Health and Safety Procedure - Laboratory (Research) Safety

Section 1 - Background and Purpose

(1) Laboratories are facilities that provide controlled environments in which scientific or technological research, experiments, and measurement are performed. La Trobe University has a significant number of laboratories that support the core operations of teaching, learning and research. Examples of such facilities range from conventional chemical, anatomical, engineering and geomorphology laboratories to contemporary human movement, health monitoring, and information systems laboratories. The work undertaken can range from observational work to complex undertakings and lead innovation research.

(2) The purpose of this Procedure is to address the hazards and possible heightened risk associated with research work that is undertaken in laboratory facilities. Also to outline a risk management approach in planning and executing laboratory work with the intent of ensuing common standards and practices, including suitable personal protective equipment and adequate levels of oversight.

(3) This procedure aligns with Australian Standard AS2243.1:2005 Safety in Laboratories:

a. Part 1: Planning and Operational Aspects
b. Part 2: Chemical Aspects

Section 2 - Scope

(4) This Procedure applies to all research laboratories that are managed and operated by La Trobe University.

Section 3 - Policy Statement

(5) Refer to the University Health and Safety Policy and the University Biosafety and Biosecurity Policy.

Section 4 - Procedures

Part A - Responsibilities

Research Directors

(6) Research Directors are responsible for:

a. Seeking assurance that laboratory work is planned, risk assessed and safely conducted
b. Confirming the acceptance of residual risk for completed risk assessments
c. Seeking assurance for adequate controls that are commensurate to the risk
d. Seeking assurance that processes are in place to respond to incidents

e. Leading incident investigation, ensure any recommendations are implemented and learnings shared
f. Seeking assurance that laboratory inspections and reviews to occur periodically for hazard management and continuous improvement

Research Supervisors

(7) Research Supervisors are responsible for:

a. Ensuring that laboratory work is planned, risk assessed and safely conducted
b. Providing confirmation of residual risk acceptance from each risk assessment
c. Ensuring risk controls are in place and operational
d. Ensuring personal protective equipment (PPE) requirements are adhered to
e. Following processes to respond to incidents and emergencies
f. Participating in incident investigation and share any learnings
g. Ensuring periodic laboratory inspections and reviews for hazard control and continuous improvement

Researchers, Higher Degree by Research (HDR) Students and Technical Staff

(8) Researchers, HDR students and technical staff are responsible for:

a. Completing all necessary safety induction and training that is requisite to the tasks
b. Following the personal protective equipment (PPE) and general clothing requirements
c. Following safe laboratory practices and processes
d. Stopping the activity if there is immediate danger to health and safety
e. Reporting all hazards and incidents to the relevant research supervisor

Health and Safety Team

(9) The Health and Safety Team are responsible for:

a. Providing oversight and monitor this procedure
b. Advising on hazards and risk assessments as required
c. Advising on risk control measures
d. Supporting incident response, investigation and share the lessons learnt across the organisation

Part B - General

(10) Laboratory work will vary widely, presenting differing levels of hazard and risk with consideration to the type of activity undertaken. The following groupings are indicative categories to assist aligning the level of risk assessment, personal protective equipment (PPE) requirements and supervision that is required.

(11) Each research investigation will be accompanied by risk assessments that are reviewed and confirmed by research supervisors to ensure all undertakings are deeply considered and carefully planned for. These risk assessment requirements will align with those set by the Research Office.

Low Risk Activity

(12) Observational laboratory work or theoretical modelling for the purpose of research that is of low risk to Health and Safety. Examples include health monitoring and computer modelling.

General Laboratory Activity

(13) Practical activities that are typically associated with laboratories such as experimental work using chemical substances and specialised equipment. Examples are typically wet laboratory activities.

Complex and Heightened Risk Activity

(14) Activity which includes hazardous substances, biological models and complex equipment that poses heightened risk due to the inherent risk or because the combination is being utilised for the quest of frontier research.

Part C - Risk Assessment

(15) The function of risk assessments is raise awareness of the hazards and quantify the risk. This process enables a review of the controls in place relative to the risk and promotes the consideration of additional controls to improve hazard management. The residual risk rating will realistically reflect the remaining risk to ensure that the line of sight to the hazard/s is not lost nor diminished.

Part D - Laboratory Safety Induction

(16) In addition to the general Health & Safety induction that is completed as part of the on boarding process, a laboratory safety induction will be completed and include practical skills induction for specific equipment or techniques that will be utilised.

(17) Each school will develop a range of inductions to capture the differing hazards relative to the research being proposed and conducted and to the level of risk.

Part E - Personal Protective Equipment (PPE)

(18) The selection of personal protective equipment (PPE) will be guided by the type of laboratory activity under consideration and in consideration of the risk.

a. As a minimal requirement, staff and students participating in general laboratory activity will wear enclosed footwear.
b. Where activities include the use of mechanised equipment, heat source or naked flame, flowing garments such as headscarves and gowns will be tucked in and long hair will be tied back.
c. In wet laboratories, participants will ensure legs are protected by clothing and lab coats are used.
d. Risk assessment will identify additional requirements for PPE such as eye protection, hearing protection, gloves, face masks, hair nets, disposal coats or suits and shoe covers.

Part F - Laboratory Supervision

(19) Post graduate and research work is undertaken under the broader supervision of the assigned supervisor. The supervisor will have an overarching understanding of the work being conduction and will provide direct supervision as dictated by the levels of researcher experience and the level of inherent risk of the activity.

Part G - Working Alone

(20) Work commitments and specialised facilities create circumstances when researchers sometimes work alone or the work occurs outside normal working hours. In these instances the consequential risk of some hazards may increase due to the reduction of immediate assistance in the event of an incident.

(21) Where a risk assessment identifies the activity to be undertaken as high risk, then that work will not proceed

when working alone without a documented communication plan that is signed off and monitored by the supervisor.

(22) The following are examples of activities that will not be undertaken alone without additional communication controls that are agreed and actively managed:

a. Operating equipment of machinery that is capable of inflicting serious injury
b. Using apparatus that could result in the release of high energy or significant levels of toxic or environmentally damaging hazardous material
c. Working with toxic or corrosive substances where there is a significant risk of exposure
d. Handling venomous biological specimens
e. Working with large animals, other than feeding or observation
f. Working with microorganisms of Risk Group 3 or higher or work that requires the use of a Containment level 3 facility
g. Working with exposed energised or electrical systems
h. Operating lasers of Class 3 and above
i. Working with radionuclides that requiring adherence to the National Radiation Laboratory code
j. Working in environments, not at atmospheric pressure and where there is a risk of low oxygen or a toxic atmosphere

Part H - Immunisation

(23) Specific immunisation is essential before commencing laboratory work that involves a heightened risk of infection. The possibility and type of infection should be risk assessed and appropriate controls developed.

(24) It is recommended that all researchers undertaking wet laboratory work have current immunisation for tetanus. Immunisation can be obtained from the medical clinics at each campus or by contacting the supervisor.

a. Hepatitis B immunisation is required before commencing any activity with unscreened human blood or fluids
b. Q fever immunisation is required before commencing any activity with sheep, goats, and cattle or with feral animals
c. Rabies and/or Lyssa virus immunisation is required before commencing any activity with bats or flying foxes

(25) Where the researcher does not complete the required immunisation, this circumstance will be documented and signed by both the researcher and research supervisor to demonstrate knowledge of and the acceptance of the inherent risks.

Part I - Working With Animals

(26) Researchers who are exposed to animal allergens will follow the guideline for working with Animals to manage the inherent risk that are associated with the tasks undertaken. Managing this risk may include Health monitoring and will be determined through a detailed risk assessment that considers the type of allergen, exposure levels, and the tasks undertaken.

Part J - Health Surveillance

(27) Health surveillance will be instigated and managed when a risk assessment determines this requirement in association with the use of a hazardous substance/s. Base line health surveillance will be established before activity commences and undertaken by the medical clinics that are available or associated with the University at each campus. Monitoring will be managed by the research supervisor and records maintained through HR records.

Part K - Disabilities and Medical Restrictions

(28) Where researchers disclose a disability or medical restriction, a risk assessment will be undertaken to identify laboratory activities which may impact the restriction and a plan developed to manage the risk. The plan may include the exclusion to tasks or activities where the levels of control cannot adequately manage the risk. The same process will be followed for pregnancy disclosure.

Section 5 - Definitions

(29) For the purpose of this Procedure:

a. Disability is any continuing condition that restricts everyday activities.
b. Hazard is anything with the potential to cause harm. Potential hazards can be identified on the basis of previous experience or from the anticipation of problems that can be reasonably associated with the activity.
c. Laboratories are facilities that provide controlled environments in which scientific or technological research, experiments, and measurement may be performed. Examples include chemical, anatomical, engineering and geomorphology laboratories and human movement, heath monitoring, and information systems laboratories.
d. Research is the creation of new knowledge and/or the use of existing knowledge in a new and creative way so as to generate new concepts, methodologies and understandings.
e. Risk control is the allocation of resources or methods to eliminate or to minimise, as far as is reasonably practicable, the risk to safety or health from a hazard.

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