Safe Work Practice

Animal Research, Teaching and Testing Projects

1.0 Introduction

Research, teaching and testing projects that utilize animals inherently have a higher level of risk than typical laboratory activities due in part to the unpredictable nature of the animal subjects. This document is to be used to assist a Principal Investigator (PI) who is planning projects involving animals at the University of Alberta (U of A) to ensure all minimal infrastructural and procedural requirements are addressed and essential personal protective measures are available to all personnel directly involved in the project.

2.0 Minimum Requirements

2.1 Procedural

1. The PI must conduct and document a hazard assessment for all research, teaching and testing Animal Use Protocols (AUPs). The format in which the hazard assessment is documented is discretionary; an equivalent format may be used provided the main elements of the process outlined in the Environment, Health and Safety (EHS) Hazard Management Procedure are included in some manner.

- EHS has posted a Hazard Assessment Web Application to assist groups in documenting their hazard assessments. The application is available at: https://www.ualberta.ca/environment-health-safety/self-help/hazard-assessment-web-application.

- When performing a hazards assessment, remember to include the following in the evaluation:
  - Review the basic capabilities of the animal species involved and the specifications of equipment used in the study to identify specific health and safety hazards associated with your activities involving animals.
  - Review Material Safety Data Sheets (MSDS) and Pathogen Safety Data Sheets (PSDS) for the hazardous materials used in the Animal Use Protocol.
  - Review the relevant Safe Work Practices (SWPs) posted at the EHS website (see appended diagram) and incorporate all required controls into the mitigation strategies identified. If SWP required controls cannot be met, the PI must contact EHS via ehs.info@ualberta.ca to discuss possible equivalent controls before initiating work associated with the project.
If working with more than one type of hazardous material or hazardous activity in an AUP, the control measures outlined in the SWPs are to be considered additive. Where a section of the AUP involves multiple hazards and SWPs identify potentially conflicting minimum control measures, the PI will adopt the more rigorous control measure into the hazard assessment. Where the PI cannot determine the more rigorous control, they should contact EHS via ehs.info@ualberta.ca for assistance.

- The PI must include a copy of the completed hazard assessment along with project-specific SOPs when applying to REMO for animal ethics approval of an AUP.
- The PI must provide a copy of the hazard assessment to the Director of the Animal Services that will be supporting the AUP so that identified controls can be communicated to animal care support staff.

2. The PI must develop a Work Alone Protocol to support personnel entering the animal housing and support laboratory facilities to conduct the project and to check on the health of the animals after hours and on weekends.

3. Personnel directly handling preparations of hazardous materials, including waste, or animals previously administered hazardous materials must complete the following training prior to initiating work:
   - Level 1 and 2 animal training for the animal species and in vivo work activities involved,
   - The Workplace Hazardous Materials Information System (WHMIS) and Laboratory Safety EHS on-line safety courses available at https://www.ualberta.ca/environment-health-safety/training, and
   - Review of this SWP, the completed Hazard Assessment and associated project-specific SOPs.

4. Personnel must conduct regular inspections of surfaces in the animal housing and support laboratory facilities to identify faults and/or deterioration. When identified, faults and deteriorations are to be documented and reported to the PI for monitoring and corrective action.

5. All animal carcasses and recognizable animal parts must be either:
   - Returned to the overseeing university animal services for incineration, or
   - Turned over to the university’s CHEMATIX system for incineration.

In either case, documentation accompanying the waste material must properly identify all hazardous materials utilized with the animals. Under no circumstances are animal carcasses or recognizable animal parts to be autoclaved or discarded into the regular waste stream.

2.2 Infrastructural

Animal housing and support laboratory facilities must:

1. Have Standard Hazard Signage from EHS.
2. Be in good condition with:
   - No major chips or cracks in the floors, walls or ceiling,
   - No cracks or chips in work surfaces, shelving and door laminates, and
   - No exposed raw wood surfaces.
3. Be kept clean, and must be kept free of unnecessary obstructions and surplus material.
4. Be maintained with a negative air pressure differential relative to the surrounding area.
5. Be separated from surrounding areas by a door. The door may not be propped open when activities with animals are being conducted and must be securely locked when project personnel and animal care staff are absent.
6. Cover or occlude any windows allowing viewing from public areas into the animal housing and support laboratory facilities in which animals may be present.
7. Have sealed exterior windows when present.
8. Have surfaces that are continuous with adjacent and overlapping materials.
9. Have backsplashes sealed at the wall-work bench junction, when installed.
10. Have an effective pest control program in place. Any rodent or insect pests appearing in the facilities must be reported to EHS via ehs.info@ualberta.ca.
11. Have a hand-washing sink provided as close as possible to the point of exit. The hand-washing sink must be provided with “hands-free” capability or an equivalent hand-washing SOP that prevents the touching of the taps with bare skin (i.e. use of a paper towel to handle the taps) must be developed and documented.
12. Have a dedicated area for paperwork and report writing that is separated from work surfaces used for in vitro and in vivo activities.
13. Have chairs upholstered in non-absorbent material; no cloth-covered chairs are allowed.
14. Have separate, well-spaced wall hooks for the hanging of facility dedicated laboratory gowns or coats in order to prevent contact between the outer surface of one coat or gown with the inner surface of another; coat racks are not acceptable.
15. Conduct any centrifugation of hazardous materials in centrifuges outfitted with safety rotors or buckets that can be moved to a biological safety cabinet or chemical fumehood for loading and unloading.

### 2.3 Personal Protection

1. Personal protective equipment (PPE) must be identified as follows:
   - Activities involved in the preparing of hazardous materials for use with animals, and in the handling of tissue specimens from animals administered
hazardous materials must be reviewed against the EHS Laboratory Personal Protective Equipment Requirements.

- Activities involving the direct handling of animals, soiled cages or animal waste must be reviewed against the Allergen Protection in Animal Research SWP (EHS-SWP-110).
- PPE is additive where the above activities overlap. Where the Laboratory Personal Protective Equipment Requirements and Allergen Protection in Animal Research SWP documents offer conflicting advice, the group is to utilize the higher standard.

2. Additional PPE may be required in animal facilities to protect animal health. Animal health issues may also require that PPE is dedicated to the facility. Personnel are to comply with all additional PPE requirements indicated by the animal holding facility and U of A animal care and welfare policies.

3. Long hair that may become contaminated when working in the animal housing or support laboratory facilities must be tied back or covered.

4. Jewellery that is not completely contained and secure under PPE or that compromises the integrity of the PPE must be removed.

5. Open wounds, cuts, scratches and grazes must be covered with waterproof dressings.

6. When in animal housing and support laboratory facilities, personnel must not:
   - Store, prepare or consume food or drink for human consumption,
   - Apply or remove cosmetics,
   - Insert or remove contact lens,
   - Store personal belongings, or
   - Conduct oral pipetting of any substance.

7. Prior to leaving the animal housing or support laboratory facilities, personnel must wash their hands with soap and water at the designated hand-washing sink.

2.4 Emergency Preparedness/Management

1. Laboratories and animal facilities must:
   - Have ready access to a Type 2 first kit,
   - Have ready access to a spill kit containing sufficient and appropriate absorbent material to handle the maximum volume of liquid material utilized, and
   - Be within a 10 second transit time to an emergency eyewash and emergency shower. If a bottle-type eyewash is used, the saline solution must be regularly replaced as per the manufacturer’s instructions.

2. All incidents involving the spilling or splashing of hazardous materials, or physical injuries, including bites and scratches from animals; no matter how
slight the incident may have initially appeared; must be reported within 24 hours of occurrence to EHS via their Incident Portal.

- If an injury involved potential exposure of the individual(s) to hazardous materials, the submitted report must clearly identify the hazardous material involved and the first aid administered to the affected individual(s).

3. If personnel seek medical attention for an undiagnosed ailment while working in animal housing or support laboratory facilities, they must declare their animal work activities and the associated hazardous materials they are using to the attending physician so that the information can be utilized in the differential diagnosis.

3.0 Applicable Legislation and Regulations

1. Canadian Biosafety Standard, Public Health Agency of Canada
2. Canadian Environmental Protection Act, Environment Canada
4. Health of Animals Act, Canadian Food Inspection Agency
5. Human Pathogens and Toxins Act, Public Health Agency of Canada
6. Human Pathogens and Toxins Regulations, Public Health Agency of Canada
7. New Substances Notification Regulations, Environment and Climate Change Canada
12. Plant Protection Act, Canadian Food Inspection Agency

4.0 Related Resources

1. Biosafety Guidelines, Environment, Health & Safety, University of Alberta
2. Code of Practice: Use or Handling of Radioactive Substances, Environment, Health & Safety, University of Alberta
3. Hazard Assessment and Control Procedure, Environment, Health & Safety, University of Alberta
4. Laboratory Chemical Safety Manual, Environment, Health & Safety, University of Alberta
5. Laboratory Personal Protective Equipment Requirements, Environment, Health & Safety, University of Alberta
7. Safe Work Practice: Allergen Protection in Animal Projects (EHS-SWP-110), Environment, Health & Safety, University of Alberta
8. Safe Work Practice: Needle Safety in Animal Projects (EHS-SWP-120), Environment, Health & Safety, University of Alberta
9. Safe Work Practice: Animal Projects with Biological Materials (EHS-SWP-130), Environment, Health & Safety, University of Alberta
10. Safe Work Practice: Animal Projects with Viable Pathogens (EHS-SWP-131), Environment, Health & Safety, University of Alberta
12. Safe Work Practice: Animal Projects with Toxins and Venoms (EHS-SWP-133), Environment, Health & Safety, University of Alberta
13. Safe Work Practice: Animal Projects with Genetic Vectors (EHS-SWP-134), Environment, Health & Safety, University of Alberta
14. Safe Work Practice: Animal Projects with Chemicals (EHS-SWP-140), Environment, Health & Safety, University of Alberta
15. Safe Work Practice: Animal Projects with Flammable Substances (EHS-SWP-141), Environment, Health & Safety, University of Alberta
16. Safe Work Practice: Animal Projects with Highly Toxic Substances (EHS-SWP-142), Environment, Health & Safety, University of Alberta
17. Safe Work Practice: Animal Projects with Gases Under Pressure (EHS-SWP-143), Environment, Health & Safety, University of Alberta
18. Safe Work Practice: Animal Projects with Cryogens (EHS-SWP-144), Environment, Health & Safety, University of Alberta
22. Safe Work Practice: Animal Projects that Include Use of Designated Equipment (EHS-SWP-170), Environment, Health & Safety, University of Alberta
23. Safe Work Practice: Animal Projects that Include Use of Designated Equipment (EHS-SWP-180), Environment, Health & Safety, University of Alberta
24. Safe Work Practice: Handling Animals Infected with a Zoonotic Pathogen (suspected or confirmed) in the Field (EHS-SWP-190), Environment, Health & Safety, University of Alberta
25. Standardized Hazard Signage, Environment, Health & Safety, University of Alberta
26. Work Alone Process, Environment, Health & Safety, University of Alberta
5.0 Document Management

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