Purpose:

- Define roles of EH&S, Primary Investigators, Business Managers, and others during the decommissioning process.
- Provide up-to-date information with regards to regulatory requirements involved with the moving/decommissioning process.
- Establish a timeline for the process which will reduce the possibility of additional charges affiliated with closure/decommissioning.
ENVIRONMENTAL HEALTH & SAFETY IS:

- Biological & Chemical Safety
- Environmental Compliance
- Occupational Safety
- Radiation Safety

BIOLOGICAL & CHEMICAL SAFETY
SUSAN COOK, Ph.D., CBSP: 747-0309
ABSO: ERIC KNOLL, Ph.D., CHMM: 362-6870

- Lab decommissioning
- Shipping infectious & diagnostic specimen guidance
- IATA chemical shipments
- Research protocol registration & review
- Select agents permitting & import/export controls
- DEA controlled substances and highly hazardous guidance/disposal
- Grant certifications
- Infection Control
- Bioterrorism Preparedness
- Safety audits
- Laboratory, clinical, shipping training (category A&B)
- Institutional Biological and Chemical Safety Committee (IBC) administration
**BIOLOGICAL & CHEMICAL SAFETY CONTACTS**

<table>
<thead>
<tr>
<th>Auditor</th>
<th>Building</th>
<th>Floors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Tony Nardi</td>
<td>All Clinics</td>
<td></td>
</tr>
<tr>
<td>Mark Gelsthorpe</td>
<td>CSRB, North Tower</td>
<td>2, 8, 9, 10</td>
</tr>
<tr>
<td></td>
<td>CSRB, HHMI (except 4)</td>
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<tr>
<td></td>
<td>McMillan Hospital</td>
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<tr>
<td></td>
<td>BCUH</td>
<td>10, 9, 8, 7</td>
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<tr>
<td>Eric Knoll</td>
<td>Barnard Cyclotron</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>CSRB 4th Floor</td>
<td>4</td>
</tr>
<tr>
<td></td>
<td>East Building Cyclotron</td>
<td>B</td>
</tr>
<tr>
<td></td>
<td>Mallinckrodt Institute of Radiology</td>
<td>B</td>
</tr>
<tr>
<td>JT Rosa</td>
<td>All Danforth Campus</td>
<td></td>
</tr>
<tr>
<td></td>
<td>935-3310 West Building</td>
<td></td>
</tr>
<tr>
<td>Becky Rivera</td>
<td>4444 Forest Park &amp; Cortex</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Barnard Hospital</td>
<td>8, 7</td>
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<tr>
<td></td>
<td>Cancer Research Building</td>
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<tr>
<td></td>
<td>East Building</td>
<td></td>
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<tr>
<td></td>
<td>East McDonnell Facility</td>
<td></td>
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<tr>
<td></td>
<td>McDonnell Medical Science Building</td>
<td></td>
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<tr>
<td></td>
<td>North &amp; South Medical Building</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Southwest Tower</td>
<td>6, 7, 8</td>
</tr>
<tr>
<td>Lee Spain</td>
<td>Biotechnology Center</td>
<td></td>
</tr>
<tr>
<td></td>
<td>362-6796 Central Institute for the Deaf - Research</td>
<td></td>
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<tr>
<td></td>
<td>FP Medical Bld.</td>
<td>1, 3, 4</td>
</tr>
<tr>
<td></td>
<td>Kasparov House, Sarnberg, &amp; Talen Buildings</td>
<td></td>
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<tr>
<td></td>
<td>McDonnell Pediatric Research Building</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Rehabilitation Institute of St. Louis</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Renard Hospital</td>
<td>5, 6, 7</td>
</tr>
<tr>
<td></td>
<td>Wohl Hospital &amp; Clinic</td>
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</tbody>
</table>

**ENVIRONMENTAL COMPLIANCE**

**LINDA VISHINO**  
MEDICAL SCHOOL CAMPUS – LIVI ISHRINGHAUSEN: 362-6735  
DANFORTH CAMPUS – DONNA HALL: 935-4650

- Surplus chemical removal
- Chemical waste disposal
- Biological waste disposal
- Assist with selection of licensed HAZMAT movers and selection of packing materials
- Hazardous and non-hazardous equipment disposal
  - Refrigerators, Freezers, Computers, Mercury containing materials, etc.
  - Please remember to collect hazardous materials from contaminated equipment, and don’t move it if unnecessary (e.g. HPLC)
- Recycling/pollution prevention
- Emergency spill response
RADIATION SAFETY
SUE LANGHORST, PH.D., CHP
MICKEY CROYLE: 362-2997
- Radioactive materials use
- Authorization amendments/approvals
- Collection of waste
- Closeouts & decommissioning
- Assist with selection of licensed HAZMAT movers and selection of packing materials
- Surveys, inspections, & training
- Accelerator & x-ray safety
- Laser safety
- Broad Scope NRC License
- Delivery of radioactive materials
- Emergency Response

OCCUPATIONAL SAFETY
BRAD KING M.S., M.B.A.: 362-2997
- Asbestos survey. Most are complete
  - Asbestos-containing items may include: bench tops, shelving, floor tiles, and tile glue

LABORATORY CLOSURE GUIDELINES:
- Detailed guidelines
- Quick guidelines overview
- Contact information
- Checklist
Why Close Out a Lab?

- Compliance Issues
  - EPA
    - Abandoned chemicals
  - NRC
    - Radioactive materials handling
    - Survey for contamination
  - OSHA
    - Hazard communication
    - Contractor safety
  - CDC
    - Select agent toxins
  - DEA
    - Controlled substances
- Departmental Liability
  - Fines are the responsibility of the department in which they were incurred.
- Housekeeping and Facilities Personnel
  - Unused areas are often used for storage of equipment.

Possible Scenarios for Laboratory Decommissioning

- PI is leaving the University
- PI is moving to a new space within the University
- Total renovation of lab space
- Partial renovation of lab space
  - Work on the floor above
  - HVAC work in ceiling
- Minor work/repairs/cleaning
- Timing is the key!! The sooner you let us know, the better.
**AT LEAST 4 WEEKS PRIOR TO CLOSURE**

- Notify Biological & Chemical Safety and Radiation Safety of lab closure or renovation (see contact list).
- For renovations, notify Design & Construction (Med School), or Facilities Planning & Management (Danforth) that the lab closure process is beginning
  - May need an asbestos survey, and the process will take time
- If lab is relocating to another WU lab, get Radiation Safety Committee approval of any new radioactive materials areas: [https://radsafety.wustl.edu/documents/forms/AppToAmend.pdf](https://radsafety.wustl.edu/documents/forms/AppToAmend.pdf)
- Also contact Biological & Chemical Safety and make updates to your IBC protocol, if necessary
- Contact the individual building auditor for assistance with distribution/determination of various equipment and materials
- Opportune time to notify Environmental Compliance for waste/surplus chemical pickup.

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**AT LEAST 2 WEEKS PRIOR TO CLOSURE**

- Notify Environmental Compliance of impending hazardous or universal waste removal
  - Down to the wire for disposal
  - Submit all hazardous waste online
  - Submit unwanted chemicals as surplus, on a spreadsheet to the Environmental Compliance Manager for the specific campus
- Remove radioactive waste according to normal pickup routine
**At Least 2 Weeks Prior to Closure**

- Begin donating viable chemicals, supplies, and equipment to other labs; decide what will become departmental property and what will remain for the new lab
  - **Highly hazardous/regulated materials should not change hands without prior approval!**
    - Select agent materials
    - DEA materials
    - Potentially explosive materials:
      - Ether cans, picric acid, perchloric acid
    - Radioactive materials
    - Hydrofluoric acid
    - Lecture cylinders
    - Toxic gas cylinders
      - CO, fluorine, NO, etc.

- Consult with Environmental Compliance or Biological & Chemical Safety to ship/transport hazardous chemicals, depending on scale
  - Small-scale, such as tubes of material, contact Biological & Chemical Safety for shipping
  - Large-scale, such as freezers full of materials, contact Environmental Compliance for assistance with vendor selection

- Reminder: DO NOT transport or ship hazardous materials without prior approval
  - Even inter-campus moves must use a licensed vendor. **Public road transportation must meet DOT standards**
  - EH&S provides consultation for choosing packing containers for intra-campus moves
  - For intra-campus moves, we will assist in mapping a route that is lower-traffic and as sparsely carpeted as possible

- For shipping or transport of biohazardous materials, you must have current shipping training
  - Small-scale, such as tubes of material, trained individuals can handle
  - Large-scale, such as freezer full of materials, a vendor should be contacted.
**AT LEAST 2 WEEKS PRIOR TO CLOSURE**

- Contact Radiation Safety to arrange for radioactive materials and equipment shipping, transport, or transfer to another approved investigator.
- Return gas cylinders to manufacturer/vendor! If you are unable to do so, please contact the Environmental Compliance Division for disposal options.

**LAB MOVING**

*(A LOT OF VENDOR INVOLVEMENT AT THIS STAGE)*

- Pack and ship lab materials and equipment.
- Fill out RFP forms online at EH&S website for chemical, biological, and universal waste.

**Do not move waste to another area**

- Final radioactive survey and wipe tests by lab staff.
  - All RAM freezers, fridges, centrifuges, etc that will need to be moved by movers should be emptied, defrosted, etc. Send notice to Radiation Safety for a pre-survey of these items.
LAB MOVING
(A LOT OF VENDOR INVOLVEMENT AT THIS STAGE)

- Box glass waste for normal trash removal; remove all remaining materials from lab
  - If you have a lot, contact Custodial Services for a tipcart
    - Danforth campus contact is Robin Kaufold at 935-9314 for evaluation of disposal volume
    - Medical School contacts Housekeeping: 362-3563
  - Custodial Services recycles—request extra recycle bins as needed.
    - Books and paper
    - Some glass
- Final visual survey of area by lab staff
  - Go through every drawer and cabinet
  - It’s extremely common to miss a drawer, and we cannot sign off on a room if there’s any hazardous material left behind. Keep this in mind when scheduling to have workers come in, as this may cause a delay in the construction

FREQUENTLY MISSED ITEMS

- Metal Sharps—razor blades, needles, etc.
- Plastic and glass sharps
  - Pipette tips
  - Leftover/broken glassware
- Squirt and spray bottles of chemicals
- Equipment containing hazardous materials
  - Miscellaneous small equipment
  - Old tissue culture flasks
- Chemicals in cabinets underneath countertops
- Materials in shared areas—cold rooms, equipment rooms, etc.
- Gas cylinders
**LABORATORY CLOSURE CHECKLIST**

<table>
<thead>
<tr>
<th>Task</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>EH&amp;S Biological &amp; Chemical Safety auditor notified of impending lab closure</td>
<td>5/3/2011</td>
</tr>
<tr>
<td>EH&amp;S Radiation Safety inspector notified of impending lab closure</td>
<td>5/3/2011</td>
</tr>
<tr>
<td>Notify EH&amp;S Radiation Safety inspector of impending lab closure</td>
<td>n/a</td>
</tr>
<tr>
<td>Notify EH&amp;S Environmental Compliance of impending chemical waste removal at least two weeks in advance of desired pickup</td>
<td>5/7/2011</td>
</tr>
<tr>
<td>Chemicals/equipment/supplies donated to other labs or department/division</td>
<td>5/7/2011</td>
</tr>
<tr>
<td>Radioactive materials/equipment transferred in conjunction with Radiation Safety</td>
<td>n/a</td>
</tr>
<tr>
<td>RFP forms submitted to EH&amp;S</td>
<td>5/5/2011</td>
</tr>
<tr>
<td>Hazardous and/or unwanted chemical waste removed</td>
<td>5/7/2011</td>
</tr>
<tr>
<td>Biohazard and sharps waste removed</td>
<td>5/9/2011</td>
</tr>
<tr>
<td>Radioactive waste removed</td>
<td>5/10/2011</td>
</tr>
<tr>
<td>Universal waste equipment removed</td>
<td>5/10/2011</td>
</tr>
<tr>
<td>Gas cylinders returned to vendor</td>
<td>5/12/2011</td>
</tr>
<tr>
<td>Fume hood cleared of all materials</td>
<td>5/14/2011</td>
</tr>
<tr>
<td>Department/Division common areas (cold rooms, warm rooms, tissue culture rooms, equipment rooms) cleared of all materials</td>
<td>5/14/2011</td>
</tr>
<tr>
<td>Surplus equipment clearly marked for donation or retention by incoming investigator</td>
<td>5/14/2011</td>
</tr>
<tr>
<td>Final visual survey and wipe tests of lab and common areas by lab staff</td>
<td>n/a</td>
</tr>
<tr>
<td>EH&amp;S Biological &amp; Chemical Safety auditor notified that lab areas are ready for inspection</td>
<td>5/14/2011</td>
</tr>
<tr>
<td>EH&amp;S Radiation Safety inspector notified that lab areas are ready for survey and inspection</td>
<td>5/14/2011</td>
</tr>
<tr>
<td>Design &amp; Construction notified that lab areas are ready for asbestos survey (if necessary)</td>
<td>n/a</td>
</tr>
<tr>
<td>All necessary signatures obtained on Laboratory Safety Status form</td>
<td>n/a</td>
</tr>
<tr>
<td>Copy of Laboratory Safety Status form sent to EH&amp;S</td>
<td>n/a</td>
</tr>
<tr>
<td>Custodial services contacted for cleaning of lab areas</td>
<td>n/a</td>
</tr>
<tr>
<td>EH&amp;S notified of new investigator arrival in lab</td>
<td>n/a</td>
</tr>
</tbody>
</table>
LAB EMPTY

- Post Laboratory Safety Status Form on the doors of all areas being decommissioned
- Contact Radiation Safety inspector and Biological & Chemical Safety auditor for final inspections; they will sign the Laboratory Safety Status Form when the lab passes inspection
  - It may take a day or two from when the inspector and auditor is contacted, to completing the final inspection. Please keep this in mind when scheduling renovation
- Send copy of signed Laboratory Safety Status Form to EH&S (Campus Box 1010)
- Contact custodial services for cleaning or construction contractors for renovations to begin

LABORATORY SAFETY STATUS FORM
REMINDERS

- Clear out **all** lab spaces under investigator’s control
  - Including common areas (cold rooms, warm rooms, scope rooms, equipment rooms, dark rooms, etc.)

- Custodial services and construction contractors cannot enter lab spaces until **all** necessary signatures are obtained on Laboratory Safety Status form
  - If a sign is not present, it could cause a delay in the work order request to have the space cleaned
  - It is in the department’s best interest to have areas to be renovated, however, minor, officially closed out by EH&S for the protection of any contract workers that may be involved in construction

- Contact auditor and inspector when new investigator moves in or current investigator returns after renovations
  - New investigators will need a Blue Book rollout

ENVIRONMENTAL HEALTH & SAFETY

JUNE 2011

QUESTIONS?

THANK YOU!

MICKEY CROYLE
DONNA HALL
ERIC KNOLL
REBECCA RIVERA