Policy on Pedagogical Merit of Live Animal-Based Teaching and Training

As per the *CCAC policy statement on: pedagogical merit of live animal-based teaching and training (May 2016),* CCAC certified institutions that conduct animal-based teaching or training must have a formal pedagogical merit review process. The pedagogical merit review is the responsibility of the senior administrator overseeing the institutional animal care and use program.

For the purposes of this policy, teaching refers to academic courses offered by the institution and training refers to sessions offered by the institution for the acquisition of a specific skillset (this includes biomethodology courses offered through the Office of the University Veterinarian and medical resident training). The teaching or training of individual students within a laboratory (i.e. as part of thesis development) is not mandated by this policy.

Requirements:

The University Animal Care Committee (UACC) must ensure that no animals are acquired or used for science, including teaching or training without prior approval of an animal use protocol. The animal use protocol must indicate that satisfactory pedagogical merit review was undertaken prior to approval.

The purpose of the pedagogical merit review is to assess whether live animals need to be obtained to achieve successful learning outcomes for the teaching or training course in question. Two or more referees who have the technical expertise to assess the pedagogy of the animal use and are not in a conflict of interest (one of whom ideally has knowledge of replacement alternatives) will conduct the review. Reviewers will conclude whether or not adequate pedagogical merit has been provided to justify the use of animals. Reviewers are solely responsible for reviewing the pedagogy (not ethics) of animal use. A demonstration of pedagogical merit review must be received for every new teaching and training protocol submission (required upon initial submission and at full resubmission i.e.: every 4 years).

For certain competency-based teaching or training activities where the intended learning outcomes are prescribed or mandated by a third party such as a ministry of education, an institutional researcher/personnel training program or an accreditation or certification body, an expedited review process is available. In cases of expedited pedagogical merit review, only one review is required.

Recommending Appropriate Reviewers:

To assure that the pedagogical merit review is at arm's length from the Principal Investigator and the UACC, the following terms and conditions for peer reviewers are required:

- Reviewers must be external to the course/laboratory for which the protocol will be undertaken and must not be directly involved in the course/laboratory design or implementation.

- Reviewers should have appropriate experience in the relevant field, discipline, or sub- discipline to adequately review the proposal.

- Reviewers should not be in any other potential or perceived conflict of interest (e.g. personal or financial).

Suitable reviewers from a reviewer pool will be selected by staff within the Office of the Vice Principal (Research). The UACC Coordinator will approach the selected reviewers to provide written assessment of the pedagogical merit.

Information Required from Investigators for the Pedagogical Merit Review Process:

The course instructor must provide information on the proposed teaching or training as outlined in *Appendix 1: Pedagogical Merit Review Form* or *Appendix 1a: Expedited Pedagogical Merit Review Form*. This information, along with the animal use protocol (when feasible), will be provided to the reviewers to facilitate review.

Managing the Review and Approval Process:

Prior to UACC review of the animal use protocol (AUP), the completed Pedagogical Merit Review Form (see Appendix 1) is sent to suitable reviewers as selected by staff within the Office of the Vice Principal (Research). Reviewers complete a comment form (see *Appendix 2: Pedagogical Merit Reviewer Comment Form or Appendix 2a: Expedited Pedagogical Merit Reviewer Comment Form*), that includes a declaration of their qualification to review the proposal and the relationship between the reviewer and the Principal Investigator to ensure an arm's length review.

Reviewer comments and recommendations are returned to the UACC Coordinator, who will request additional information from the investigator if needed. If two reviews are received and in agreement, the recommendation will stand. For expedited pedagogical merit review, only one review is required. At this point, the proposal is either rejected or accepted. An additional review may be sought when two reviews offer different recommendations. Full protocol approval by the UACC is contingent upon pedagogical merit.

In the event that a submitted protocol is rejected, and the investigator does not accept the decision, the following process will apply:

i. The investigator may request that the reviewer(s) reconsider the decision. This requires the submission of revised materials (*Appendix 1: Pedagogical Merit Review Form*) to the UACC Coordinator addressing reviewer concerns/comments.

ii. If this does not provide a satisfactory solution, then the investigator may appeal to the Senior Administrator responsible for the animal care and use program (the Vice-Principal, Research). The VPR will then work with the protocol author to find a satisfactory solution and the UACC will be updated accordingly.

As a component of pedagogical merit review, surveys are distributed to course/laboratory participants to receive feedback on the use of animals in the teaching or training course. The aim of the survey is to facilitate the effective use of animals and laboratory design. The surveys are hosted electronically and distributed to instructors annually for student/trainee completion, with automated submission to the UACC Coordinator. A summary of the survey results is provided to the instructor for information and will be taken into consideration during subsequent protocol and pedagogical merit reviews.

Principal Investigator:

Course Instructor:

Course Title and Code:

Animal Species:　　　　　　　　　　　**Number of Students (A):**

Number of Animals (B):　　　　　**Number of Students per Animal (A÷B):**

Number of Students per Instructor and/or Teaching Assistant/Technicians:

1.　**a)** List the course learning outcomes; and **b)** how animals are being used during the course.

   Tips: Learning outcomes may be numbered for quick reference, but should focus on the measurable outcomes students are able to complete at the end of the course and align to course assessments.

   Additional Resources:
   Developing Effective Learning Outcomes: A Practical Guide, Queen's University, Centre for Teaching and Learning, K. Kolomitro and K. Gee, 2015 (*https://www.queensu.ca/ctl/teaching-support/learning-outcomes*)
   https://bhsc.queensu.ca/courses/anat-100-anatomy-human-body
   https://www.tru.ca/ shared/assets/assessinglearningoutcomes33278.pdf
   https://www.douglascollege.ca/course/biol-3305

   Example: On successful completion of PHARXXX, students will be able to:
   1) Apply the principles of drug therapy to solve basic pharmacokinetic problems; and
   2) describe how drugs affect the body and how the body affects drugs to predict beneficial and adverse drug effects.

2.　Identify which of the learning outcomes above can only be achieved by using animals as described.

3. Explain whether there are any suitable replacement alternatives to the use of animals. Please see the *CCAC Three Rs Microsite* for further information.

4. How is the animal based teaching/training described, meeting the needs of this student group?

5. Justify the timing of animal use with its alignment to the relevant theoretical components of the course.

TIP: Please attach a course syllabus/outline that includes the timing of animal use in the course.

6. Describe how you will assess student learning associated with animal use, and how these align to the course learning outcomes identified in Q1 and Q2.

7. What information will be used to inform animal use in future versions of this course?

Please note that full resubmission teaching protocols will have existing student feedback summary information distributed to the relevant reviewers.

Signature:

Principal Investigator:

Course Instructor:

Course Title and Code:

Animal Species:

Name of Organization Mandating Skills:

For certain competency-based teaching or training activities where the intended learning outcomes are prescribed or mandated by a third party (such as a ministry of education, an institutional researcher/personnel training program or an accreditation or certification body), an expedited review process is available.

1. **a)** List the course learning outcomes; and **b)** how animals are being used during the course.

Tips: Learning outcomes may be numbered for quick reference, but should focus on the measurable specific intended learning outcome mandated by the prescribing organization or by practical training syllabus of institution.

Additional Resources:

Developing Effective Learning Outcomes: A Practical Guide, Queen's University, Centre for Teaching and Learning, K. Kolomitro and K. Gee, 2015 (https://www.queensu.ca/ctl/teaching-support/learning-outcomes)
https://bhsc.queensu.ca/courses/anat-100-anatomy-human-body
https://www.tru.ca/   shared/assets/assessinglearningoutcomes33278.pdf
https://www.douglascollege.ca/programs-courses/catalogue/courses/BIOL/BIOL3305

2. Explain whether there are any suitable replacement alternatives to the use of animals. Please see the CCAC Three Rs Microsite for further information. Clarify all resources that were consulted.

Please note that full resubmission teaching/training protocols will have existing student feedback summary information distributed to relevant reviewers.

Signature:

Appendix 2
Animal Use in Teaching & Training
Pedagogical Merit Reviewer Comment Form

Course Title and Code:

Name of Reviewer:

• **Please state your confidence level (of ability) to assess the pedagogical merit of the proposal:**

☐ High ☐ Satisfactory ☐ Low

• **Do you have any other potential conflicts of interest (e.g., personal, financial, etc.)?**

☐ Yes ☐ No

Comments:

Review

1. Are the course learning outcomes clearly stated and the involvement of animals specified?

☐ Yes ☐ No

Comments:

2. Is it clear which of the course learning outcomes may only be achieved using animals as described?

☐ Yes ☐ No

Comments:

3. Is the provided information surrounding the review of replacement alternatives adequate?

☐ Yes   ☐ No

Comments:

[ ]

4. Does the animal based teaching/training meet the needs of the proposed student group?

☐ Yes   ☐ No

Comments:

[ ]

5. Is the timing of animal use in the course well justified for its alignment with the relevant theoretical components?

☐ Yes   ☐ No

Comments:

[ ]

6. Are the assessments of student learning associated with animal use appropriate and well aligned with the course learning outcomes identified in Q1 and Q2?

☐ **Yes**   ☐ **No**

Comments:

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7. Will the information described be appropriate and sufficient to inform future animal use in the course?

☐ **Yes**   ☐ **No**

Comments:

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8. If this is a full resubmission protocol, please review the student feedback summary from the previous approval period.

Based on the numbers that were surveyed in the course versus the numbers that responded, does this feedback raise any questions or concerns surrounding pedagogical merit of the proposed animal use?

Comments:

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9. Do you find the proposal to have adequate pedagogical merit to justify animal use (please explain)?

☐ **Yes**   ☐ **No**

Comments:

Thank you for completing this review; your generous assistance is greatly appreciated.

Signature:

Course Title and Code:

Name of Reviewer:

• Please state your confidence level (of ability) to assess the pedagogical merit of the proposal:

☐ High   ☐ Satisfactory   ☐ Low

• Do you have any other potential conflicts of interest (e.g., personal, financial, etc.)?

☐ Yes   ☐ No

Comments:

Review

1. Are the course learning outcomes clearly stated (including reference to specific intended learning outcome mandated by the prescribing organization or practical training syllabus of the institution).

☐ Yes   ☐ No

Comments:

2. Is the provided information surrounding the review of replacement alternatives adequate? Have reasonable efforts been made/ adequate resources consulted to identify replacement alternatives?

☐ Yes   ☐ No

Comments:

3. Based on the availability and suitability of equivalent absolute (i.e., non-animal model) or relative (i.e., eggs, cell cultures, tissues) replacement alternatives, is the live animal proposed in this course the best model to support the learning outcomes?

☐ Yes ☐ No

Comments:

[ ]

If a replacement alternative would be more appropriate, provide options below:

Absolute (e.g., computer simulation, model):

[ ]

Relative (e.g., tissue, eggs, invertebrate or animal suggested to have lower pain perception potential):

[ ]

4. If this is a full resubmission protocol, please review the student feedback summary from the previous approval period. Does this feedback raise any questions or concerns surrounding pedagogical merit of the proposed animal use (keeping in mind numbers that were surveyed in the course versus the numbers that responded)?

Comments:

[ ]

5. Do you find the proposal to have adequate pedagogical merit (with regard to meeting prescribed learning outcomes), to justify animal use (please explain)?

☐ Yes ☐ No

Comments:

[ ]

Thank you for completing this review; your generous assistance is greatly appreciated.

Signature: [ ]

PEDAGOGICAL MERIT REVIEW – TIP SHEET

Simple tips for completing the UACC Pedagogical Merit Review process

1 WHERE TO START?

Using a bullet point list, articulate your *learning outcomes* as clear and concise statement using action verbs (Question 1). See below for sample learning outcomes.

What are Learning Outcomes?

Learning outcomes are direct statements that describe the **knowledge, skills, and habits of mind** that students are expected to reliably demonstrate after a learning experience.

Sample Learning Outcomes

- Students will *predict* the appearance and motion of visible celestial objects
- Students will *plan* ways to model and/or simulate an answer to the questions chosen
- Students will *communicate* scientific ideas, procedures, results, and conclusions using appropriate SI units, language, and formats
- Students will *describe and evaluate,* the impact of their research
- Students will *compare* embryological and adult anatomy

2

Which of the learning outcomes of the lab/activity/course can only be achieved using animals? Briefly describe **why** animals are essential to achieve the learning outcomes (Question 2).

3

What are the methods of assessment for the lab/course? How do these assessments *measure* the desired learning outcomes and the use of animals? (Question 6)

Evaluating Learning Outcomes and the Assessment Plan

- Are the statements learning, rather than teaching or activity, focused?
- What suggestions are there to replace words like "appreciate", "understand", "become aware", and "know"?
- Are the outcomes assessable?
- Are all learning outcomes represented in the assessment plan?

Remember: Keep your responses focused on the use of animals for teaching purposes.
This form should argue that the animal use is necessary and adds value for your students' learning!

For additional guidance on learning outcomes contact Klodiana Kolomitro, Educational Developer, at the Centre for Teaching and Learning (kk78@queensu.ca, 613-533-6000 x75809)

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