 <b>Cornell University</b> <b>Office of the Vice Provost for Research</b> <b>Weill Hall Life Science Technology Building</b>	<b>Standard Operating Procedure</b>	
<b>Title:</b> Pre-Operational Safety, Health & Environmental Review Procedure (POSHER)	<b>Number:</b> WH-SOP-01	<b>Revision:</b> #8 12-29-09

### 1.0 Scope and Application:

- 1.1 The POSHER process, or Pre-Operational Safety, Health and Environmental Review process assists in the prevention of workplace injuries by reviewing new equipment, processes, and laboratory procedures before installation, use, or application.
- 1.2 The scope of equipment, processes and procedures used includes major or specialized equipment and machinery, laboratory procedures and equipment involving bio-hazardous agents, recombinant DNA molecules, ionizing radiation sources (radioactive materials and radiation producing equipment), non-ionizing radiation (e.g. RF/microwave, lasers, magnetic fields, etc.), hazardous chemicals, pesticides, reproductive health hazards or any other significant hazard that merits review for risk mitigation.
- 1.3 The POSHER review process is not intended to duplicate the review efforts of the Institutional Biosafety Committee (IBC), the Institutional Animal Care and Use Committee (IACUC) or other organizations providing compliance oversight, but only to ensure that the proper reviews and approvals have been obtained for the research protocols.
- 1.4 The POSHER review process also does not include the review of protocols concerning the use of non-human vertebrates or the requisition of such animals. Protocols and hazards associated with research animal care and use facilities are governed and monitored by the Institutional Animal Care and Use Committee (IACUC), which assures compliance with applicable laws, regulations, and policies. Cornell University's Animal Users Health and Safety Program (AUHSP), a shared responsibility among IACUC, the Cornell Center for Animal Resources and Education (CARE), Environmental Health and Safety (EH&S) and Gannet Health Services, has responsibility for establishing institutional occupational health and safety policy and procedures for animal users and other individuals having direct and indirect contact with animals used in research and teaching. The POSHER review simply checks to ensure that the IACUC provided approval for applicable research protocols.
- 1.5 The scope of review of each of these processes or pieces of equipment includes installation requirements, user training requirements (user interaction, instrument start-up, shut-down), equipment maintenance, chemical or hazardous material acquisition and handling, hazardous waste generation and removal, special safety process requirements, emergency considerations, and impact to adjacent occupants.
- 1.6 The review process includes completion of pertinent portions of a POSHER review form, as well as review of equipment schematics and standard operating procedures, where applicable. For some hazardous processes and equipment, inclusion of standard operating procedures, permits and registrations (e.g. Institutional Bio-safety Committee MUA, EH&S radioactive materials and radiation producing equipment permits and registrations, etc.) may alone provide enough information for review without further or substantial completion of the POSHER form.

### 2.0 Purpose:

- 2.1 To provide a consistent risk assessment and mitigation tool for reviewing new or substantially modified research equipment or protocols prior to allowing their use.
- 2.2 To prevent injuries and accidents, increase safety awareness and identify facility hazards, ensure proper equipment installation, and meet requirements of environmental and occupational health and safety laws and regulations via a thorough review of the new or modified hazardous laboratory protocols or equipment.
- 2.3 To ensure that hazardous material quantities and usage meet the requirements of the Weill Hall building code variance issued by the City of Ithaca.

### 3.0 Responsibilities:

- 3.1 **Facility Director** – the Facility Director or designee will ensure that this procedure is communicated to all building occupants and all affected parties. The Facility Director is also empowered to immediately




shut down any operation that he/she deems to be imminently hazardous to the building occupants, adjacent populations, or to pose an imminent environmental risk.

- 3.2 Facility Management Committee** – the Facility Management Committee will approve modifications to this policy if required and will establish penalties for non-compliance with this policy.
- 3.3 Principal Investigator** – the Principal Investigator shall complete the POSHER review for all proposed operations applicable to this procedure, and will implement the administrative and engineering controls identified during the review.
- 3.4 Safety Committee** – the Safety Committee will ensure that new types of research are submitted, reviewed, and approved under the POSHER process.

**4.0 Procedures:**

- 4.1** Before the installation of new equipment or adoption of hazardous processes or procedures associated with laboratory use in the Weill Hall Life Science Technology Building, the Principal Investigator (PI) or Project Leader must contact the Facility Director to initiate a POSHER review form and to schedule a review and inspection.
- 4.2** A significant change in quantity of a hazardous chemical, a modification to an instrument or procedure, or other similar changes triggers a POSHER re-review; additional information about the equipment or process change will need to be added to the form and be reviewed.
- 4.3** The laboratory PI, Lab Safety Officer, Department Safety Representative (DSR), or similar unit leader should be the main determiner of when the POSHER process be followed, and to identify the associated risks.
- 4.4** The Facility Director will track and manage the POSHER review process and keep records of completed and pending POSHER’s. The POSHER review is for internal use and is confidential.
- 4.5** The POSHER will be conducted as a team review session and will typically include the following personnel:
  - 4.5.1** Weill Hall Facility Director
  - 4.5.2** Principal Investigator
  - 4.5.3** Lab Safety Officer or Department Safety Representative
  - 4.5.4** A Weill Hall Safety Committee Member
  - 4.5.5** An EHS Team Representative

**Note:** If one of the above members is not available, an alternate may be selected with approval from the Facility Director.
- 4.6** The POSHER process is a review of equipment operation or procedure completion following the process through from start to finish. The description of the equipment operation or procedure should be detailed enough so that those reviewing the documentation understand the operation and the potential hazards it presents. For equipment, aspects and details of maintenance operations, chemical delivery, operator interaction, start-up, shut-down, and waste disposal should all be included in the POSHER form. Photographs and board sketches are also useful to explain the equipment. The layout should include all peripheral equipment such as chillers, pumps, scrubbers, gas boxes, etc.
- 4.7** If possible, the equipment owner should include the following information with the POSHER form: equipment manual, standard operating procedure (SOP), chemical use information, picture of the equipment, and an MSDS for each hazardous chemical used. For laboratory procedures, additional documentation may include copies of standard operating procedures, and/or permits and applications, such as the EH&S Radioactive Materials User Permit and the Institutional Bio-safety Committee MUA. In some cases, these documents may provide adequate information to assess safety, health, and environmental risks and requirements without additional POSHER documentation.
- 4.8** All open action items identified during the POSHER must be documented and completed before the new or modified research process can begin within Weill Hall. It is the PI’s responsibility to ensure all action items are complete, documented on the POSHER form, and communicated to the Facilities Director before beginning research activities.

	<b>Cornell University</b> <b>Office of the Vice Provost for Research</b> <b>Weill Hall Life Science Technology Building</b>	<b>Standard Operating Procedure</b>	
<b>Title:</b> Pre-Operational Safety, Health & Environmental Review Procedure (POSHER)		<b>Number:</b> WH-SOP-01	<b>Revision: #8</b> 12-29-09

## 5.0 References:

### 5.1 Definitions:

- 5.1.1 **POSHER:** Pre-Operational Safety, Health and Environmental Review – a POSHER must be completed before new or substantially modified research can be conducted in Cornell University’s Life Science Technology Building (Weill Hall). The POSHER is approved by the Weill Hall Safety Committee.
- 5.1.2 **IBC:** Institutional Biosafety Committee – Cornell University's IBC reviews and approves all research and teaching activities involving the use of biohazardous agents on the Ithaca and Geneva campuses and other sites under the control of Cornell faculty, students and staff. The IBC works to ensure that all research involving biohazardous materials and the facilities used to conduct the research are in compliance with existing government regulations and applicable University policies.
- 5.1.3 **MUA:** Memorandum of Understanding & Agreement - Principal Investigators must fill out a MUA for all research and teaching activities involving the use of regulated recombinant DNA and biohazardous materials. MUA’s are approved by the IBC.
- 5.1.4 **IACUC:** Institutional Animal Care & Use Committee – Before any animals can be acquired for use in research and teaching at Cornell, the principal investigator must submit a detailed scientific justification of their use as part of a formal “Protocol Review Form for the Use of Live Vertebrates in Research, Teaching, or Demonstration” to the Cornell University IACUC. This protocol describes everything that happens to an animal from the outset of a proposed experiment until its conclusion. The protocol must be approved by the IACUC and is required by peer-reviewed professional journals for publication of research results.
- 5.1.5 **Form 10:** The Form 10 is the application form for the Internal Academic Approval of Sponsored Programs. This form requests research compliance certifications similar to the POSHER.
- 5.1.6 **RSC:** Radiation Safety Committee - All possession and use of radioactive material at Cornell requires formal written authorization issued by the Radiation Safety Officer (RSO) and/or the RSC. A permit or registration is also required for the use of sealed sources of radioactive material. Applications for permits and registrations are reviewed by the Radiation Safety Officer (RSO) before being submitted, if necessary, to the RSC.
- 5.1.7 **RPE:** Radiation Producing Equipment - The radiation safety committee (RSC) is responsible for insuring that RPE is operated safely and that personnel dose from ionizing radiation produced by this equipment is kept as low as reasonably achievable. A permit or registration must be obtained from the RSO in advance of any use or acquisition (by purchase, transfer, loan, donation or otherwise) of ionizing RPE at Cornell. A permit is issued for operational RPE while a registration is used for inoperable RPE or RPE in storage.
- 5.1.8 **Major or specialized equipment and machinery:** includes lasers, forklifts and motorized equipment, equipment that uses compressed gas or hazardous chemicals, equipment that may expose workers to interact with moving mechanized parts, equipment requiring specialized installation conditions.

### 5.2 Related Documents/Procedures:

- 5.2.1 OSHA Hazard Communication Standard 29CFR1910.1200
- 5.2.2 American National Standard for Safe Use of Lasers, ANSI Z136.1

## 6.0 Records:

- 6.1 The Facility Director will maintain copies of all completed POSHER’s until the research project is completed or modified, at which time a re-review will be required.



**Cornell University**  
**Office of the Vice Provost for Research**  
**Weill Hall Life Science Technology Building**

**Standard Operating Procedure**

**Title:** Pre-Operational Safety, Health & Environmental  
Review Procedure (POSHER)

**Number:**  
WH-SOP-01

**Revision: #8**  
12-29-09