

Addendum 1 - Laurentian University Outline: Animal User Training Program

LEVEL OF TRAINING

NOTE: Training is required for all researchers and students. For students intending to handle rodents, it is compulsory to successfully complete Course 01, 02, and 03. Level 04 will be offered every 6 months and students are strongly encouraged to complete this course.

Note: Completion of each section is contingent on finishing each prior one. For those students intending to give injections, euthanasia, etc., completion of the applicable course is required.

Level 01: Introduction based on: CCAC modules (12 modules for animal facility) and (3 modules for field research). Satisfactory completion of written test.

Level 02: For those wishing entry to the Animal Care Facility. This requires completion of level 01. This consists of a tour of the facility with a focus on Laurentian University regulations as well as facility policies and procedures, including safety regulations.

Level 03: For those wishing to handle animals in the course of their class or research. This consists of satisfactory attendance and performance at the facility “animal handling” lab. This course will include ethics as well as recognition of animal distress and endpoints. Prerequisite: level 02

Level 04: For those wishing to give injections to animals. This consists of a satisfactory attendance and performance at the facility “injections” lab. Prerequisite: level 03.

Level 05: For those wishing to take blood samples from animals. This level consists of satisfactory attendance and performance at the facility “blood collection” lab. Prerequisite: Level 04

Level 06: For those wishing to euthanize animals. This level consists of satisfactory performance at the facility “euthanasia” lab. This information will be included with level 4, 5 or 07 if needed Prerequisite: Level 03

Level 07: For those wishing to perform surgery on animals. This level consists of satisfactory attendance and performance at the facility “surgery lab”. Prerequisite: Level 06.

There will be other courses established if the need arises for specific procedures. Principal investigators are responsible to ensure that all those performing specific procedures are trained fully.

Those completing levels will be issued certificates and the log of who is eligible for facility procedures will be kept with the office of the Vice-President, Research.

Students may occasionally be allowed to perform certain procedures before completing the level because of timing but will be required to attend the next available lab, otherwise, this permission may be denied. This permission may only be given by the Facility Director. Students are allowed to write the test based on the CCAC modules as soon as they are included on an AUP even if the AUP is not yet passed. Once the AUP is approved by the ACC and is deemed to be active students who are listed on the AUP are allowed to apply for the ensuing wet labs/courses by applying to the facility director or the coordinator. If the AUP is not passed due to minor conditions to be met, the director can authorize attendance in the wet labs in certain cases in order to facilitate research timing.

The following content will be included in the levels of training above:

The materials can be found at the CCAC website address: www.ccac.ca or contact the Animal Care Director.

Regulations and animal welfare

- overview of Canadian Council on Animal Care: [guidelines](#) and [policies](#)/educational tools/[Assessment Program](#)/peer review system
- role of the local animal care committee in overseeing animal use and maintaining standards
- applicable regulations and legislation
- animal user accountability to ensure ethical animal use

Moral, legal, and ethical issues

- animal welfare movement
 - concerns of the public regarding humane treatment of animals
- foundations for ethical considerations concerning animal use
- contentious issues; recognition of various aspects and views
 - examples of evaluation of competing ethical demands (case studies of ethical dilemmas); ethical problems of allocation of resources (e.g., provision of enrichment in housing); level of invasiveness versus potential benefit (examples)

- scientific integrity and scholarly activity - responsible use of animals

The concept of the Three Rs

i. Reduction

- appropriate animal numbers - statistical requirements (power analysis)
 - controlling variability
 - literature searches

ii. Refinement

- onus to achieve expertise/limit pain/prevent wasting of animals
- expertise can reduce variability thus reducing numbers required

iii. Replacement

- alternatives
 - the need to consider
 - resources/databases

Lab Animal/Teaching Stream

For animal users involved in research, teaching and testing using laboratory animals:

. Research issues

- influence of environment/husbandry on research
- influence of disease on research
- effects of stress on animals - causes of stress
- responsibility of the investigator
- anesthesia/analgesia overview
- euthanasia
 - definition
 - appropriate methods
 - effects on research
 - effects on personnel

- animal models/appropriate selection/resources
- CCAC [categories of invasiveness](#)

i. Basic animal care/animal biology/techniques

- animal facilities and husbandry
- basic knowledge of facility operation to consider effects on research/stress producing situations
- environmental enrichment/reduction of stress
- roles of the animal care veterinarian/animal care technicians and how their activities can impact research
- role of the animal care technician as an observer, source of information/data collection/part of the research team
- awareness of technical services/source of expertise/variability reduction through consistent/competent manipulations
- animal identification/importance in terms of lost/confounded data
- animal health monitoring
- disinfectants and sterilization
- use of facility Standard Operating Procedures (SOPs)
- animal procurement - general considerations
- recognition of pain and/or distress - endpoints

Occupational health and safety (Content covered in all levels ... especially levels 01,02,03) Please note that all researchers are obligated to attend university programs on WHMIS and Lab Safety

Review of hazards involved in working with animals:

- physical hazards
 - noise, electrical, radiation
- chemical hazards
 - hazard awareness and right to know legislation; flammable, corrosive and toxic agents
- biological hazards
 - zoonotics: rabies;
 - biohazards, review of risk levels 1-4 with examples
 - bites and scratches
 - laboratory animal allergy - how allergies develop, preventive measures and intervention strategies
- facility specific operational items
 - legislated training requirement of Provincial Occupational Health and Safety Act and Regulations

- local occupational health and safety policies and programs and administration of WHMIS
- medical surveillance programs
- accident procedures and reporting

ii. Facility specific operational items

- approval and use of animals at the specific facility - local animal care committee structure
- tours of facility
- introduction to personnel
- security
- group discussions of animal use proposals, e.g., of how to complete institutional applications
- local animal procurement procedures/disposal
- Standard Operating Procedures (SOPs) and record forms
- local occupational health and safety programs and administration
- drug acquisition, storage, use and record keeping
- principles of containment systems for housing infected animals
- principles of exclusion housing; clean air stations and facilities for immune suppressed animals

iii. Wildlife Stream

For animal users involved in research, teaching and testing using wildlife species in the field. Topics to be developed for the appropriate species, as required: CCAC modules 1-3 required as well as specific training conducted by Primary Investigator, including all aspects of Occupational Health and Safety. Wildlife research classes will be offered at undergraduate biology courses.

Birds	Small mammals
Reptiles	Large mammals
Amphibians	Marine mammals
Aquatic species	

- ethical considerations
 - effects on animals, ecology (including animals threatened with extinction) and humans
 - causes and effects of stress on animals
 - public concerns
 - role of the institutional animal care committee

- justification
- controls/regulations
 - Canadian Council on Animal Care
 - Canadian Wildlife Service
 - Fisheries and Oceans Canada
 - provincial permits
 - scuba diving training (provincial diving regulations)
- potential hazards and precautions
 - chemicals (immobilizing agents, disinfectants, marking agents, etc.)
 - potential zoonoses
 - environmental hazards
- common techniques for observation
- acceptable capture and immobilization techniques
- handling/restraint
- marking techniques
- health evaluation
- common tissue sampling/blood sampling techniques
- short-term and long-term holding/husbandry
- release (yes/no?; implications)
- anesthesia/analgesia
- euthanasia in the field

Topics to be Covered in Modules/not Part of Core Course, but Available on Regular Basis When Applicable: eg. Anesthesia and surgery (Level 08) – **required if utilizing these procedures**

. Topics to be developed for the appropriate species, as required:

Rodents

Fish

Amphibia

Reptiles

Birds

- *General*
 - overview of biology and diseases
 - handling, restraint and common techniques (Codes of Practice)
 - necropsy/sampling
 - recognition of pain and/or distress
 - anesthesia
 - analgesia
 - surgical principles

- animal preparation, including health monitoring aspects, site preparation, induction
 - aseptic technique
 - instrument sterilization
 - multiple survival surgeries on a single animal
 - surgical procedures on a series of animals
 - post-operative monitoring and pain management
 - records

- *Specialized techniques* (1- 2 hour Module)
 - food deprivation/motivation techniques
 - diet manipulations
 - adjuvant use
 - transgenic animals
 - blood collection

- *Conducting research, teaching, or testing using fish*
 - biology and behavior
 - capture and transportation
 - permits and regulations
 - acclimation
 - handling and restraint
 - tagging and marking
 - holding systems (tanks, water delivery systems, environmental control and monitoring, equipment), water management and quality, flow rates, oxygen, water filtration, other environmental requirements
 - health and disease
 - general husbandry and aquaculture strategies
 - nutrition and feeding
 - common problems in aquatic facilities (supersaturation, chlorine, pollutants, etc.)
 - transgenic techniques
 - anesthesia
 - surgery
 - specialized techniques (e.g., cannulation)
 - euthanasia

Researchers who can show proof of completed training at other institutions that have CCAC approved documentation will be exempt from this requirement. Researchers who have completed training but have no documentation will qualify for Laurentian University training requirements by showing proficiency (satisfactory completion of a written exam).

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