

McGill University

Pedagogical Merit Reviewer's Role

The Pedagogical Merit Review of protocols involving live animals in teaching and training aims to be a structured and objective exercise that evaluates if a proposed live animal model is essential to achieving expected learning outcomes, in other words, if a live animal model is “the best learning model for the student to achieve the set objectives”. It evaluates the necessity of using live animals for the proposed outcomes, as well as constructive curriculum alignment between the methods used for teaching/training, those for the evaluation of learning outcomes, and the timing of the given course. This process is in line with the [Canadian Council on Animal Care \(CCAC\) Policy](#). Please visit the [CCAC FAQ](#) for more details on the Policy. Examples from the CCAC of protocols showing evidence of strong constructive curriculum alignment are provided below.

For each assessment of animal-based teaching/training protocol, please consider these key aspects:

- Whether the learning objectives are clear and specify the involvement of animals;
- Whether the learning objectives specify the proportion of the objective that must be achieved and/ or how well the behaviour must be performed (accuracy, speed, quality);
- Whether criteria proposed for assessing the completed animal-based teaching/training is suitable and will contribute to optimization of this use of animals for the benefit of future students;
- Whether the composition, learning level and needs of the student group(s) are compatible with the goals and objectives of the animal-based teaching/training;
- Whether the timing of the inclusion of animals in the teaching/training is suitable for the projected timing of the expected outcome(s);
- Whether the review of the obstacles and opportunities for implementing Three Rs by the animal based teaching/training instructors is sufficiently thorough;

--The [3Rs tenet](#) (Replacement, Reduction and Refinement) guides scientists on the ethical use of animals in science.

- **Replacement** refers to methods which avoid or replace the use of animals in situations where animals would otherwise have been used;
- **Reduction** refers to any strategy that will result in fewer animals being used;
- **Refinement** refers to the modification of husbandry or experimental procedures to minimize pain and distress.

***For each assessment, please also state if the proposed program meets the Pedagogical Merit requirements.**

Examples of proposed protocols showing evidence of strong constructive curriculum alignment

Example 1: A protocol is submitted for an institutional hands-on training course. This training is required before research team members can handle live animals.

- **Learning outcomes:** The student will be able to safely and humanely handle live mice, and will be able to successfully give a subcutaneous injection to a conscious mouse.
- **Assessment method:** The student will demonstrate an appropriate handling and injection technique in a conscious mouse.
- **Learning activities:** Students will handle conscious mice and practice subcutaneous injections.

Example 2: A protocol is submitted for an animal physiology course. This course is part of a Bachelor's degree in Biology.

- **Learning outcome:** The student will be able to demonstrate certain mechanical and physiological properties of skeletal muscle in frogs. Students will be able to: 1) name, describe, and induce the phases of a muscle twitch; and 2) define and explain the physiological basis of the following: (a) subminimal, minimal, maximal, supramaximal stimuli; (b) latent period; (c) wave summation; (d) tetanus; and (e) muscle fatigue.
- **Assessment method:** A laboratory report and quiz based on the procedures performed by students on a frog muscle.
- **Learning activities:** Students will use a muscle preparation from a pithed frog, placing it in an apparatus and taking a series of measurements. The frog muscle is used in place of mammalian muscle because of its tolerance to temperature change and handling.

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