

ASSESSMENT REPORT

**UNIVERSITY OF BRITISH COLUMBIA
BC CANCER AGENCY
VANCOUVER COASTAL HEALTH
PROVIDENCE HEALTH CARE
TRIUMF**

VANCOUVER, BRITISH COLUMBIA

DATES OF VISIT:

MARCH 5-8, 2019 (UBC AND AFFILIATES)

MARCH 11, 2019 [REDACTED]

MARCH 12, 2019 [REDACTED]

CONFIDENTIAL

This assessment report has been compiled by the Canadian Council on Animal Care (CCAC) in furtherance of its objective **to work for the improvement of the ethics and care of animals in research, teaching and testing on a Canada-wide basis.**

The CCAC treats as confidential all matters relating to the assessment and the report. Nonetheless, the assessed institution is free to release this document or part thereof to the public; the CCAC must be advised in writing prior to any release.

Date of previous assessment:

March 22-24, 2016 (UBC and affiliates)

March 10, 2016 [REDACTED]

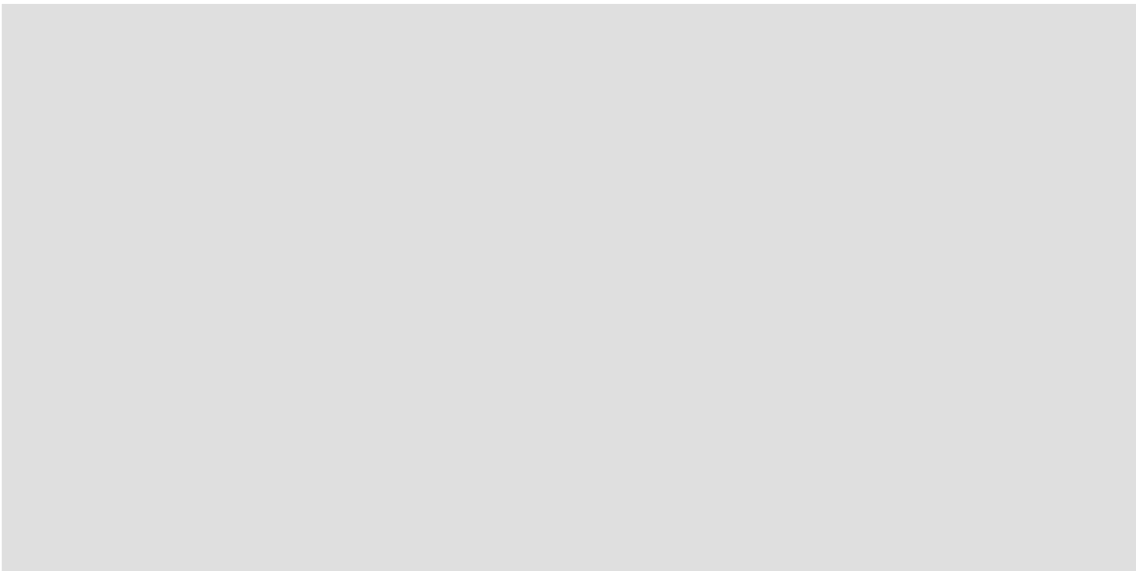
March 30, 2016 [REDACTED]

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TABLE OF CONTENTS

CHANGES SINCE THE LAST ASSESSMENT VISIT	1
FUTURE PROJECTS.....	2
PROGRAM STRUCTURE, HUMAN RESOURCES AND INSTITUTIONAL POLICIES ..	2
HISTORY OF CCAC ASSESSMENTS	3
1. ANIMAL CARE COMMITTEE	3
2. REVIEW OF DOCUMENTS.....	5
3. MERIT REVIEW OF RESEARCH/TEACHING/TESTING.....	6
4. PROTOCOL REVIEW BY THE ANIMAL CARE COMMITTEE	7
5. ANIMAL ACQUISITION AND TRACKING	9
6. ANNUAL ANIMAL DATA	9
7. ANIMAL RECORDS.....	9
8. POST-APPROVAL MONITORING	10
9. VETERINARY SERVICES	10
10. ANIMAL CARE STAFF	11
11. CONTINUING EDUCATION AND TRAINING.....	11
12. OCCUPATIONAL HEALTH AND SAFETY	11
13. CRISIS MANAGEMENT	12

SITE VISITS: UNIVERSITY OF BRITISH COLUMBIA

	13
.....	15
.....	17
.....	20
.....	22
.....	24
.....	26
.....	28
.....	30

[REDACTED]	... 32
OTHER FACILITIES.....	34
SITE VISITS: VANCOUVER COASTAL HEALTH RESEARCH INSTITUTE	
[REDACTED]	... 35
[REDACTED]	... 36
[REDACTED]	... 38
[REDACTED]	... 39
[REDACTED]	... 41
[REDACTED]	... 43
SITE VISIT: BC CANCER AGENCY (VANCOUVER)	
[REDACTED]	... 45
SITE VISIT: PROVIDENCE HEALTH CARE RESEARCH INSTITUTE	
[REDACTED]	... 47
SITE VISIT: TRIUMF.....	49
RECOMMENDATIONS	
SERIOUS RECOMMENDATIONS.....	50
REGULAR RECOMMENDATIONS.....	51
COMMENDATIONS.....	55

INSTITUTION: UNIVERSITY OF BRITISH COLUMBIA
BC CANCER AGENCY
VANCOUVER COASTAL HEALTH
PROVIDENCE HEALTH CARE
TRIUMF

DATE OF VISIT: MARCH 5-8, 11 & 12, 2019

PROGRAM OVERVIEW

The animal ethics and care program at the University of British Columbia (UBC) and its affiliate institutions (BC Cancer Agency – Vancouver, Vancouver Coastal Health Research Institute – the research arm of Vancouver Coastal Health, and Providence Health Care Research Institute – the research enterprise of Providence Health Care and TRIUMF) oversees a wide range of research endeavours, teaching/training activities and to a limited degree testing. UBC Faculties that involve animals in their work include: Land & Food Systems, Arts, Dentistry, Medicine, Science and Pharmaceutical Sciences and occasionally Engineering and Forestry.

Animals involved in the overall program include laboratory-based animals: rodents (e.g., mice, rats, guinea pig, hamsters), fish (e.g., zebrafish, trout, salmon), birds (e.g., finch, hummingbird), frogs, rabbits, nonhuman primates; and other animals including farm animals (e.g., pigs, sheep, poultry, dairy cattle) and wildlife (e.g., birds, fish, small mammals, pinnipeds).

CHANGES SINCE THE LAST ASSESSMENT VISIT

Addition of an affiliate to the integrated program:

- TRIUMF is in the process of acquiring a Preliminary Certificate of GAP

Changes to personnel:

- New animal care committee (ACC) coordination staff (Manager – Animal Care, Biosafety and Radiation Safety Committees and Assistant Manager) and regular term-based changeover in ACC membership
- Recruitment of new staff including clinical veterinarians, post-approval monitoring veterinarian and facility staff (various).

Changes to facilities:

- Closed Department of Psychology facility (animals transferred to [REDACTED])
- New [REDACTED] near completion.

Changes to processes:

- [REDACTED] received Good Laboratory Practice certification (2018)
- Implementation of laboratory animal management software (Mosaic) for most rodent facilities to improve tracking and reporting (compliance)

Changes to animal use: N/A

FUTURE PROJECTS

- [REDACTED] nuclear medicine expansion (MRI and rodent rooms).
- Potential increase in future research activities (e.g., biomedical engineering).

PROGRAM STRUCTURE, HUMAN RESOURCES AND INSTITUTIONAL POLICIES

The Associate Vice-President, Research & Innovation (AVPRI) is the senior administrator responsible for the animal ethics and care program of the University of British Columbia (UBC) and its affiliates (BC Cancer Agency – Vancouver; Vancouver Coastal Health; Providence Health Care; and TRIUMF).

The institution has one animal care committee (ACC) that is supported by three subcommittees (see below). All subcommittees report to the ACC. A brief overview of the committees and responsibilities is as follows:

- **Animal care committee:** The ACC administers all aspects of the animal ethics and care program including conducting ethical review of protocols, reviewing site standards, and managing compliance concerns. The ACC reports to the AVPRI and day-to-day duties are supported by Office of Research staff (Manager and Assistant Manager).
- **Policy subcommittee:** Reviews or develops institutional policies and procedures related to the animal ethics and care program.
- **Post-approval monitoring subcommittee:** A post-approval monitoring (PAM) team, consisting of a Compliance Officer and a Veterinarian, manage the day-to-day operations of the PAM program and report activities and findings to the PAM subcommittee. In general, the subcommittee oversees the work of the PAM team; sets priorities for the PAM program; and recommends policy or procedural changes based on findings.
- **Facility managers' subcommittee:** Main purpose is for the exchange of information and practices between facilities to help support and improve the care of animals.

The Office of Research (ORS) Manager and Assistant Manager provide strong administrative, professional, and training support to the ACC and researchers and they also facilitate activities of the various subcommittees among other responsibilities (e.g., coordinates the Biosafety and Radiation Safety Committee). The ORS staff report to the ORS Director who in turn reports directly to the Vice-President, Research & Innovation (VPRI).

Animal Care Services (ACS), under the leadership of the Director Veterinary Services & Research Support / University Veterinarian, provides services across the animal ethics and care program including research support, veterinary services, compliance, training, procurement, animal housing, technical services and administrative support. ACS oversees management of three of the main animal facilities on campus: [REDACTED]

Day-to-day animal care activities are managed as per the various facility requirements. Facility management reporting lines for animal care staff differ amongst the various facilities but any animal care or welfare concerns are to be reported to the ACC and Director Veterinary Services & Research Support / University Veterinarian. Some animals in alternate housing locations are cared for by students or research staff who report to the principal investigator.

HISTORY OF CCAC ASSESSMENTS

2016 – Serious recommendations: Facility standards ([REDACTED]); monitoring records (Vancouver Coastal Health); oversight of and compliance with endpoints (all facilities)

1. ANIMAL CARE COMMITTEE (ACC)

Reporting line

<input checked="" type="checkbox"/> Meets CCAC standards	The animal care committee reports to the Associate Vice-President, Research & Innovation (AVPRI), who is ultimately responsible for the animal ethics and care program at the University of British Columbia and its affiliate institutions (BC Cancer Agency – Vancouver, Vancouver Coastal Health, and Providence Health Care).
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Authority

<input checked="" type="checkbox"/> Meets CCAC standards	The authority of the animal care committee is appropriately described in the <i>Terms of Reference</i> and strongly supported in practice.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Composition

<input checked="" type="checkbox"/> Meets CCAC standards	The general composition of the animal care committee is appropriate and members of the committee are engaged in their work. The panel noted that succession planning was in place for committee membership renewal.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Training for ACC members

<input checked="" type="checkbox"/> Meets CCAC standards	An orientation process is offered to new animal care committee (ACC) members and includes documentation package and site tours. Members are kept abreast of program changes through ACC meetings (e.g., guidelines changes, internal items). Continuing education for the ACC members, including the community member, are supported by the institution (e.g., UBC annual ACC retreats, CCAC workshop). The Office of Research Services staff, and in particular the Manager – Animal Care Committee, also participate with the Canadian Animal Ethics Coordinators (CAEC) group. The CCAC has identified training for ACC members as a priority and is working with the CAEC to identify and implement training initiatives for ACC members.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

ACC meetings (frequency, quality of minutes, quorum)

<input checked="" type="checkbox"/> Meets CCAC standards	The ACC generally meets monthly to review protocols, and holds additional non-protocol review meetings throughout the year to deal with other program components (e.g., policy and standard operating procedures review, subcommittee updates, other). Minutes are comprehensive, decisions are made by consensus and quorum appears to be appropriate.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Site visits (coverage of animal care and use areas, frequency, quality of reports)

<input type="checkbox"/> Meets CCAC standards	Animal care committee (ACC) visits are conducted to the main animal facilities and extra-vivarium spaces (procedural spaces and animal-housing areas outside of the central animal facilities). Detailed site visit reports are generated and shared with facility management and senior administrators. Follow-up items are appropriately tracked. The panel noted that not all ACC members participate in at least one-site visit annually (see Regular recommendation no. 4a). The panel suggested the use of a site visit checklist to help provide consistency of visits.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Oversight of animal use areas outside of purpose-built animal facilities

<input type="checkbox"/> Meets CCAC standards	The <i>ACC Policy 009 – Alternative Housing or Holding of Experimental Animals</i> outlines the requirements for extra-vivarium spaces. UBC reportedly has 17 locations that have been approved for permanent alternate housing. In practice, the panels noted limited communication between research teams and ACS at some of the alternative housing areas which should be improved (refer to <i>Site Visit – [REDACTED]</i> and see Serious recommendation nos. 1a and 1c).
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Documented follow-up of ACC concerns raised during meetings or site visits

<input checked="" type="checkbox"/> Meets CCAC standards	Concerns are generally documented, followed up on and well managed at different levels by the veterinarians, the ACC, the University Veterinarian and the senior administration. Affiliated institutions within an integrated animal ethics and care program can present certain challenges, and UBC's senior administration is making great efforts to align the different programs.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Overall functioning

<input checked="" type="checkbox"/> Meets CCAC standards	The animal ethics and care program functions well and has exceptional support from UBC's senior administration. Stakeholders are engaged across the program. ACC members were commended for their diligent work and dedication to animal welfare (see Commendation no. 3). The Manager – Animal Care Committee and the Assistant Manager were commended for their organizational skills, collegiality and support to the ACC (see Commendation no. 5).
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

2. REVIEW OF DOCUMENTS

Terms of reference of the ACC

<input type="checkbox"/> Meets CCAC standards	The <i>Terms of Reference</i> and associated procedures are generally appropriate, however the panel recommended that the entire process for reviewing protocols and decision making, including the process for collaborative research projects, pilot studies and interim approvals, be described in the <i>Terms of Reference</i> (or described in an associated formal document referenced in the Terms) (see Regular recommendation no. 4b). Currently, protocol review decisions (e.g. approved, deferral) are identified in the <i>Committee Member Handbook</i> but not in the Terms.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Standard operating procedures (SOPs) (development and review, complete set)

<input type="checkbox"/> Meets CCAC standards	A suite of standard operating procedures (SOPs) exists and a subcommittee was recently tasked with managing SOP review. The panel recommended that the ACC continue to oversee the development, revision and implementation of SOPs (see Regular recommendation no. 4c). The panel also encouraged the ACC to amalgamate documents, streamline processes, and harmonize common practices and standards of animal care and welfare across all UBC and affiliated facilities where possible.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Other ACC documents (policies, procedural/informational documents)

<input checked="" type="checkbox"/> Meets CCAC standards	The University of British Columbia has overarching <i>Board of Governors Policies</i> that provide the framework for the animal ethics and care program. In addition, the ACC has a number of policies and processes that support their work.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

3. MERIT REVIEW OF RESEARCH/TEACHING/TESTING

Scientific merit of research

<input checked="" type="checkbox"/> Meets CCAC standards	A peer review committee, managed through the Office of Research Services, conducts internal scientific merit review when needed. The process is appropriate and independent from the animal care committee.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Pedagogical merit of teaching

<input type="checkbox"/> Meets CCAC standards	<p>The <i>Policy 021 – Pedagogical Merit Review</i> has been developed but not yet fully implemented. A portion of the panel met with the administrative head of the Pedagogical Merit review committee. and those panel members read an animal use protocol and a pedagogical merit review form related to a rodent training exercise.</p> <p>The information related to pedagogical merit was embedded in the protocol in section 4.1. When reading the protocol, it was difficult to separate out what was relevant to pedagogical merit from what was relevant to ethical merit. It was suggested that a separate form be completed by the protocol author that provides specific information required by reviewers in their assessment of pedagogical merit. Important information for reviewers relates to appropriate curriculum alignment, the timing of the training or teaching, and the possibility of using absolute or relative replacement alternatives.</p> <p>When reading the completed reviewer’s form, the panel noted that section 5 related more to ethical merit than to pedagogical merit. Ethical considerations are not part of pedagogical merit review and should be assessed during ethical review by the ACC. Furthermore, there were no explicit questions soliciting:</p> <ul style="list-style-type: none"> ▪ If there is alignment between learning objectives, assessment methods and animal-based learning activities? ▪ If the involvement of live animals is essential in meeting proposed learning outcomes?
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Pedagogical merit of teaching continued

<input type="checkbox"/> Meets CCAC standards	<p>Many institutions undertake both teaching and training. For training protocols, the institution can conduct an expedited review which consists of assessing if replacement alternatives would be appropriate (see question 8 in the <i>Frequently Asked Questions</i> document).</p> <p>It was recommended that the <i>CCAC policy statement on: pedagogical merit of live animal-based teaching and training (2016)</i> and additional guidance (sample review form and <i>Frequently Asked Questions</i>) document be reviewed to ensure the proposed pedagogical merit review process is appropriate (see Regular recommendation no. 3a).</p> <p>Associated documents can be found here:</p> <p>Policy - https://www.ccac.ca/Documents/Standards/Policies/Pedagogical_merit_of_live_animal-based_teaching.pdf</p> <p>Frequently Asked Questions - www.ccac.ca/Documents/Standards/Policies/FAQ-Pedagogical_merit_of_live_animal-based_teaching.pdf</p> <p>Sample form - https://www.ccac.ca/Documents/Standards/Policies/Pedagogical_Merit_Review_Form.docx</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Regulatory requirements for testing

<input checked="" type="checkbox"/> Meets CCAC standards	<p>Very few regulatory tests are conducted. In those instances, regulatory requirements are followed.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

4. PROTOCOL REVIEW BY THE ANIMAL CARE COMMITTEE

Animal use protocol forms (new protocols, amendments, renewals)

<input type="checkbox"/> Meets CCAC standards	<p>Protocols are appropriately managed through an electronic protocol management system (RISe). RISe does not easily allow protocol authors to amend a protocol at the time of an annual renewal. The panel noted that renewal forms do not solicit the number of animals requested in the coming year, nor a justification thereof (see Regular recommendation no. 4d).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Protocol approval (new protocols, amendments, renewals, interim approvals)

<input type="checkbox"/> Meets CCAC standards	<p>In 2018, the animal care committee (ACC) reviewed 236 new protocols and 463 renewals.</p> <p>The protocol review process was generally appropriate; however the panel was informed that pilot studies that are part of a larger protocol already approved by the ACC and breeding protocols go through an expedited review process. The panel recommended that both be reviewed by the full ACC (see Regular recommendation no. 4b).</p> <p>Interim approvals may be undertaken by a subcommittee made up of at least one scientific member, one veterinarian and one community representative.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Protocol management

<input checked="" type="checkbox"/> Meets CCAC standards	<p>Protocols are appropriately managed through an electronic protocol management system (RISe). The system allows for the tracking of changes, comments and approvals to protocols. The new animal facility management software (Mosaic) is to be integrated with RISe to allow for real-time comparison of actual to approved animal numbers, and for animal sharing initiatives. The panel recommended that efforts continue to be made to share animals between researchers, and between animal facilities (see Regular recommendation no. 5g).</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Pilot studies

<input type="checkbox"/> Meets CCAC standards	<p>Pilot studies, which represent about 3% of active protocols, are reviewed by a subcommittee, which can refer the protocol to the entire ACC if deemed necessary. The panel reminded the ACC that pilot studies, due to their uncertain nature and potential risk, should be reviewed by the entire ACC (see Regular recommendation no. 4b).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Collaborations

<input type="checkbox"/> Meets CCAC standards	<p>The animal care committee handles animal-based collaborations as per <i>CCAC policy statement on: animal-based projects involving two or more institutions</i> (2003). The panel recommended that this process be described in the <i>Terms of Reference</i> or in another formal document referenced in the Terms (see Regular recommendation no. 4b). Relevant post-approval monitoring reports should be shared between collaborating institutions (refer to <i>Section 2</i> and Regular recommendation no. 4e).</p> <p>The CCAC recently published a related <i>Frequently Asked Questions</i> document: https://www.ccac.ca/Documents/Standards/Policies/CCAC-FAQs-on-Animal-Based-Projects-Involving-Two-or-More-Institutions.pdf.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

5. ANIMAL ACQUISITION AND TRACKING

<input type="checkbox"/> Meets CCAC standards	<p>Reporting of animal numbers, specifically morbidity and mortality records across the program, was inconsistent. At the time of this assessment, most rodent facilities were transitioning to a new animal facility management software (Mosaic), which will integrate with the protocol management system (RISe). This will allow for real-time tracking of animal numbers. Furthermore, Mosaic will allow tracking of animal health concerns thereby facilitating allocation of veterinary services or compliance activities. The ACC is encouraging all animal facilities to use Mosaic and the panel recommended that mortality and morbidity numbers be accurately tracked and reported in a timely manner to the ACS (see Regular recommendation no. 5f).</p> <p>The panel noted that there are still challenges with tracking and reporting breeding colony numbers; therefore, appropriate processes to ensure that the numbers of animals acquired or bred do not exceed those approved by the ACC should be implemented (see Regular recommendation no. 5e).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

6. ANNUAL ANIMAL DATA

<input checked="" type="checkbox"/> Meets CCAC standards	<p>Animal use data is provided annually to the CCAC in a timely manner. The use of Mosaic will help expedite the reconciliation process.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

7. ANIMAL RECORDS

<input type="checkbox"/> Meets CCAC standards	<p>Since the last CCAC assessment, UBC and its affiliates have improved standards for monitoring and recordkeeping (<i>ACC Policy 017 – Monitoring and Medical Records of Animal Used for Research, Teaching and Testing</i>) and have recently implemented a new rodent <i>First Aid Grading System and Response Guide</i> to standardize the intervention response and improve communication amongst stakeholders (see Commendation nos. 6 and 8).</p> <p>The panel noted, for the most part, that information on animal health, environmental conditions, and animal procedures was available; however, further improvements are needed in certain facilities to safeguard animal welfare (refer to <i>Site Visit – [REDACTED]</i> and see Serious recommendation no. 1).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

8. POST-APPROVAL MONITORING

<input checked="" type="checkbox"/> Meets CCAC standards	<p>The <i>ACC Policy 014 – Post-Approval Monitoring</i> outlines the various levels of oversight provided through the program which includes:</p> <ul style="list-style-type: none"> ▪ annual ACC site visits; ▪ risk-based post-approval monitoring (PAM) audits; ▪ facility management monthly audit checklists; ▪ reports of non-compliance; ▪ ACC directed visits (e.g., lab-specific continuing review visits); ▪ concerns noted from facility managers or animal care staff (daily observations); ▪ morbidity and mortality concerns; ▪ veterinary reports (service logs or reported observations related to non-compliance issues); and ▪ annual protocol renewal forms. <p>The PAM program is supported by two full-time staff (Compliance Officer and Veterinarian) who oversee different aspects of the program. Findings are reported to the University Veterinarian and PAM subcommittee. Any non-compliance concerns are handled as outlined in the <i>ACC Policy 001 – Compliance</i>.</p> <p>The panel suggested that given the progress to refine surgical technique training, the post-approval monitoring program could focus efforts on aseptic technique across all facilities to help reinforce concepts.</p> <p>Overall, the PAM program is functioning well and the panel commended the PAM team for their collaborative work in ensuring high standards of animal care and welfare (see Commendation no. 7).</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

9. VETERINARY SERVICES (COMPREHENSIVENESS, REPORTING LINES, AUTHORITY)

<input checked="" type="checkbox"/> Meets CCAC standards	<p>The Director Veterinary Services & Research Support / University Veterinarian provides strategic and operational support to the animal ethics and care program. Duties include managing veterinary services and post-approval monitoring across the program, and overall budgetary and human resource management of Animal Care Services (ACS) and a number of animal facilities ([REDACTED]).</p> <p>The panel commended the University Veterinarian for his efforts to coordinate and harmonize practices across the program, and for his leadership in maintaining a very high quality animal ethics and care program (see Commendation no. 4).</p> <p>Service and support are provided by four clinical veterinarians and compliance oversight / monitoring is provided by one post-approval monitoring veterinarian (in conjunction with the Compliance Officer). The veterinarians provide high quality services and are well respected within the institution. The panel appreciated the excellent work of the veterinarians and their dedication to animal welfare and care (see Commendation nos. 6 and 7).</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

10. ANIMAL CARE STAFF (COMPREHENSIVENESS, REPORTING LINES, AVAILABILITY)

<input checked="" type="checkbox"/> Meets CCAC standards	The panel appreciated the investment of the facility managers and animal care staff in ensuring high standards of animal welfare (see Commendation no. 8).
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

11. CONTINUING EDUCATION AND TRAINING

Continuing education for animal health professionals

<input checked="" type="checkbox"/> Meets CCAC standards	Veterinarians and animal care staff are engaged in the broader animal care community and various professional organizations. Staff regularly participate in training activities locally, nationally and internationally.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Training program for personnel working with animals in science

<input type="checkbox"/> Meets CCAC standards	<p>Institutional training includes online theoretical modules (core modules including ethics, basic care), practical hands-on species-specific or procedure-specific training (as applicable), facility-specific training and mentor-facilitated training. The veterinarians and animal care staff involved in developing and delivering training were commended for their work, which has been well received by the research community (see Commendation nos. 4, 6, 7 and 8).</p> <p>The panel noted that the institutional training has been focused mainly on rodent and fish training, understandably as 90% of animals involved are rodents or fish; however, the panel recommended that the training program be gradually expanded to cover the other species involved in the program (see Regular recommendation no. 3b).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

12. OCCUPATIONAL HEALTH AND SAFETY

<input checked="" type="checkbox"/> Meets CCAC standards	Health and safety program requirements differ between types of institutions (e.g., hospital versus university), but they are generally comprehensive and include risks to working with animals. The Manager - ACC supports the Biosafety and Radiation Safety Committee which provides an important link between programs.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

13. CRISIS MANAGEMENT

<input type="checkbox"/> Meets CCAC standards	The University and affiliates have crisis management plans that focus mainly on human health and safety. The panel recommended that facility plans for managing animals in the case of catastrophic failure should be included (see Regular recommendation no. 5h). For example, options for animal relocation or measures taken to safeguard animal welfare in the case of potential supply shortages (e.g., relocation or care plans, coordination and readily available supplies for mass euthanasia if needed).
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: UNIVERSITY OF BRITISH COLUMBIA

Animal care and welfare (including housing and environmental enrichment)

<input checked="" type="checkbox"/> Meets CCAC standards	The animal facility is a conventional rodent facility. Rodents (mice, rats) observed during the visit appeared to be healthy and were provided with appropriate nesting material and enrichment. The panel commended facility manager and staff for their high standards of care (see Commendation no. 8).
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input checked="" type="checkbox"/> Meets CCAC standards	[REDACTED] has implemented the Mosaic system and husbandry/protocol specific records in the facility were detailed and complete.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input type="checkbox"/> Meets CCAC standards	The [REDACTED] facility shares the cage processing area with an adjacent animal facility ([REDACTED]). Both facilities have been impacted by a lack of reliable hot water for their operations (due to a capacity issue). The panel was informed that this would be rectified by the fall 2019. The panel observed that a number of mice cages were severely discolored (cloudy) and some in use were in very poor condition (e.g., observation of animals was impeded by cloudiness). The panel recommended that that they be replaced and that management continue to prioritize the cage replacement program (see Regular recommendation no. 5a).
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input type="checkbox"/> Meets CCAC standards	<p>A centralized building monitoring system (within the [REDACTED] displays environmental parameters for the animal facility which is monitored by a building employee; designated individuals (call-out list) would be called by the building employee if there was a concern.</p> <p>Air changes per hour (ach) in the facility were not available at the time of the assessment and should be reviewed to ensure standards are met (see Regular recommendation no. 5b). The <i>Heating, ventilation, and air conditioning: Addendum to the CCAC guidelines on laboratory animal facilities – characteristics, design and development (2019)</i> was recently published and provides further guidance on air quality parameters and air changes per hour.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input type="checkbox"/> Meets CCAC standards	<p>Storage space is at a premium in the facility, particularly in the cage wash area (see Regular recommendation no. 5j).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: UNIVERSITY OF BRITISH COLUMBIA

Animal care and welfare (including housing and environmental enrichment)

<input checked="" type="checkbox"/> Meets CCAC standards	<p>The animal facility is a modified barrier facility for pathogen-free (SPF) mice. Mice observed during the visit appeared to be healthy and were provided with appropriate nesting material and enrichment. The panel commended facility manager and staff for their high standards of care (see Commendation no. 8).</p> <p>Mice caging (e.g., Duplex caging) will need to be assessed to ensure it meets the floor space requirements as per the new <i>CCAC guidelines: mice (to be published)</i> (see Regular recommendation no. 5c).</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input type="checkbox"/> Meets CCAC standards	<p>Animal records were available in all rooms (e.g., sick animal log, protocol specific monitoring sheets and general husbandry records).</p> <p>██████ does not employ the Mosaic system at this time. Currently, cage-level censuses are performed weekly and reported to the ACC through the Facility Manager's subcommittee. Breeding colony numbers generally are reported annually to the ACC by the primary investigators. The panel discussed that it would be beneficial to the animal ethics and care program for information to be shared in a common fashion (e.g., Mosaic) as it would further facilitate the work of the veterinarians and compliance team and provide more timely information to the ACC. In the absence of the Mosaic system effective communication must continue (see Regular recommendation nos. 5d, 5e and 5f).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input type="checkbox"/> Meets CCAC standards	<p>The ██████ facility shares the cage processing area with the adjacent animal facility (██████). Both facilities have been impacted by a lack of reliable hot water for their operations (capacity issue). The panel was informed that this would be rectified by the fall 2019. Floors in the clean cage wash area were to be resurfaced (April 2019).</p> <p>The panel observed that a number of mice cages were discolored (cloudy), but animals could still be appropriately observed. Cages in poor condition (e.g., observation of animals impeded by cloudiness) are generally replaced as needed. The panel recommended that management continue to prioritize the cage replacement program (see Regular recommendation no. 5a).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input checked="" type="checkbox"/> Meets CCAC standards	<p>Each side of the animal unit is covered by a different HVAC system. One side has redundancy, while the other does not. Consequently, the HVAC department does frequent preventative maintenance to ensure parts showing wear are replaced early.</p> <p>A centralized building monitoring system (within the hospital) displays environmental parameters for the animal facility which is monitored by a building employee; designated individuals (call-out list) would be called by the building employee if there was a concern.</p> <p>Air changes per hour (ach) in the facility were between 14-17ach. The automated water system is regularly calibrated and cleaned.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input type="checkbox"/> Meets CCAC standards	<p>Food storage room was generally appropriate; however, the chip board pallets should be removed and replaced with pallets made of appropriate material.</p> <p>Materials used on equipment or in behavioural suites should be replaced with appropriate and sanitizable materials (room [redacted] tape used on behavioural equipment; room [redacted] cloth curtain).</p> <p>Storage space is at a premium in the facility, particularly in the cage wash area.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input checked="" type="checkbox"/> Meets CCAC standards	<p>The facility was generally well organized and clean.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	<p>N/A</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: UNIVERSITY OF BRITISH COLUMBIA

Animal care and welfare (including housing and environmental enrichment)

<input type="checkbox"/> Meets CCAC standards	<p>Three to four mice were being kept in small filter top cages with appropriate environmental enrichment. Mice in the [redacted] study were housed as a pair per cage. Experience has reportedly shown that these animals do better when kept in smaller cages.</p> <p>There were a large number of cages in the housing rooms, with some cages placed on the top shelves. Efforts should be made to ensure that the light intensity in the top cages does not negatively affect animals (see Regular recommendation no. 1b). Additionally, given the cage placement on shelves and the challenges related to observing animals in top cages, the facility manager should ensure that daily observations of the animals occur with minimal disturbance to animals (see Regular recommendation no. 1c). Finally, the manager should ensure that the number of cages does not overwhelm the capacity of the ventilation system to provide appropriate air to the animals (see Regular recommendation no. 1d).</p> <p>The panel also recommended that the ACC ensure that the appropriate number of mice related to cage size is housed in each cage, to comply with the new CCAC guidelines on mice (see Regular recommendation no. 5c).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input checked="" type="checkbox"/> Meets CCAC standards	<p>There was excellent communication amongst stakeholders. The facility had very good summary sheets for endpoints.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input type="checkbox"/> Meets CCAC standards	<p>This was an older cramped facility in need of maintenance and repair. Many wall surfaces were damaged, and there was a general lack of storage space (see Regular recommendation nos. 5i and 5j). The facility was very small for the volume of work being undertaken at the time of the visit. The panel was informed that substantial renovations were planned for this year.</p> <p>In support of the planned renovations, the panel recommended that all animal housing and procedure areas in the [redacted] be brought up to CCAC standards, or that these areas be closed and animals and activities moved to appropriate facilities that meet CCAC standards (see Regular recommendation no. 1a). The ACC and facility management should ensure that the volume of work undertaken is effectively accommodated within a renovated or new facility.</p> <p>The facility manager was commended for her diligence and knowledge.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input type="checkbox"/> Meets CCAC standards	<p>Air changes in the three housing rooms were reportedly appropriate; however, the relative humidity was low and varied between 15 to 32% (see Regular recommendation no. 5b). The facility manager informed the panel that ammonia and CO₂ levels are checked every two months and are consistently appropriate. The panel suggested the new <i>Heating, ventilation, and air conditioning: Addendum to the CCAC guidelines on laboratory animal facilities – characteristics, design and development (2019)</i> be consulted to verify the acceptable levels of ammonia and CO₂.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input type="checkbox"/> Meets CCAC standards	<p>Repairing surfaces will contribute to improving biosecurity by reducing the risk of cross contamination.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input type="checkbox"/> Meets CCAC standards	<p>The facility and housing rooms are cramped, with little storage.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: UNIVERSITY OF BRITISH COLUMBIA

Animal care and welfare (including housing and environmental enrichment)

<input checked="" type="checkbox"/> Meets CCAC standards	The [redacted] supports research and training activities involving a range of animals (e.g., rodent, rabbit, ferret, gecko and large animals). Animals observed at the time of the assessment appeared well-cared for and were provided with excellent enrichment. The panel commended the facility manager and staff for their high standards of care (see Commendation no. 8).
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input checked="" type="checkbox"/> Meets CCAC standards	Animal Care Services (ACS) offices are housed in the [redacted] and as such, there is a regular presence of veterinarians in the facility. In addition, [redacted] has Good Laboratory Practice certification which has stringent standards for documentation control.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input checked="" type="checkbox"/> Meets CCAC standards	The facility is being well-maintained.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input type="checkbox"/> Meets CCAC standards	Environmental parameters are generally appropriate however humidity levels tend to be low (20-25%) and are measured by zone (versus single rooms). There has been no noticeable impact on animal health at this point in time.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input checked="" type="checkbox"/> Meets CCAC standards	Appropriate measures are in place.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input checked="" type="checkbox"/> Meets CCAC standards	The facility is clean and organized.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: UNIVERSITY OF BRITISH COLUMBIA

Animal care and welfare (including housing and environmental enrichment)

<input type="checkbox"/> Meets CCAC standards	<p>Mice seen at the time of the visit appeared to be comfortable and were being provided with appropriate environmental enrichment. Mice were in individually ventilated cages (Optimice ®) and it was difficult for animal care staff to confirm the actual number of air changes in the cages.</p> <p>The panel was informed that pre-emptive analgesia was not being administered prior to [REDACTED] implant surgery in one laboratory, and recommended that the practice of using pre-emptive analgesia be the norm throughout the facility (see Regular recommendation no. 8).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input checked="" type="checkbox"/> Meets CCAC standards	<p>Communication was excellent. Any noted animal health issues are communicated electronically to the veterinarian, the researcher on record and the facility zone supervisor, and animals are assessed as per the UBC ACC grading system.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input checked="" type="checkbox"/> Meets CCAC standards	<p>The animal facility is fairly new and in very good shape.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input type="checkbox"/> Meets CCAC standards	<p>The facility is equipped with the Edstrom Watchdog system that monitors the environmental parameters of the facility 24/7/365; the system automatically contacts responsible parties via email if said parameters reach a value outside of the pre-set point.</p> <p>All holding room temperature, humidity, and air pressure readings as well as any reported alarms are recorded daily on the facility room check sheets for all zones by the [REDACTED] staff. The facility manager should ensure that the parameter readings taken at room level by the Edstrom system are consistent with central readings. The manager should also ensure that consistent and appropriate air changes are being provided in all animal rooms (see Regular recommendation no. 5b).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input checked="" type="checkbox"/> Meets CCAC standards	The facility was clean, tidy and well organized. The operations manager was commended for her diligence and knowledge.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: UNIVERSITY OF BRITISH COLUMBIA

Animal care and welfare (including housing and environmental enrichment)

<input checked="" type="checkbox"/> Meets CCAC standards	[redacted] supports research involving cold and warm water fish (e.g., trout, salmon, tilapia) and has the capacity to accommodate diverse studies (e.g., environmental chambers; various tank capacities and water systems including static, flow-through or recirculation tanks). Fish observed at the time of the assessment appeared to be in good health.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input checked="" type="checkbox"/> Meets CCAC standards	The facility is well managed and communication between stakeholders was commended (see Commendation nos. 6 and 8). Appropriate records were available.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input checked="" type="checkbox"/> Meets CCAC standards	Critical system monitoring is automated and appropriate back-up power is available. Renovations were occurring in [redacted] to replace pipes and filtration systems.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input checked="" type="checkbox"/> Meets CCAC standards	Water quality monitoring records were available and appropriate.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input type="checkbox"/> Meets CCAC standards	In general, appropriate measures are in place. The panel mentioned that wooden materials need to either be appropriately sealed or replaced (e.g., wooden walkways).
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input type="checkbox"/> Meets CCAC standards	The facility is generally well organized. Cleanliness standards in the procedural areas could be improved.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: UNIVERSITY OF BRITISH COLUMBIA

Animal care and welfare (including housing and environmental enrichment)

<input checked="" type="checkbox"/> Meets CCAC standards	Mice and rats seen at the time of the visit appeared to be comfortable and were being provided with appropriate environmental enrichment.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input checked="" type="checkbox"/> Meets CCAC standards	Communication was excellent. Any noted animal health issues are communicated electronically to the veterinarian, the researcher on record and the facility zone supervisor and animals are assessed as per the UBC ACC grading system.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input checked="" type="checkbox"/> Meets CCAC standards	This is a fairly new facility in good repair.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input checked="" type="checkbox"/> Meets CCAC standards	The UBC Building Operations group monitors the facility ventilation in 15 minute intervals via the UBC Building Management System (BMS). Any system alarms or failures are reported automatically from the BMS systems to ██████ Management team via email and text message, as well as to the UBC Building Operations BMS Controls group for response. 15-20 air changes per hour are provided in rodent housing rooms.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: UNIVERSITY OF BRITISH COLUMBIA

Animal care and welfare (including housing and environmental enrichment)

<input type="checkbox"/> Meets CCAC standards	<p>The panel visited three alternative housing sites that house birds (hummingbird, finch), hamsters and squirrels.</p> <p>Although the ACC conducts yearly site visits to ensure the appropriateness of facilities and veterinarians are available for consultation, the panel felt that the current arm's length oversight in these areas was insufficient. For example, the panel noticed two zebra finches with missing/ruffled feathers on their neck and observed bullying behaviour from other birds; however, there was no monitoring documentation from the research staff nor had a veterinarian been informed of possible animal welfare concerns (see Serious recommendation nos. 1a and 1c).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input type="checkbox"/> Meets CCAC standards	<p>Birds: Animal monitoring records should accurately reflect the ongoing monitoring and actions taken to safeguard animal welfare (see Serious recommendation nos. 1a and 1c and Regular recommendation no. 5d). The standard operating procedure available in the room describing intervention points and euthanasia was outdated. Current humane endpoints and euthanasia practices must be available and known by primary animal care (research) staff (see Serious recommendation no. 1b).</p> <p>Squirrels: Record keeping was well developed and complete.</p> <p>Hamsters: Electronic records were available and complete.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input type="checkbox"/> Meets CCAC standards	<p>The housing rooms for the birds and hamsters were generally well maintained with the exception of materials used in the enclosures (see below). The environmental chamber was in need of refurbishment and the panel was informed that a new science complex was to be built and the chamber relocated (see Serious recommendation no. 1b).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input type="checkbox"/> Meets CCAC standards	The panel mentioned that any location where animals are held must meet facility standards including standards for air quality (see Regular recommendation no. 5b). The <i>Heating, ventilation, and air conditioning: Addendum to the CCAC guidelines on laboratory animal facilities – characteristics, design and development (2019)</i> was recently published and provides further guidance on air quality parameters and air changes per hour.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input type="checkbox"/> Meets CCAC standards	Conditions in the extra-vivarial spaces should be revisited by the animal care committee to ensure they meet requirements (see Serious recommendation no. 1b). The panel noted several deficiencies in these spaces that require resolution: <ul style="list-style-type: none"> ▪ all surfaces in the surgical space [REDACTED] should meet standards for sanitation and cleanliness (e.g., dirty fan grate; unsealed cement pillar; rusty equipment); and ▪ all materials in animal housing systems must be sanitizable and in good repair (e.g., duct tape and wooden materials used in bird housing).
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	The <i>ACC Policy 009 – Alternative Housing or Holding of Experimental Animals</i> outlines the requirements for extra-vivarial spaces. In practice, the panel noted poor communication and lack of arm’s length oversight which must be improved to safeguard animal welfare and ensure appropriate facility standards are met (see Serious recommendation no. 1).
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: UNIVERSITY OF BRITISH COLUMBIA

Animal care and welfare (including housing and environmental enrichment)

<input checked="" type="checkbox"/> Meets CCAC standards	<p>██████████ is located in ██████████</p> <p>██████████ seen at the time of the visit were healthy and appeared comfortable. Animals were kept in appropriate housing conditions with good environmental enrichment. Animal based research conducted at ██████████ includes animal welfare research.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input type="checkbox"/> Meets CCAC standards	<p>The facility is well managed and communication between stakeholders is good. A consulting clinical veterinarian is on site about twice a month, and a UBC veterinarian visits quarterly.</p> <p>The ██████████ has struggled over the years to produce and maintain appropriate standard operating procedures (SOPs) for common animal procedures, facility operation, and training functions. UBC's ACC has highlighted this deficiency on multiple site visits, and has generated a prioritized list of SOPs to be written in consultation with UBC clinical veterinarians and, as needed, industry experts. Expected timelines for the production and revision of SOPs were also provided.</p> <p>Although efforts have recently been made to increase the number of current SOPs with the help of UBC's veterinarian, Dr. Baar recommended that the work to develop and review relevant SOPs meet the UBC ACC's timelines (see Regular recommendation no. 2a).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input type="checkbox"/> Meets CCAC standards	<p>The ██████████ facility is a combination of individual pens plus group pens. All other animal facilities are group free-stall facilities. Dr. Baar recommended that light fixtures in the ██████████ be covered (see Regular recommendation no. 2b).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input checked="" type="checkbox"/> Meets CCAC standards	The [redacted] are naturally ventilated. Roll-up curtains and doors help prevent cold drafts in the winter. Large forced-air fans increase the ventilation in the summer months.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input checked="" type="checkbox"/> Meets CCAC standards	The [redacted] was tidy.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: UNIVERSITY OF BRITISH COLUMBIA

Mice are currently involved in research, with plans for using rats in the near future. There is no animal-based teaching. The UBC ACC did not undertake an annual site visit to [REDACTED] in 2018, and Dr. Baar recommended that ACC facility visits be undertaken on a yearly basis (see **Regular recommendation no. 4a**), by at least three or more ACC members. Post Approval Monitoring visits are conducted as needed, based on risk, and it was suggested to harmonize [REDACTED] PAM checklist with UBC's form.

Animal care and welfare (including housing and environmental enrichment)

<input checked="" type="checkbox"/> Meets CCAC standards	The rodents seen during the visit appeared comfortable and were being provided with appropriate environmental enrichment.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input type="checkbox"/> Meets CCAC standards	A local consulting veterinarian reportedly comes in once a month; however, at the time of the assessment visit the frequency of her rounds had dropped off. Dr. Baar recommended that given the fact that ACS is not very involved in animal care at [REDACTED] the senior administrator review [REDACTED] agreement with the consulting veterinarian to ensure that clinical veterinary support is provided as required and as contracted (see Regular recommendation no. 6c). Veterinary visits are documented and sent to the ACC Manager.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input type="checkbox"/> Meets CCAC standards	The animal facility is segregated into clean and dirty sides, based on the health status of the mice. However, one room holding "dirty" mice is on the clean side, due to a lack of space on the dirty side. Dr. Baar recommended that efforts be made to keep dirty mice on the dirty side, and clean mice on the clean side, with appropriate air pressure differentials and other safeguards in place to help reduce the risk of cross-contamination (see Regular recommendation no. 6a). [REDACTED] animal care staff should work closely with UBC veterinarians to address this issue. [REDACTED] was creating a new rat surgery area in a multi-use room. [REDACTED] must ensure that the surgical area is appropriately segregated from other activities in the room (see Regular recommendation no. 6bi), that invasive surgery is conducted under a constant stream of sterile air such as that supplied by a type II biosafety cabinet or a portable laminar flow unit (see Regular recommendation no. 6bii), and that shelving in the surgical area is fitted with doors (see Regular recommendation no. 6biii).
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input type="checkbox"/> Meets CCAC standards	In an effort to facilitate appropriate biosecurity, ventilated cages for rats were suggested.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input type="checkbox"/> Meets CCAC standards	Extension cords in animal housing rooms should be as short as possible, and should not be directly on the floor, in an effort to minimize clutter and allow appropriate sanitation of the floor.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: UNIVERSITY OF BRITISH COLUMBIA OTHER FACILITIES

[REDACTED] located on-campus, is primarily run for [REDACTED] but provides a small teaching component for students within the Faculty of Land and Food Systems and the community. [REDACTED] appropriate shelter, security and care. Appropriate veterinary and compliance oversight are in place. Pedagogical merit review of active teaching protocols is required (see *Section 3*).

Other facilities: The panel did not visit the [REDACTED] facilities of the UBC Marine Mammal Research Unit nor the [REDACTED] within the Canadian Department of Fisheries and Ocean's (DFO) [REDACTED]. The panel encouraged the ACC to ensure that annual site visits and post-approval monitoring activities (based on risk) continue to be undertaken.

SITE VISIT: VANCOUVER COASTAL HEALTH RESEARCH INSTITUTE

Vancouver Coastal Health Research Institute, is an independently CCAC certified affiliate, part of UBC's integrated animal ethics and care program.

[REDACTED]

At the time of the visit, the animals seen appeared to be comfortable. The panel was informed that animal housing was to move to the new [REDACTED] once it is completed.

The [REDACTED] has had a number of challenges over the years, and has been the subject of Serious recommendations on many assessment visits. The most serious concerns related to the functional design of the facility, the loading dock, the cage wash area, the ventilation system and air flow, surfaces throughout the facility, non-human primate housing, and facility contamination with pinworm and parvovirus.

Some improvements have occurred over the years. Non-human primates are no longer housed in the facility (since February 2019), air changes reportedly meet CCAC expectations, [REDACTED] is reportedly Parvo-free, and [REDACTED] is migrating to [REDACTED]. The functional design, loading dock and cage wash area still do not meet CCAC standards, nor do some surfaces in the facility. Temperature control in animal rooms is at times problematic, with soaring temperatures some days. Pinworm contamination is still a concern.

The panel recommended that all animal housing and procedure areas in [REDACTED] be brought up to CCAC standards, or that these areas be closed and animals and activities moved to appropriate facilities that meet CCAC standards (see **Serious recommendation no. 2**).

SITE VISIT: VANCOUVER COASTAL HEALTH RESEARCH INSTITUTE

The [redacted] Plans to relocate animal activities from [redacted] to a more suitable facility have been in the works for a number of years. The 2013 CCAC assessment report included a Regular recommendation that “*if any animal housing or use is to remain in the [redacted], it be undertaken in conditions that meet UBC and CCAC standards for animal holding and use, and facility maintenance and management, with independent animal health and welfare oversight*”.

The panel was informed that all rat and mouse housing would be transferred to the new [redacted] (awaiting completion), and that mouse procedures and surgeries would be moved to a newly renovated [redacted]

Animal care and welfare (including housing and environmental enrichment)

<input type="checkbox"/> Meets CCAC standards	Rats seen in the housing room appeared comfortable, with appropriate environmental enrichment. Some larger rats with head caps were singly housed. The panel had serious concerns with the behavior room [redacted] in that rodents were being housed overnight in conditions that did not meet CCAC standards. The panel recommended that all animal housing and procedure areas in [redacted] be brought up to CCAC standards, or that these areas be closed and animals and activities moved to appropriate facilities that meet CCAC standards (see Serious recommendation no. 2).
<input type="checkbox"/> Generally meets CCAC standards	
<input checked="" type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input type="checkbox"/> Meets CCAC standards	The behaviour room [redacted] did not meet CCAC standards in that there were inappropriate and deteriorating surfaces such as ceilings, walls and wooden material (see Serious recommendation no. 2). The surfaces in the surgery room did not meet CCAC standards (see Serious recommendation no. 2).
<input type="checkbox"/> Generally meets CCAC standards	
<input checked="" type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input type="checkbox"/> Meets CCAC standards	<p>The housing room was being provided with 20 air changes/hour, room temperature seemed appropriate, but humidity levels were not controlled and tended to fluctuate.</p> <p>There was no specific temperature or humidity monitoring or control in the behavior room, which did not meet CCAC standards with regard to air changes (see Serious recommendation no. 2).</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input checked="" type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input type="checkbox"/> Meets CCAC standards	<p>Deteriorating and inappropriate surfaces can contribute to cross-contamination.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input type="checkbox"/> Meets CCAC standards	<p>The procedure rooms were cluttered.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	<p>The behavior and surgery rooms were retrofitted lab spaces and did not meet CCAC standards (see Serious recommendation no. 2).</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input checked="" type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: VANCOUVER COASTAL HEALTH RESEARCH INSTITUTE

The [redacted] animal facility was in the final stages of construction and did not house any animals at the time of the visit. The panel was informed that delays in completing the construction and starting the commissioning phase were related to a funding shortfall. Given that this facility will serve to house animals currently in deficient facilities [redacted], the panel recommended that the [redacted] animal facility be completed and commissioned in a timely way (see **Serious recommendation no. 3**).

SITE VISIT: VANCOUVER COASTAL HEALTH RESEARCH INSTITUTE

Animal care and welfare (including housing and environmental enrichment)

<input checked="" type="checkbox"/> Meets CCAC standards	<p>██████ is a rodent research facility focusing on ████████ research. The conventional facility houses both mice and rats and has surgical and procedural / experimental spaces.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input type="checkbox"/> Meets CCAC standards	<p>Mosaic is to be implemented by the end of 2019. Animal care support is provided through staff from the ████████ who perform husbandry and health monitoring. Staff were commended for their care of the animals (see Commendation no. 8).</p> <p>Ongoing post-approval monitoring of techniques and outcomes (e.g., surgical practices, welfare) was encouraged given the invasive nature of the work.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input checked="" type="checkbox"/> Meets CCAC standards	<p>The facility is generally well designed and maintained.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input type="checkbox"/> Meets CCAC standards	<p>Environmental parameters are generally appropriate however humidity levels tend to be low (20-25%). There has been no noticeable impact on animal health at this point in time. Air changes per hour (ach) were appropriate (15-17ach).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input checked="" type="checkbox"/> Meets CCAC standards	Facility was organized and clean.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: VANCOUVER COASTAL HEALTH RESEARCH INSTITUTE

is in the process of adopting Mosaic, which would help track animal numbers, especially breeding colonies, and keep track of animal movements within the different components of the large facility. also continues to work on harmonizing SOPs, which would bring more consistency when moving animals between facilities. researchers are trained through UBC's program.

Animal care and welfare (including housing and environmental enrichment)

<input type="checkbox"/> Meets CCAC standards	The facility houses rats, mice, frogs and rabbits, and occasionally pigs used in non-recovery training, hamsters and sheep. All the animals seen at the time of the visit appeared comfortable and were being provided with appropriate environmental enrichment.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	
The panel recommended that avoid housing rats singly unless scientifically justified or for reasons of incompatibility, and acquire larger rat cages if necessary (see Regular recommendation no. 5c).	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input checked="" type="checkbox"/> Meets CCAC standards	The panel was informed that there was good communication amongst stakeholders.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input type="checkbox"/> Meets CCAC standards	Floors in some areas of the facility were showing signs of age, with obvious cracks. The panel recommended that in room (frog room), the rusty floor drain grate be replaced (see Regular recommendation no. 7a) and surfaces be repaired where paint was chipping (see Regular recommendation no. 5i). The panel also recommended that the facility manager verify that the room has timely access to emergency power in case of a power failure (see Regular recommendation no. 7b).
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input type="checkbox"/> Meets CCAC standards	Environmental parameters were generally appropriate; however, the panel noted that humidity levels were low (15%) in room (see Regular recommendation no. 5b).
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input type="checkbox"/> Meets CCAC standards	The facility was clean however there was an obvious lack of storage, with equipment parked in hallways. The panel commended the assistant facility manager for her diligence and knowledge.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: VANCOUVER COASTAL HEALTH RESEARCH INSTITUTE

Animal care and welfare (including housing and environmental enrichment)

<input checked="" type="checkbox"/> Meets CCAC standards	Frogs and zebrafish observed were being well cared for. Previous concerns with frog density and room capacity have been addressed.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input checked="" type="checkbox"/> Meets CCAC standards	Excellent records are maintained for both housing rooms. The panel commended the staff for their diligent monitoring of animals and excellent records (see Commendation no. 8).
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input checked="" type="checkbox"/> Meets CCAC standards	Rooms are well organized.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input checked="" type="checkbox"/> Meets CCAC standards	Water quality parameters were well defined and monitored.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input checked="" type="checkbox"/> Meets CCAC standards	Appropriate measures were in place.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: BC CANCER AGENCY (VANCOUVER)

_____ is an independently CCAC certified affiliate, part of UBC’s integrated animal ethics and care program. _____ has adopted Mosaic, has harmonized a number of its programs with UBC programs, including health surveillance and animal user training, and continues to work on harmonizing SOPs.

Animal care and welfare (including housing and environmental enrichment)

<input checked="" type="checkbox"/> Meets CCAC standards	Mice and rats seen at the time of the visit appeared comfortable. Environmental enrichment was appropriate.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input type="checkbox"/> Meets CCAC standards	Communication was very good. Monitoring sheets were available and easily accessible by staff on a shared folder. Cage cards throughout the facility provided an “at-a-glance” description of procedures, expected/ACC approved effects, experimental endpoint date and immediate care/first aid opt-out instructions. The panel reminded staff that all protocols and humane endpoints should be readily available in close proximity to animal housing areas.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input type="checkbox"/> Meets CCAC standards	The panel supported the ACC’s recommendation that large areas of peeling paint on some walls (e.g., outside of room _____) be corrected (see Regular recommendation no. 5i). CCAC guidelines require that materials and finishes be durable, impervious, and resistant to water and chemicals used in their sanitation.
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input type="checkbox"/> Meets CCAC standards	<p>18 to 33 air changes an hour were being supplied in animal housing rooms, with room temperatures of 20.8 to 21.7 Celsius. The panel felt that the rooms were on the cool side, yet within an acceptable range for mice given that sufficient and appropriate nesting material was available to allow mice to thermoregulate. The panel noticed that the relative humidity was on the low side in animal rooms and recommended that efforts be made to ensure appropriate and consistent levels (see Regular recommendation no. 5b).</p> <p>The panel also noticed that readings at room level by the Edstrom Watchdog system did not correlate with centralized readings provided to the panel, and this should be verified.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input checked="" type="checkbox"/> Meets CCAC standards	
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input checked="" type="checkbox"/> Meets CCAC standards	<p>The facility was clean, tidy and well organized. The panel commended the Operations Manager – [REDACTED] for her diligence and knowledge.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: PROVIDENCE HEALTH CARE RESEARCH INSTITUTE

Providence Health Care Research Institute is an independently CCAC certified affiliate, part of UBC's integrated animal ethics and care program. The animal facility at the [REDACTED] is referred to as the [REDACTED]

Animal care and welfare (including housing and environmental enrichment)

<input type="checkbox"/> Meets CCAC standards	<p>The [REDACTED] houses rodents (mainly mice and some rats). Mice seen at the time of the assessment appeared to be in good condition and well cared for (see Commendation no. 8). The panel commended the facility for implementing a double-decker style cage for rats which allows them to display more of their natural behaviours.</p> <p>The panel observed that a number of mice cages were severely discolored (cloudy) and some in use were in very poor condition (e.g., observation of animals was impeded by cloudiness). The panel recommended that they be replaced and that management continue to prioritize the cage replacement program (see Regular recommendation no. 5a). To prevent further deterioration of cages, cleaning methodology could be studied and revised if suitable.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Communication among veterinarian(s), facility manager/animal care staff and animal users

<input type="checkbox"/> Meets CCAC standards	<p>The [REDACTED] does not employ the Mosaic system at this time. The panel commented that it would be beneficial to the animal ethics and care program for information to be shared in a common fashion (e.g., Mosaic) as it would further facilitate the work of the veterinarians and compliance team and provide more timely information to the ACC. In the absence of the Mosaic system, effective communication must continue (see Regular recommendation nos. 5d, 5e and 5f).</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Design and maintenance of the facility

<input checked="" type="checkbox"/> Meets CCAC standards	<p>The current [REDACTED] is an older facility and the panel was informed that there is a long-term project to develop a new [REDACTED] (expected 2026); however, it is not known at this time how or when a new animal facility would be incorporated.</p> <p>The panel mentioned that in the interim, regular maintenance (both facility and equipment) should continue in order to keep the facility in good condition.</p>
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Environmental parameters (air/water quality, temperature/humidity/light/noise)

<input type="checkbox"/> Meets CCAC standards	<p>A centralized building monitoring system (within the hospital) controls environmental parameters for the animal facility. Environmental parameters are generally appropriate however humidity levels tend to be low (20-25%) and are measured by zone (versus single rooms). There has been no noticeable impact on animal health at this point in time.</p> <p>Air changes per hour (ach) were not available at the time of the assessment and should be reviewed to ensure standards are met (see Regular recommendation no. 5b). The <i>Heating, ventilation, and air conditioning: Addendum to the CCAC guidelines on laboratory animal facilities – characteristics, design and development (2019)</i> was recently published and provides further guidance on air quality parameters and air changes per hour.</p>
<input checked="" type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Biosecurity/biosafety/application of occupational health and safety measures

<input checked="" type="checkbox"/> Meets CCAC standards	Appropriate measures are in place.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Organization of the facility/housekeeping

<input checked="" type="checkbox"/> Meets CCAC standards	The facility is clean and organized.
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

Areas outside of purpose-built animal facilities used for animal care or use

<input type="checkbox"/> Meets CCAC standards	N/A
<input type="checkbox"/> Generally meets CCAC standards	
<input type="checkbox"/> Does not meet CCAC standards	

SITE VISIT: TRIUMF

TRIUMF is Canada's particle accelerator centre. TRIUMF was founded in 1968 by Simon Fraser University, the University of British Columbia (UBC), and the University of Victoria to meet research needs that no single university could provide. The University of Alberta joined the TRIUMF consortium almost immediately. Currently, twelve full members and seven associate members from across Canada form the consortium. TRIUMF is looking to become a CCAC independently certified affiliate, part of UBC's integrated animal ethics and care program.

At the time of the visit, no animal-based work had ever been undertaken in its facilities, and TRIUMF was proposing to obtain a Preliminary Certificate of GAP – Good Animal Practice®. Given that TRIUMF's animal ethics and care program will be wholly overseen by UBC's ACC within an integrated program and researchers will be working closely with UBC animal care staff and veterinarians, and given that a formal agreement is signed between the parties, TRIUMF qualifies for a Preliminary Certificate, valid for up to 18 months. Before the end of this preliminary certification period, a visit will be undertaken by the CCAC to assess the animal-based program, including any holding or procedure areas and, if warranted, a Certificate of GAP valid for three years will be assigned.

SERIOUS RECOMMENDATIONS

Apply to significant or long-standing weaknesses in the animal ethics and care program. The measures taken and planned in response to these recommendations must be provided to the CCAC, typically within three months of the institution receiving the written recommendations.

Due Date: November 22, 2019

Respond to: Ms. Monica Séguin, Associate Director of Assessment (mseguin@ccac.ca)

1. **That in permanent alternative holding and housing facilities the ACC ensure:**
 - a. **robust oversight of animal-based activities by independent-of-research-team-members;**
 - b. **appropriate infrastructure, management practices, and standard operating procedures; and**
 - c. **improved communication between researchers, post-approval monitoring personnel and clinical veterinarians.**

Relevant policies and guidelines can be found in:

- The *CCAC policy statement on: terms of reference for animal care committees* (2006)
- The *CCAC policy statement for: senior administrators responsible for animal care and use programs* (2008)
- The *CCAC guidelines: husbandry of animals in science* (2017)

2. **That all animal housing and procedure areas in [REDACTED] be brought up to CCAC standards, or that these areas be closed and animals and activities moved to appropriate facilities that meet CCAC standards.**

Relevant policies and guidelines can be found in:

- The *CCAC policy statement for: senior administrators responsible for animal care and use programs* (2008)
- The *CCAC guidelines on: laboratory animal facilities – characteristics, design and development* (2003)
- Heating, ventilation, and air conditioning: Addendum to the *CCAC guidelines on: laboratory animal facilities – characteristics, design and development* (2019)

3. **That the [REDACTED] be completed and commissioned in a timely way.**

Relevant policies and guidelines can be found in:

- The *CCAC policy statement for: senior administrators responsible for animal care and use programs* (2008)
- The *CCAC guidelines on: laboratory animal facilities – characteristics, design and development* (2003)

REGULAR RECOMMENDATIONS

Apply to weaknesses in the animal ethics and care program. The measures taken and planned in response to these recommendations must be provided to the CCAC within six months of the institution receiving the written recommendations.

Due Date: February 21, 2020

Respond to: Ms. Monica Séguin, Associate Director of Assessment (mseguin@ccac.ca)

1. That in the [REDACTED] facility management ensure:
 - a. all animal housing and procedure areas be brought up to CCAC standards, or that these areas be closed and animals and activities moved to appropriate facilities that meet CCAC standards;
 - b. the light intensity in the cages on the top shelves does not negatively affect animals;
 - c. daily observations of the animals occur with minimal disturbance to animals; and
 - d. the number of cages does not overwhelm the capacity of the ventilation system to provide appropriate air to the animals.

Relevant policies and guidelines can be found in:

- The *CCAC policy statement for: senior administrators responsible for animal care and use programs* (2008)
- The *CCAC guidelines on: laboratory animal facilities – characteristics, design and development* (2003)
- Heating, ventilation, and air conditioning: Addendum to the *CCAC guidelines on: laboratory animal facilities – characteristics, design and development* (2019)
- The *CCAC guidelines: husbandry of animals in science* (2017)

2. That at the University of British Columbia [REDACTED]:
 - a. the work to develop and review relevant standard operating procedures meet the timelines identified by UBC's ACC; and
 - b. light fixtures in the [REDACTED] be covered.

Relevant policies and guidelines can be found in:

- The *CCAC policy statement on: terms of reference for animal care committees* (2006)
- The *CCAC guidelines: husbandry of animals in science* (2017)
- The *CCAC guidelines on: the care and use of [REDACTED] animals used in research, teaching and testing* (2009)
- The *CCAC guidelines on: laboratory animal facilities – characteristics, design and development* (2003)

3. That the University of British Columbia continue to:

- a. refine its pedagogical merit review process to ensure that animals are only involved if essential, and that pedagogical merit review be done independently of and prior to ethical review; and**
- b. expand its animal user training program by including non-rodent species.**

Relevant policies and guidelines can be found in:

- *The CCAC policy statement for: senior administrators responsible for animal care and use programs (2008)*
- *The CCAC guidelines on: training of personnel working with animals in science (2015)*

4. That the University of British Columbia Animal Care Committee (ACC):

- a. ensure that all facility visits be undertaken on a yearly basis and that every ACC member participate in at least one facility site visit a year;**
- b. detail the protocol review and decision-making process for all protocols including collaborations, interim approvals and pilot studies in the Terms of Reference (or other formal document) and ensure pilot studies and breeding protocols are reviewed by the entire ACC at face-to-face meetings;**
- c. continue to oversee the development, revision and implementation of SOPs;**
- d. refine its annual protocol renewal process to ensure that important animal numbers for the coming year are appropriately justified; and**
- e. ensure appropriate sharing of monitoring information amongst collaborating institutions.**

Relevant policies and guidelines can be found in:

- *The CCAC policy statement on: terms of reference for animal care committees (2006)*
- *The CCAC policy statement on: animal-based projects involving two or more institutions (2003)*

5. That in all facilities overseen by the University of British Columbia Animal Care Committee (ACC):

- a. management continue to prioritize the cage replacement program;**
- b. species-appropriate temperature, humidity, and number of air changes be consistently provided in animal housing rooms;**
- c. rodent cage sizes meet CCAC guidelines;**
- d. prompt reporting of clinical cases to veterinarians be ensured;**
- e. animal numbers, including breeding animals, be accurately tracked and reported to the ACC;**

- f. mortality and morbidity numbers be accurately tracked and reported to ACS;**
- g. efforts continue to be made to share animals between researchers, and between animal facilities;**
- h. crisis management programs include plans to address specific risks to animal welfare;**
- i. surfaces be durable, impervious and resistant to water and chemicals used in their sanitation; and**
- j. sufficient storage space be available.**

Relevant policies and guidelines can be found in:

- *The CCAC policy statement for: senior administrators responsible for animal care and use programs (2008)*
- *The CCAC policy statement on: terms of reference for animal care committees (2006)*
- *The Canadian Association of Laboratory Animal Medicine (CALAM) Standards of Veterinary Care (2007)*
- *The CCAC guidelines: husbandry of animals in science (2017)*
- *The CCAC guidelines on: laboratory animal facilities – characteristics, design and development (2003)*
- *Heating, ventilation, and air conditioning: Addendum to the CCAC guidelines on: laboratory animal facilities – characteristics, design and development (2019)*

6. That at the University of British Columbia

_____ :

- a. efforts be made to segregate clean housing rooms from dirty housing rooms, and maintain appropriate air pressure differentials and other safeguards to help reduce the risk of cross-contamination;**
- b. surgical area:**
 - i. the surgical area be appropriately segregated from other activities in the room;**
 - ii. invasive surgery be conducted under a constant stream of sterile air such as that supplied by a type II biosafety cabinet or a portable laminar flow unit;**
 - iii. shelving in the surgical area be fitted with doors; and**
- c. the senior administrator review _____ agreement with the consulting veterinarian to ensure that clinical veterinary support is provided as required and as contracted.**

Relevant policies and guidelines can be found in:

- *The CCAC policy statement for: senior administrators responsible for animal care and use programs (2008)*
- *The CCAC policy statement on: terms of reference for animal care committees (2006)*

- The Canadian Association of Laboratory Animal Medicine (CALAM) *Standards of Veterinary Care* (2007)
- The CCAC *guidelines: husbandry of animals in science* (2017)
- The CCAC *guidelines on: laboratory animal facilities – characteristics, design and development* (2003)

7. That in room [REDACTED] :

- a. the rusty floor drain grate be replaced; and**
- b. access to emergency power in case of a power failure be available in a timely manner.**

Relevant policies and guidelines can be found in:

- The CCAC *policy statement for: senior administrators responsible for animal care and use programs* (2008)
- The CCAC *guidelines on: laboratory animal facilities – characteristics, design and development* (2003)

8. That at the [REDACTED] pre-emptive analgesia be the norm for invasive surgery.

Relevant policies and guidelines can be found in:

- The CCAC *policy statement for: senior administrators responsible for animal care and use programs* (2008)
- The CCAC *policy statement on: terms of reference for animal care committees* (2006)
- The Canadian Association of Laboratory Animal Medicine (CALAM) *Standards of Veterinary Care* (2007)
- The CCAC *guidelines: husbandry of animals in science* (2017)

COMMENDATIONS

Apply to excellent conditions, practices or personnel in an animal ethics and care program.

- 1. That the senior administration of the University of British Columbia, and in particular the Associate Vice-President Research, be commended for their active commitment and continued strong support of a sound animal ethics and care program.**
- 2. That the senior administration of Vancouver Coastal Health Network and BC Cancer (Vancouver) be commended for their efforts to improve and harmonize their animal ethics and care program with the University of British Columbia's program.**
- 3. That the Animal Care Committee and its subcommittees be commended for their excellent work in ensuring high standards of animal ethics and welfare.**
- 4. That the University Veterinarian be commended for his leadership and ongoing commitment to ensuring high standards of animal care and welfare across the animal ethics and care program.**
- 5. That the Animal Care Committee (ACC) Manager and Assistant Manager be commended for their support of the ACC and the animal ethics and care program.**
- 6. That the clinical veterinarians be commended for the quality of their work and their collaboration with researchers, facility managers and the Animal Care Committee, and for providing a supportive environment to animal care personnel.**
- 7. That the Post-Approval Monitoring (PAM) Veterinarian and the PAM Compliance Officer be commended for their collaborative work in ensuring high standards of animal care and welfare.**
- 8. That the animal care staff and facility managers be commended for their exemplary dedication to animal care and welfare.**