Laboratory Start-Up and Closeout Procedure

1.0 Purpose and Scope

1.1 The purpose of this procedure is to help new faculty with establishing a safe and compliant laboratory and to provide guidance to existing faculty to ensure proper decommissioning or relocation of existing laboratories.

2.0 Responsibilities

2.1 Department Chair / Dean

- 2.1.1 Ensures that faculty in the department/college receive communication of this procedure.
- 2.1.2 Notifies RMS (labsafety@nd.edu) when new research faculty are hired if they will be assigned a laboratory.
- 2.1.3 Notifies RMS (labsasfety@nd.edu) at least 30 days (or as soon as reasonably possible) before faculty will be vacating their lab space(s).
- 2.1.4 Assumes the responsibilities or identifies a Laboratory Director/Principal Investigator when the space is a shared area such as a cold room or cell culture room.
- 2.1.5 Accepts the fees associated with the disposal of hazardous materials and/or waste left if the Principal Investigator vacates the laboratory without complying with this procedure.

2.2 Laboratory Directors or Principal Investigators

- 2.2.1 Become familiar with New Faculty Information (see Appendix A)
- 2.2.2 Become familiar with Laboratory Start up Check list (Appendix B)
- 2.2.3 Forward the hazardous materials inventory to RMS.
- 2.2.4 Complete Laboratory Close-Out Checklist (see Appendix C) and contact RMS two (2) weeks prior to vacating laboratory space to schedule a RMS Lab Close Out Assessment (see Appendix D).
- 2.2.5 Work with the Building Manager and RMS to ensure the proper relocation or disposition of hazardous materials and/or waste in the lab.

2.3 Risk Management and Safety (RMS):

- 2.3.1 Contact new faculty to provide laboratory start up information.
- 2.3.2 Conduct initial lab safety inspections for all new researchers and newly assigned spaces for current researchers.
- 2.3.3 Conduct pre-closeout assessments to develop an exit strategy.
- 2.3.4 Conduct decommissioning (Close Out) inspections.
- 2.3.5 Arrange lab cleanouts (chemical removals) from university contractor upon departmental request.
- 2.3.6 Provide guidance on shipping requirements of DOT Dangerous Goods.

3.0 New Laboratory Start-Up Procedures

3.1 Department shall notify RMS, 30 days prior to start date, or as soon as reasonably possible, when new faculty have been hired and will require laboratory space.

3.2 RMS will reach out to the new faculty with start-up information (Appendix A and B)

3.3 RMS will schedule a start-up inspection.

3.4 Principal Investigator shall provide RMS an inventory of all hazardous materials (chemicals, radioactive materials, lasers, biological materials, and select agents) that will come to campus.

3.5 Principal Investigator shall provide their department a list of equipment and, where applicable, decontamination certificate for equipment that will come to campus.

3.6 Lab Space Acceptance

3.6.1 Principal Investigator shall walk through the lab to accept or reject any remaining chemicals and/or equipment.

- If there are unwanted "legacy" chemicals and equipment the PI shall request the department remove prior to moving into the lab.
- It is the responsibility of the Department to cover disposal costs if any chemicals or equipment are left and not wanted by the incoming researcher.
- All accepted "legacy" chemicals and equipment become the sole responsibility of the new PI.
- As chemicals are transferred from one owner to another, the owner and location must be updated in SafetyStratus Chemical Inventory Management Platform for chemical and hazard tracking.

3.7 The PI shall submit Required Protocols as appropriate

3.7.1 Institutional Biosafety Committee (IBC) – Work with Biohazards (blood, other bloodborne pathogens, cell/tissue cultures, parasites, bacteria, fungi, viruses, etc.) and Recombinant DNA (rDNA).

3.7.2 Institutional Animal Care, Use and Control Committee (IACUC) – animal work

3.7.3 Institutional Review Board (IRB) – Human subject work

4.0 Laboratory Closeout Procedures

4.1 Department shall notify RMS 30 days (or as soon as possible) prior to any faculty leaving the University that will require lab decommissioning.

4.2 Department shall notify RMS 30 days (or as soon as possible) prior to any faculty moving lab space on campus.

4.3 Faculty shall review the Laboratory Closeout Checklist (Appendix C)

4.4 Faculty, in conjunction with Building/Facility Manager, will contact RMS when the lab has been cleaned out and is ready for closeout (decommissioning). The lab will only be considered decommissioned once all hazards have been removed from the space and Appendix D has been completed by RMS. See Appendix C and D.

4.5 Upon receipt, RMS shall schedule a walk through to review the closeout checklist.

4.6 RMS will provide a completed RMS lab close out assessment to Facilities Design and Operations and/or the department upon request, before laboratory renovations begin.

5.0 PI (or designee) needs to complete these items prior to contacting RMS for a closeout/decommissioning assessment

5.1 PI is responsible for general housekeeping including but not limited to:

- 5.1.1 Hoods cleaned out and wiped down.
- 5.1.2 Bench tops and other work surfaces wiped down.
- 5.1.3 Storage cabinets cleaned out and wiped down.
- 5.1.4 Broken glass placed in broken glass container.

5.2 Biohazards and Biological Wastes

- 5.2.1 Identify biohazardous materials that will be relocated on campus or to a new institution.
- 5.2.2 Make arrangements to ship biohazards per DOT/IATA regulations.
- 5.2.3 Place all sharps in a sharps container and dispose through RMS.
- 5.2.4 Collect and autoclave all biohazardous waste. Double bag waste after autoclaving.

5.3 Chemicals and Chemical Waste

- 5.3.1 All containers shall be properly sealed (parafilm is acceptable, foil is not acceptable).
- 5.3.2 All chemical containers shall be properly labeled (chemical name without abbreviations, concentration if appropriate, and hazard class).
- 5.3.3 Update SafetyStratus inventory of all chemicals that will be left for the next PI and ensure the Department Chair and RMS are aware chemicals are being left.

5.3.4 All waste containers shall be properly labeled with a completed chemical discard tag.
5.3.5 All unknowns shall be identified (at a minimum fingerprinted: pH, inorganic, organic, possible heavy metals) and be labeled with a completed chemical discard tag.

5.4 Radioactive Hazards
5.4.1 Identify radioactive materials, sources and radiation producing machines that will be relocated on campus or to a new institution.
5.4.2 Make arrangements to ship radioactive materials per DOT / IATA regulations with assistance from RMS.
5.4.3 Contact RSO to perform a closing contamination survey of all labs where radioactive materials were used.
5.4.4 Only RMS can close a laboratory to radioactive materials.

5.5 Controlled Substances
5.5.1 All controlled substances shall be kept under lock and key, in a substantially constructed cabinet or safe until disposed or relocated.
5.5.2 Arrange to keep all Controlled Substance records at least three (3) years.
5.5.3 Make arrangements for either the destruction of unused controlled substances or to ship your controlled substances per DOT / IATA by emailing compliance@nd.edu.

5.6 Physical Hazards
5.6.1 Refrigerators/Freezers shall be cleaned and defrosted.
- If refrigerator and contents are remaining, arrangements shall have been made to transfer ownership of refrigerator and contents to another PI.
- If any refrigerators/freezers and contents shall be moved to another institution, arrangements must be made with a licensed mover.
- Refrigerators/freezers that need to be disposed must be made known to the building manager. A fee for refrigerant disposal may be required.

5.6.2 Any equipment that will be moved to another institution (centrifuges, liquid scintillation counters, Biosafety Cabinets, etc.) shall be decontaminated prior to shipping.
5.6.3 Lab equipment that will be discarded shall be decontaminated prior to departure.
5.6.4 Lab equipment that will be left for the next occupant shall be decontaminated prior to departure.

5.6.5 Specialty lab equipment (Lasers, microscopes, gravity presses, Universal Testing Machines etc.) shall be de-energized prior to departure.

5.7 Laboratory Close Out

5.7.1 Once PI (or designee) has completed the laboratory close out checklist (Appendix C), contact RMS for a final closeout assessment (Appendix D).

5.7.2 RMS will verify that all necessary steps have been taken to leave the space hazard-free.

5.7.3 RMS will communicate the state of the lab to the PI (or designee) as well as the affected department.

Appendix A
New Faculty Information (*This checklist does not need to be submitted.)*

The intent of this checklist is to help incoming faculty new to the University of Notre Dame navigate regulatory compliance and University procedures as they establish their laboratories. Research requiring approvals from a University committee or Risk Management and Safety are identified and appropriate contact information is provided. Understanding the requirements and starting the approval process prior to arrival helps to facilitate the prompt start-up of research programs at the University of Notre Dame.

Consideration	Yes	No	Action/Contact
Grant Transfers			Contact: Office of Research, 574-631-7432
Material Transfer Agreement (MTA)			Contact: Office of Research, 574-631-7432
Transfer equipment from another institution.			Develop an inventory of the laboratory equipment - including but not limited to: ● Refrigerators/Freezers ● Incubators ● Biosafety cabinets ● Centrifuges ● Lasers ● Machine shop equipment (band saws, drill press, lathe, etc.) ● Hoists/Lifts/Rigging Equipment ● Signed documentation from former institution regarding ownership If there is potential for biohazard, chemical or radiological contamination, there shall be a decontamination certification - including but not limited to: ● Biosafety cabinet ● Centrifuges ● Cell sorters ● Incubators ● Vacuum pumps The equipment inventory shall be sent to their Department Coordinator at least four (4) weeks prior to shipment. Contact: Procurement Services, 574-631-4289.
Transfer chemicals, biohazards (viruses, bacteria, fungi, parasites, cell lines, blood and tissues) and select agents.			Forward inventory (of all the materials to be moved to the University of Notre Dame) to Risk Management and Safety. Shipping of chemicals, biohazards, and select agents may require a DOT trained/licensed transporter package and ship.

			Contact: EHS at originating institution or the Biosafety Officer, Risk Management and Safety, (574)631-5037
Transfer radioactive materials or radiation producing equipment.			Radioactive materials or Radiation Producing Equipment must meet the University of Notre Dame's Radiation License requirements. Conduct an inventory of all materials to be moved to campus and forward to the Radiation Safety Officer at least three (3) weeks prior to shipment: ● Liquid Scintillation Counter ● X-Ray units ● Isotopes ● Sealed and Non-Sealed Sources ● Lasers Contact: Radiation Safety Officer, Risk Management and Safety, (574)631-5037
Research work involving rDNA, biohazards including but not limited to viruses, bacteria, human cell lines, mammalian embryonic stem cells and/or Select Agents.			This research work requires an approved University of Notre Dame Institutional Biosafety Committee (IBC) protocol. Form can be found at https://nd.keyusa.net/. Contact: Notre Dame Research Compliance
Research work involving human subjects.			This research requires an Institutional Review Board (IRB) approval. Form can be found at https://nd.keyusa.net/. Contact: Notre Dame Research Compliance
Research work involving animals.			Work involving animals requires an approved Institutional Animal Care and Use Committee (IACUC) protocol. Form can be found at https://nd.keyusa.net/. Contact: Notre Dame Research Compliance
Research work involving radioactive material or radiation producing machines.			This research requires approval from the University's Radiation Control Committee. Form can be found at the RMS Radiation Safety Website. Contact: Radiation Safety Officer, Risk Management and Safety, (574)631-5037
Research requiring controlled substance registration and use.			Requires FDA license and regulations. Contact Research Integrity: Controlled Substances

Research work involving explosives, Investigative New Drug, importing vectors or plants.			Any other government agency licenses, permits, including but not limited to Food and Drug Administration (FDA), Alcohol, Tobacco and Fire Arms, (ATF), US Dept. of Agriculture (USDA), Indiana Dept. of Natural Resources (DNR) Contact: Chemical Hygiene Officer, Risk Management and Safety, 574-631-5037
Research involving other special concerns (not covered above).			Contact: Department Coordinator

Appendix B
Laboratory Start Up Checklist

- Become familiar with the Risk Management and Safety Website
    - This website contains the Lab Safety Manual/Chemical Hygiene Plan, Chemical specific safety procedures, Biological Safety Manual, information on hazardous waste disposal, and information on incident reporting, among other safety topics.
- **Emergency Contact Sign:** To be posted on the exterior of all doors.
- **Training Needs Assessment Form:** This form identifies the necessary online training for your lab. Please retain a copy for audits.
- **PPE Assessment Form:** This form determines the required PPE for specific lab procedures. Please retain a copy for audits.
- **PPE Certification Form:** Print this form and have all lab members sign, acknowledging the university's PPE requirements.
- **Emergency Action Plan Template:** Use this template to locate your building and fill in the required information. Once complete, the plan should be printed and reviewed with all lab personnel.
- **Lab Specific Training Sign in Sheet:** This sheet is mandatory for activities involving hazards (e.g., centrifuges, lasers, liquid nitrogen dewars). Each lab is responsible for developing its own Standard Operating Procedures (SOPs), but there is no required template
- Reach out to labsafety@nd.edu with any laboratory related questions and to schedule your lab safety start up assessment.

Appendix C
Laboratory Closeout Checklist (*this checklist does not need to be submitted)*

TASK	Date Completed or N/A
Biohazardous Materials	
Sharps (razor blades, syringes, scalpel blades) collected and placed in sharps containers for disposal with RMS.	
Collect and autoclave all biohazardous waste. Double bag for trash disposal.	
Moving biohazards off campus, arrangements made for shipment.	
Clean and disinfect work surfaces, refrigerators, incubators, centrifuges, etc.	
Chemicals	
Inventory of chemicals completed and provided to the Department Chair.	
Moving chemicals off campus, arrangements made for shipment	
Transfer ownership of chemicals to another PI who has agreed to take them.	
Identify unknowns: Fingerprinted (pH, inorganic/organic/heavy metals).	
Label all wastes with a chemical discard tag.	
Dispose (or arrangements made for disposal) of all unwanted chemicals through RMS.	
Place broken glass in sharps container.	
Clean all surfaces with detergent.	
Controlled Substances	
If transferring substances to another DEA registrant, submit appropriate forms to the DEA prior to transfer.	
If disposing substances, submit appropriate forms to the DEA prior to and after disposal.	
Conduct appropriate transfer or disposal of controlled substances.	
Gas Cylinders	
Remove regulators/gas connections and replace safety caps.	
Return to supplier.	
Contact RMS to arrange for disposal of non-returnable cylinders.	
Radioactive Materials, Sources, Radiation Producing Machines	
Inventory of radioactive materials, sources and/or radiation producing machines that will be moved to another institution	
Arrangements have been made to ship materials/equipment.	
If transferring materials to another RI at Notre Dame, notifications have been made to Risk Management and Safety.	
Prepare wastes for disposal.	
Arrangements have been made for RMS to conduct final decommissioning inspection.	

Equipment	
Clean and decontaminate equipment that will be moved or left in place. Remove all fluids from equipment.	
Contact building manager for assistance with disposal of equipment, including refrigerators and freezers.	
Shared Space	
Check all shared spaces for chemicals, biohazardous materials and radioactive materials and sources.	
Clean all work surfaces.	
Department Sign-Off	
Once complete the space is ready for an RMS lab close out assessment	

Appendix D
RMS Lab Close Out Assessment

This assessment is to facilitate the relocation or shutdown of all Notre Dame laboratories (including shared laboratories) that utilize hazardous materials or equipment. The intent is to ensure all potentially hazardous items have been removed from the lab space.

- Reagents, chemicals, and samples were removed from refrigerators, freezers, cold rooms, storage rooms, closets, etc., including common areas and destroyed, inactivated, or transferred to an appropriate location.
- All biohazardous waste has been removed from the laboratory and properly sterilized.
- All radioactive waste has been picked up.
- RSO has conducted a final contamination survey.
- All class 3B and 4 laser disposition has been discussed with Laser Safety Officer
- All hazardous waste has been removed from the laboratory via hazardous waste discard tags or laboratory clean out.
- All broken glassware and sharps have been appropriately discarded.
- All potentially biologically-contaminated laboratory equipment has been cleaned or decontaminated with 10% bleach or 70% ethanol, as appropriate for the respective biological agent usage. All biohazard labeling has been removed
- Biosafety cabinet surfaces, bench tops, and areas where biological agents were used or stored, were washed with an appropriate decontaminant; 10% bleach, 70% ethanol, or soap and water, as appropriate.
- All fume hoods, bench tops, and other areas where chemicals were used or stored have been wiped down with soapy water or other appropriate cleaner, such as a 25% solution of Simple Green.

Comments/Concerns:

Name of individual performing closeout procedures: _____

PI responsible for space: _____

Close out/Relocation Lab inspection date: _____

Building and room number(s) of spaces being vacated: _____

RMS Lab Safety performing close out assessment: _____