of any contaminants before relocating.

☐ The facilities and equipment have been decontaminated of any contaminants.

Please use this form to assist you in preparing for your move, particularly if you are using a moving company. Keep the completed form in with your safety records. Fax a copy to EH&S @ 305.348.3574 for our records and to use in follow-up inspections of your new lab. You may also send an e-mail attachment to ehslabs@fiu.edu.

APPENDIX – 3h

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

PRINCIPAL INVESTIGATOR: _____ PREFERRED EMAIL: _____

NANO-MATERIALS USER NOTIFICATION FORM – check all that apply

Information regarding inventory, use location and any relocation must be provided to the Nanomaterials Safety Officer.

☐ **Yes** ☐ **No** ☐ **N/A** **Standard operating procedures have been prepared and approved**
☐ **Yes** ☐ **No** ☐ **N/A** **Suitable local exhaust ventilation has been installed and approved by Industrial Hygienist**
☐ **Yes** ☐ **No** ☐ **N/A** **Access to the lab is only to authorized users**

TYPE OF NANO MATERIAL (Carbon tubes, Quantum dots,)	**CHEMICAL COMPOUND** (Silicon dioxide, ferrous oxide, etc.)	**CLASSIFICATION** (Growing, Generating, Procuring)	LOCAL EXHAUST VENTILATION (LEV) **Units (GLOVE BOX, LAB HOOD, ETC.)**	**NUMBER OF OTHER LEV**	APPLICATION	**CURRENT LOCATION**	**NEW LOCATION**

☐ The facilities and equipment left behind will be decontaminated of any contaminants before relocating.

☐ The facilities and equipment have been decontaminated of any contaminants.

Please use this form to assist you in preparing for your move, particularly if you are using a moving company. Keep the completed form with your safety records. Fax a copy to EH&S @ 305.348.3574 for our records and to use in follow-up inspections of your new lab. You may also send an e-mail attachment to ehslabs@fiu.edu

APPENDIX – 3i

FIU FLORIDA INTERNATIONAL UNIVERSITY
Environmental Health & Safety

PRINCIPAL INVESTIGATOR: _____ PREFERRED EMAIL: _____

CONTROLLED SUBSTANCES INVENTORY RELOCATION REGSITRATION FORM –

check al that apply

All locations for use of Controlled Substances must be approved by the Drug Enforcement Administration. These locations must be registered with the Controlled Substances Office. If you plan to move controlled substances to a new location written approval from the Controlled Substances Safety Office must be obtained. All controlled substances must be transported with the concurrence of Controlled Substances Safety Office.

☐ Yes ☐ No ☐ N/A Lockable safe is available which has been bolted from inside to a suitable structure to prevent unauthorized removal
☐ Yes ☐ No ☐ N/A Access to the lab is only to the authorized users
☐ Yes ☐ No ☐ N/A A minimum of two independent locking mechanisms are available to secure controlled substances
☐ Yes ☐ No ☐ N/A Refrigerator used to store stock / prepared solutions is locked

NAME OF CONTROLLED SUBSTANCE	SCHEDULE/ DEA CODE-ID	FORM (Solid /Liquid)	CONCENTRATION	QUANTITY	MANUFACTURER/ VENDOR	REGISTERED LOCATION	NEW LOCATION

☐ The facilities and equipment left behind will be decontaminated of any contaminants before relocating.

☐ The facilities and equipment have been decontaminated of any contaminants

Please use this form to assist you in preparing for your move, particularly if you are using a moving company. Keep the completed form in with your safety records. Fax a copy to EH&S @ 305.348.3574 for our records and to use in follow-up inspections of your new lab. You may also send an e-mail attachment to ehslabs@fiu.edu.