ASSESSMENT REPORT

UNIVERSITY OF BRITISH COLUMBIA

VANCOUVER, BRITISH COLUMBIA

DATE OF VISIT: MARCH 12-15, 2013

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 care and use of animals in research, teaching and testing on a Canada-wide basis**.

Date of previous assessment:
June 8-11, 2010

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PROGRAM OVERVIEW

UBC has made excellent progress in its animal care and use program under the leadership of the President and Vice Chancellor, the Vice President, Research and International, and in particular of the newly appointed Associate Vice President, Research and International.

The CCAC appreciates that the President, the Vice President, Research and International, and the Associate Vice President, Research and International took time to meet with the Chair of the assessment panel and the two accompanying assessment directors before the assessment began to discuss the program's developments and plans for further improvements. One of the highlights of UBC's work has been its initiative to openly and clearly explain its use and care of animals to the public in many different ways (website, public forums, articles, etc.). The CCAC appreciates UBC's innovative work to demystify the care and use of animals in science, which is very helpful to the entire community (see Commendation no. 1).

The university has made large investments in maintaining facilities and building new facilities to support the animal care and use program and provide high quality shared services to faculty members conducting animal-based work. Among the highlights of the new facilities are (see Commendation no. 2):

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- the Centre for [redacted] which includes many elements to protect and promote animal welfare for large and small animal housing and use

- the [redacted] aquatic facilities, and the new [redacted] Facility for rodent housing, which replace considerably outdated facilities

Those responsible for the planning, design, financing and completion of these facilities are to be commended for their hard and impressive work (see Commendation no. 4).

While UBC now has some excellent facilities, its animal users, veterinarians, facility managers, animal care staff and others have been working in separate, decentralized facilities for many years. There were resulting organizational and communication challenges to overcome in order to be able to (see Serious recommendation no. 1):

- ensure effective communication between research teams and veterinary and animal care staff
- make the best use of each facility
- use and manage the facilities in well-coordinated, collaborative ways that will ensure sound standards of animal care and use and good services to animal users

The Associate Vice President, Research and International has been working with all concerned to establish sound management, coordination and communication structures.

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With respect to the organization of veterinary and animal facility management services, a proposed organizational chart was presented to the assessment panel, which groups the Associate University Veterinarian and the three other veterinary positions (only two were staffed at the time of the visit) under the University Veterinarian (formerly the Director of Animal Care), within Animal Care & Veterinary Services (ACVS).

A separate reporting line was being developed for the Senior Managers of the Centre for [redacted], the Centre for [redacted], the [redacted] Facility, the Facility [redacted] for and [redacted] Unit. It had been proposed that they all report to a new Director of Business Development & Operations. The panel was informed that this would allow the veterinary group to focus on veterinary services and the University Veterinarian to provide leadership on all animal health and welfare matters, while the Director of Business Development & Operations manages human resources and other administrative matters, working with financial personnel on cost containment in particular.

The panel felt that this could be a functional structure as long as (see Serious recommendation no. 1a):

- there continues to be active involvement of veterinary and senior animal care staff in any decisions that affect animal care and facility management

- a formal re-evaluation of the optimum number and type of veterinarians needed by UBC is undertaken, with a view to finding the most effective ways of deploying veterinary and other human resources in the new environment, following the many changes made to the program, including:
    - removing administrative responsibilities from the veterinarians
    - consolidating animal facilities and opening new facilities
    - dividing the program into service and compliance components

An In Vivo Research Facilitation Committee (IVRFC) had also been created, to facilitate research once related animal use protocols have been approved by the Animal Care Committee (ACC). The IVRFC is chaired by the Associate Vice President, Research and International and includes the University Veterinarian, the ACC Chair and senior representatives from each of the animal-using faculties, centres and other components of the UBC system. It provides advice on management of resources, and guidance on planning, space allocation and use of animal facilities. This is one helpful means of improving communication and problem-solving. The panel encouraged the IVRFC to ensure that there is good communication between the representatives on the committee and the animal facility managers/animal care staff, researchers and clinical veterinarian in their area to ensure that:

- all relevant information is available to the committee
- the solutions proposed and adopted are as well adapted as possible to the work being proposed or undertaken

The panel appreciated that research is facilitated and monitored after it has been approved by the ACC, but encouraged all involved to ensure that as much effort as possible is invested before protocols are approved by the ACC. Researchers provided with sound training and support, in particular from the ACC, veterinarians, facility managers and senior technicians, to prepare their protocols well and plan for successful work will prevent animal-related concerns, and avoid lost

time, effort and investment. The panel encouraged UBC to invest to the greatest extent possible in the prevention of difficulties, rather than in having to address them post-ACC approval.

One of the other key tools for good communication is the RISe protocol management and information system. The panel was informed there are some upgrades to the RISe system that would be very useful to the animal care and use program that may be delayed due to other priorities. The panel encouraged UBC to ensure that the RISe system provides good support to all parts, and communication between all parts, of the animal care and use program (see Serious recommendation no. 1).

CHANGES SINCE THE LAST ASSESSMENT VISIT

The Associate Vice President, Research and International was appointed in 2011 and is now the senior administrator with primary responsibility for the animal care and use program.

In addition to the changes to the animal facilities, two veterinarians left UBC in 2012, one new clinical veterinarian was hired and another veterinarian was promoted to Associate University Veterinarian. There was one vacant veterinary position at the time of the visit.

FUTURE PROJECTS

Staff and building names have been redacted for privacy and security

A new [redacted] Facility is being planned for; it will include an animal facility that is meant to replace outdated rodent housing and procedural space used by neuroscientists in the [redacted] and associated facilities.

UBC is also considering undertaking Good Laboratory Practice (GLP) studies, possibly at the Centre for [redacted]. The [redacted] Facility conducts some GLP studies and was successfully audited and accredited by the Standards Council of Canada.

PROGRAM STRUCTURE, HUMAN RESOURCES AND INSTITUTIONAL POLICIES

The ACC Chair and University Veterinarian report to the Vice President, Research and International through the Associate Vice President, Research and International. The Director of the Office of Research Services, to whom the ACC Manager and the two members of the Continuing Review (post-approval monitoring) personnel report, also reports to the Vice President, Research and International.

The UBC Animal Care Policy Committee and the UBC Post-Approval Monitoring Committee both report to the ACC.

In addition to the human resources structure for the shared animal facilities described on p. 2, there are also other, decentralized animal facilities in which the facility manager either reports to the facility director ([redacted] Research Centre, [redacted] Centre for [redacted] Research Institute, and [redacted]) or to the Director of the Animal Facilities of the [redacted] Research Institute ([redacted] and [redacted]).

An Animal Care Facilities Managers Committee was in place at the time of the visit, reporting to the University Veterinarian. It was meeting relatively infrequently and had not yet been able to capitalize on exchanges between members and interactions with the ACC and veterinarians to put in place many shared UBC practices and procedures, and to facilitate training and other common activities. The panel noted that there was relatively little emphasis on the role of animal care technicians in the UBC system. Given that UBC has a decentralized system, the panel recommended that animal care technicians be key personnel who should be supported in disseminating shared good practices and procedures, facilitating the follow-up of any concerns with animals and ensuring ongoing assistance to and training of animal users (see Serious recommendation no. 1d).

There is an overall UBC *Research Policy* (no. 87), that dates back to 1995 and in which section 4 on *The Use of Animals for Teaching and Research* will need to be updated to reflect current structures and processes.

1. ANIMAL CARE COMMITTEE (ACC)

Reporting lines

☒ Meets CCAC Standards	
☐ Generally meet CCAC Standards	
☐ Does not meet CCAC Standards	

Authority

☒ Meets CCAC Standards	
☐ Generally meet CCAC Standards	
☐ Does not meet CCAC Standards	

Composition

☒ Meets CCAC Standards	The ACC members, including the Chair and community representatives, are dedicated and engaged in promoting high standards of animal care and use (see Commendation no. 4). The panel encouraged UBC to continue to involve a variety of researchers from all areas of the UBC system on the ACC, and to ensure the most effective communication possible between the ACC and researchers more generally, including through meetings, information and training resources and other opportunities. The ACC Manager is highly experienced, organizes the ACC's work effectively and efficiently and provides comprehensive and timely information to all involved. The ACC Manager and Animal Care Assistant provide exemplary support to the ACC (see Commendation no. 4).
☐ Generally meet CCAC Standards	
☐ Does not meet CCAC Standards	

Training for ACC members

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Excellent support and training opportunities are available for ACC members.

ACC meetings (frequency, quality of minutes, quorum)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The ACC meets frequently (45 times in three years, with an additional full day retreat every year) and detailed minutes are kept of each meeting.

Site visits (frequency, scope, quality of reports)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Well-structured annual site visit reports are produced, and written responses are provided. Most ACC members participate in site visits at least once a year but not all. The panel encouraged all members to participate in visits at least annually.

Process for overseeing animal use areas outside of purpose-built animal facilities

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	There is a *Policy on Alternate Housing* for any animals to be housed outside of purpose-built facilities for more than 12 hours. The panel appreciated the policy and ACC visits to all such areas, but noted during the panel visits of some of these areas and of some laboratories that UBC and CCAC standards were not being met. The panel therefore recommended that measures be taken to ensure that all alternate housing areas in which animal are being housed and all laboratories in which animals are being used meet UBC and CCAC standards, including independent oversight of animal health and welfare (see Regular recommendations nos. 1b) and 3) and the site visit section of this report).

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

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	

Overall functioning

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The ACC members work conscientiously on a wide range of animal care and use issues. With the ACC at the centre of the animal care and use program, it is essential that it continue to play a key role in facilitating communication between and buy-in from the various individuals and groups who are part of the program. To this end, the panel recommended that the ACC consider

	further ways to make its processes more effective and efficient (see Serious recommendation no. 1e), to help improve researcher – ACC collaborative work, as well as collaborative work with the veterinary and animal care staff (see also the sections on SOPs, protocol review and veterinary services in this report). The panel noted that if the ACC determines that there is too much protocol review work to keep carrying it out at full ACC meetings, it has the option of creating protocol review subcommittees.

2. DOCUMENT REVIEW

Terms of reference of the ACC(s)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The *Animal Care Committee Terms of Reference* is a generally well written and complete document that mostly matches CCAC policy. However, the panel noted that: • in point 13, the ACC should avoid voting on protocols, and if a vote is necessary, the ACC should consider limiting the number of dissenting votes that can be acceptable for a protocol to be approved. In the *Animal Care Committee Terms of Reference*, the bar for approval of a decision was set at "greater than 50% of those present at the meeting". For a protocol to be approved, it is much preferable for there to be no more than a very small number of dissenting votes. In practice, voting is rarely used • in point 20, the ACC should be responsible not only for "inspecting and approving all UBC facilities for the housing, care and production of animals" but also for all areas where animals are used, such as laboratories (see Regular recommendation no. 3) • interim approvals of protocols are rarely granted by the ACC, but since they are in some exceptional cases, there should be a definition of this procedure • more generally, the *Animal Care Committee Terms of Reference* should refer to all other relevant UBC policies, procedures and processes rather than use generic language

Standard operating procedures (SOPs) (ongoing development and review, comprehensive set)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	There are a number of SOPs in place at UBC. There are some SOPs that are applicable system wide and that have been approved by the ACC for general use. However, for the most part, facilities are individually responsible for their animal care and facility management procedures and protocol authors are responsible for their own SOPs. The ACC only reviews and approves SOPs that are submitted to it, mostly by protocol authors. This leads to a fragmented system where good practices are not always shared to facilitate everyone's work and ensure sound standards of animal care and use. The panel therefore recommended that UBC and its ACC and veterinary/facility manager/animal care staff and research teams emphasize the sharing of good

	practices and the use of appropriate SOPs throughout the system, with good collaboration to identify, review and apply appropriate SOPs (see Serious recommendation no. 1c).

Other ACC documents (policies, procedural/informational documents, other resources)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	A number of other policies, procedures and informational documents on a variety of subjects have been developed by the ACC, which is appreciated.

3. MERIT REVIEW OF RESEARCH, TEACHING AND TESTING INVOLVING ANIMALS

Scientific merit of research

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	There is a Peer Review Subcommittee that reports to the Associate Vice President, Research & International. The 10 members of this subcommittee are UBC scientists who review research projects that have not been subject to independent, expert review. The panel noted that the selection of reviewers for each project should normally be the responsibility of the subcommittee itself or of the Associate Vice President, Research & International. The subcommittee and Associate Vice President, Research & International should seek reviews in other quarters as needed for the peer reviews to be both expert and independent. They should also be based on complete information related to the research project. All of these elements should be defined in written policy (see Regular recommendation no. 6). The CCAC will shortly be publishing a new *CCAC policy statement on: scientific merit and ethical review of animal-based research*, with accompanying frequently asked questions.

Pedagogical merit of teaching

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	There is a UBC ACC *Policy on Pedagogical Merit* (policy no. 21) that defines that proposed teaching involving animals must have been found to have pedagogical merit and must be approved by the ACC. The CCAC is in the process of preparing better guidance on evaluating the pedagogical merit of teaching protocols, and will keep its constituents informed of the results. The CCAC Three Rs Microsite is a resource designed to assist animal users, curriculum committees and animal care committees in finding up-to-date information on possible replacements, reductions and refinements to the use of animals.

4. PROTOCOL REVIEW BY THE ANIMAL CARE COMMITTEE

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

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The electronic forms seemed generally appropriate to the panel. The one suggestion that was made was to allow protocol authors the possibility of amending a protocol at the time of an annual renewal. Annual renewals are an ideal opportunity to reflect on outcomes of and adjustments to protocols. Protocol authors should be encouraged to carefully consider the results of the previous year in planning for the work of the year to come, and to make any amendments that will improve animal care and use in their renewals (see Serious recommendation no. 1e).

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

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Protocol review is carried out thoroughly and generally well. However, the panel noted that the questions that each ACC member raises are directed to the protocol author, whether or not these questions can be answered by other members of the ACC, and in some cases whether or not the matter has a direct impact on animal health or welfare. It would be preferable to use ACC meetings to consolidate the questions put to the protocol author to include only those questions that the ACC cannot answer itself, and that have a direct impact on animal health or welfare. This will help demonstrate to protocol authors that the ACC takes very seriously the time and effort that authors invest in completing their protocols and answering ACC questions, and should help improve researcher – ACC communication and collaborative work (see Serious recommendation no. 1e). Major and minor amendments are to be more formally defined in UBC ACC policy, which will be helpful. The panel added that the submission and approval of amendments should be facilitated to the greatest extent possible to encourage researchers to signal all changes and enhance effective communication and oversight (see Serious recommendation no. 1e). As indicated in the ACC Terms of Reference section, the process for any (exceptional) interim approvals should be defined.

Protocol files

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Information related to each protocol is very well managed electronically.

Pilot studies

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Pilot studies are well used and overseen for new models.

Collaborations

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The collaborations with Fisheries and Oceans Canada and Agriculture and Agri-Food Canada are well covered. The panel encouraged the ACC to continue to ensure that collaborations with other groups are well covered by ACCs that are CCAC-certified, or by an equivalent mechanism.

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5. ANIMAL ACQUISITION AND TRACKING

☐ Meets CCAC Standards ☐ Generally meets CCAC Standards ☒ Does not meet CCAC Standards	At the time of the visit, most of the animal facilities had their own facility-unique way of tracking animal numbers. In the case of the Centre for [redacted] the ordering and tracking of animals is directly related to ACC-approved numbers of animals per protocol in the RISe system, which is appreciated. However, this is not the case in the other facilities, and in the case of rodent breeding colonies, for example, the numbers of animals produced and used were often only being reported at the end of the year by the research team. Some facilities were not comparing the numbers of animals being requested by researchers with the numbers approved by the ACC. The panel therefore recommended that this be addressed expeditiously to ensure that numbers of animals acquired or bred do not exceed those approved by the ACC (see Serious recommendation no. 1f).

6. ANNUAL ANIMAL USE DATA

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Animal use data is provided annually to the CCAC, in a timely manner.

7. RECORDS OF ANIMAL CARE AND USE

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	A wide variety of methods were being used to record animal health and well-being, environmental conditions, and animal care and use procedures. During the site visits of the various facilities, the panel noted: • the variety of records used • some frustration on the part of certain research teams in being asked to use a given form that may not be well adapted to their type of work • some frustration of the veterinary and animal care staff in trying to obtain relevant information about animal-based procedures being conducted and endpoint monitoring • some frustration from both research teams and veterinary/animal care staff in agreeing on how to monitor and record clinical signs and conditions, at what frequency to monitor and report, and who to include in reports on animals – there was extensive e-mailing about concerns, but apparently less direct, effective communication to address them

	The ACC had developed a requirement (Policy 17) for monitoring records for all protocols of categories of invasiveness C or above. While it is of course essential to monitor animals, the frequency of this monitoring, the records kept and the reporting of animal health and welfare issues should be tailored to the type of work, the possible pain or distress involved and the most effective ways of making important information readily accessible without overburdening either research or animal care teams. The panel therefore recommended that there be continued work by the research teams, veterinary and animal care staff and ACC to adjust monitoring records/tools to be clear, user-friendly and well adapted to each type of animal work, to agree on monitoring frequency and reporting, and to consistently and appropriately use agreed upon records for invasive uses of animals, in order to clearly communicate information between the research and animal care teams (see Serious recommendation no. 1b)i).

8. POST-APPROVAL MONITORING

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	UBC had defined post-approval monitoring as consisting of four main components: • the Continuing Review Program, staffed with a Continuing Review Manager (a veterinarian who was newly hired at the time of the visit) and a Continuing Review Coordinator (who has a life science research background) • routine clinical veterinary visits • ACC requested viewings • ACC site visits The panel appreciated the work and resources invested in post-approval monitoring, and in particular the excellent work of the Continuing Review Coordinator (see Commendation no. 4) in providing well adapted support and assistance, as well as tailored training where needed, to the research teams. Post-approval monitoring typically works best when it keeps a healthy focus on helping research teams carry out their work appropriately and successfully. It will be important to ensure that the Continuing Review staff members have sufficient time to cover a reasonable proportion of the more invasive of the approximately 850 protocols approved on an annual basis. At the time of the visit, the Continuing Review Manager was not a full time position. The panel encouraged UBC to give this situation further thought, as the Continuing Review personnel have proven to be well appreciated members of the program, who contribute extensively to good communication, and who are in an excellent position to promote, in particular, the sharing of good practices and use of appropriate SOPs (see Serious recommendation no. 1, and more specifically no. 1c). The panel also noted that, while information from veterinary visits and other animal care records can be useful for post-approval monitoring, veterinary visits and animal care support should primarily be a service to animals and to

	users. Information provided by animal users in protocol renewals, progress reports and animal use records can also be helpful in post-approval monitoring.

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

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards Staff and building names have been redacted for privacy	The University Veterinarian, Associate University Veterinarian and the two clinical veterinarians (at the time of the visit) all work hard to provide complete veterinary services, and have the authority to do so, under the Vice President, Research and International and Associate Vice President, Research and International. The veterinarians are challenged given the: • numbers and different types of animals, highly varied animal-based work and the various facilities in different locations • changes to the program as described in the first part of this report Further thought was being given by the senior administration as to how to ensure that there is sufficient veterinary coverage for all parts of the program, in successful combination with other animal care measures. Shortly after the visit, the [redacted] Research Centre posted a position for a new veterinarian to assist research teams. The panel indicated that UBC will need to ensure that there are sufficient numbers and types of veterinarians to cover all types of animal work in all facilities and in the field, in combination with other personnel members who can be responsible for various parts of animal care, including animal user training. There will in particular need to be sufficient numbers of veterinarians to cover clinical work, visits to facilities, assistance to researchers and work with the ACC. The panel noted that clinical veterinary visits were being conducted in a somewhat rigid way, through formal, monthly visits with detailed reports. This way of operating also results in many e-mail exchanges about animal health between visits, which makes the system more burdensome. From many discussions with veterinary, research and animal care members of the program, this did not seem to be an optimal way of functioning and of using veterinary time, whether for the animals, the users or the veterinarians, facility managers and animal care staff. The panel therefore recommended that the schedule and nature of veterinary visits to facilities be adapted to the animal-based work in each facility, with an emphasis on services and support to animals and users (see Serious recommendation no. 1a).

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

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Overall, the panel appreciated the hard work and commitment to animal welfare invested by the facility managers and animal care staff. The panel also emphasized the key role that should be played by facility managers and animal care staff in disseminating good practices, following up on concerns and ensuring ongoing assistance to and training of animal users (see Serious recommendation no. 1d).

11. CONTINUING EDUCATION AND TRAINING

Continuing education for animal health professionals

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Some continuing education opportunities were being provided to veterinarians, facility managers and animal care staff, but the budgets assigned to this were decreasing. The panel encouraged UBC to pursue these important activities (see Regular recommendation no. 5).

Training program for animal users

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The animal user training program is generally appropriate, but the panel encouraged UBC to involve the various facility managers and animal care staff more actively in training and following-up on the training of animal users, as some were already successfully doing. Animal users should normally be provided with good, ongoing advice and assistance within their own facilities, and local training for communicating effectively with the ACC and providing complete protocols should be emphasized.

12. OCCUPATIONAL HEALTH AND SAFETY PROGRAM

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	There is a generally comprehensive occupational health and safety program in place, with joint visits with the ACC to each animal facility and excellent reports to each facility. The Director, Occupational and Research Health and Safety sits on the ACC, and excellent services are provided by the Director and members of Occupational and Research Health and Safety and the Workplace Health Services.

13. CRISIS MANAGEMENT PROGRAM

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	There is a campus wide crisis management plan that focuses mainly on human health and safety, and each animal facility manager is responsible for crisis management within that facility. The panel encouraged UBC to ensure that each facility specific crisis management plan meets UBC and CCAC standards.

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MAIN CAMPUS

SITE VISIT: CENTRE FOR [redacted]

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Good care, housing and environmental enrichment are provided to the animals by the staff in the Centre for [redacted] (see Commendation no. 4).

COMMUNICATION (AMONG VETERINARIANS, FACILITY MANAGER/ANIMAL CARE STAFF AND ANIMAL USERS)

☐ Meets CCAC Standards ☐ Generally meets CCAC Standards ☒ Does not meet CCAC Standards	The panel noted a number of difficulties related to communication (see Serious recommendation no. 1): • **between animal users and veterinary/facility management/animal care staff:** The panel visited a number of animal rooms, reviewed records and appreciated being able to discuss ongoing work with several research teams and the veterinary and animal care staff. There had been difficulties related to record keeping and other forms of communication, with some research teams finding certain forms and ways of reporting burdensome and excessive, and the veterinary and animal care staff receiving too little information, in some cases, to easily understand some animals' conditions. The discussions held between the researchers, veterinarian and panel at the time of the visit were positive and constructive. The panel encouraged everyone to pursue these efforts to adjust monitoring records/tools to be clear, user-friendly and well adapted to each type of animal work, to agree on monitoring frequency and reporting, and to consistently and appropriately use agreed upon records for invasive uses of animals, in order to clearly communicate information between the research and animal care teams (see Serious recommendation no. 1b)i) • **among animal users**: the [redacted] has considerable barriers that protect the health of immunocompromised or other particularly vulnerable or valuable strains of animals. However, there are a number of users whose work is best done under less restrictive conditions, including behavioural scientists. At the time of the visit, plans were being made to accommodate the behavioural work in a separate area of [redacted], but a committee of [redacted] scientists that controlled biosecurity and entry requirements was apparently reluctant to lower biosecurity requirements for fear of cross-contamination of their strains. However, as discussed during the assessment, there is enough space in [redacted] to organize the facility into separate areas with separate barriers, health statuses and biosecurity requirements, while

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	maintaining appropriate overall operations. The panel encouraged the senior administrators, veterinarians, scientists, facility manager and ACC to proceed with plans to organize the [redacted] space to maximize its usefulness for the various groups of users, including some psychology researchers whose departmental facility is to be closed (see Regular recommendation no. 2). Given that it is a shared resource, entry to the [redacted], use of space and biosecurity requirements within it should be determined by university authorities working with scientists, veterinarians, facility management and the ACC (see Serious recommendation no. 1b)ii). The In Vivo Research Facilitation Committee may be helpful to this end.

DESIGN AND MAINTENANCE OF THE FACILITY

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	There are some design problems in the [redacted] facilities, particularly in terms of their flexible use. However, there have been considerable investments made in maintaining the facilities in good repair, and in planning for better organization of the space to meet the needs of the various users and to contain costs. The panel encouraged UBC to pursue the reorganization of the [redacted] facilities to meet the needs of users, while maintaining appropriate standards for animals and for biosecurity.

ENVIRONMENTAL PARAMETERS (AIR/WATER QUALITY, TEMPERATURE/HUMIDITY/LIGHT/NOISE)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Environmental parameters seemed to be generally well controlled and monitored, with a review of the ventilation system underway.

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Biosecurity/biosafety and occupational health and safety measures appeared to be being appropriately applied, in general. However, biosecurity requirements are very restrictive, and this will need to be reviewed in the context of organizing separate areas that are appropriate for the various types of work.

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The facilities seemed generally well organized and clean.

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AREAS WHERE ANIMALS ARE HOUSED/USED NEAR THE [redacted] FACILITY

☐ Meets CCAC Standards ☐ Generally meets CCAC Standards ☒ Does not meet CCAC Standards	The panel visited rooms that were being used by research teams to house and use some aquatic and reptilian species. These rooms had not been carefully planned for, and did not meet UBC or CCAC standards in terms of husbandry, water quality monitoring, record keeping, maintenance of surfaces and management of the area. The panel recommended that the research teams work with the ACC and veterinary/animal care staff to either organize these rooms appropriately, or move the animals to more appropriate facilities. Measures for independent oversight of animal care and facility management will also need to be agreed upon (see Serious recommendation no. 1b)ii) and Regular recommendation no. 3).

Staff and building names have been redacted for privacy and security

DEPARTMENT [redacted]

The panel did not visit the Department [redacted]. UBC estimates that it would cost about two million dollars to retrofit this facility to meet UBC and CCAC standards. Given the availability of high quality animal space in new facilities, UBC had taken the decision to close the departmental animal facility once the research teams have all been relocated to new facilities. The ACC and veterinarians continue to visit the departmental facility, and the work by staff members to continue to provide good animal care and manage the facility appropriately is much appreciated (see Commendation no. 4).

The panel met with the [redacted] animal users to discuss the transition into new facilities. The difficulties encountered with respect to some of the research teams moving into the [redacted] are discussed in the [redacted] section of this report.

The researchers also discussed the fact that the costs to researchers in the new facilities may increase over 3-fold (and in some cases possibly over 6-fold) compared to the costs in the departmental facility. Some increase in cost is to be expected given the considerably increased quality of the facilities, but the panel encouraged the senior administrators, researchers and facility management to work together to find ways of making the transition as reasonable and successful as possible.

Staff and building names have been redacted for privacy and security

FACILITY [redacted]

The panel did not visit the [redacted] containment level 3 facility, but appreciated being able to meet with the Scientific Director and several research and animal care team members who provided detailed information about and photographs of the facility, answered the panel's questions, explained ongoing work and reported no concerns that had not already been effectively addressed. The panel appreciated the effective communication and hard work being invested, in particular in organizing the facility well and providing good standards of animal care.

Staff and building names have been redacted for privacy and security

SITE VISIT: [redacted] **RESEARCH CENTRE** [redacted]

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Animals were being generally well cared for by a dedicated and able manager and staff, working well with the research teams (see Commendation no. 4). However, this rodent facility is very busy and the animals are kept in crowded conditions, with minimal floor space within the ageing cages, and minimal space between cage racks in the rooms (see Regular recommendation no. 7a).

COMMUNICATION (AMONG VETERINARIANS, FACILITY MANAGER/ANIMAL CARE STAFF AND ANIMAL USERS)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The written and verbal communication between the research teams, manager, animal care staff and veterinarian seemed good, although there had been concerns with respect to the precise nature of monitoring sheets and other monitoring/reporting tools. The panel recommended that the research teams and veterinary/animal care staff continue to work together and with the ACC to find the most appropriate ways of monitoring and reporting on animals (see Serious recommendation no. 1b)i).

DESIGN AND MAINTENANCE OF THE FACILITY

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Efforts have been made to keep this facility in reasonably good repair, following renovations in 2004. However, its design is limited and limiting (2500 square feet with 3 housing rooms and an external quarantine room and separate biobubble for additional housing). The facility was very small for the volume of work being undertaken at the time of the visit. Several surfaces were damaged; it was difficult to schedule repairs and refinishing given that there is no swing space. The panel therefore recommended that measures be taken to ensure that the facility is maintained in good condition to meet UBC and CCAC standards, in particular for surfaces and caging, and is only used for the work that it can reasonably accommodate, with sufficient space for animals in appropriate caging, and sufficient space for staff to work in (see Regular recommendation no. 7a).

ENVIRONMENTAL PARAMETERS (AIR/WATER QUALITY, TEMPERATURE/HUMIDITY/LIGHT/NOISE)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Air quality should be checked since a mouse smell was quite noticeable at the time of the visit. Temperature and relative humidity are monitored externally and records were not being kept. The panel recommended that this be done, with internal checks as well to ensure that the parameters are appropriate (see Regular recommendation no. 7b).

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Air quality should also be checked as part of possible occupational health and safety concerns.

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The manager and animal care staff members are to be commended for their hard work to care for the animals and manage the facility well, despite the facility's limitations.

Staff and building names have been redacted for privacy and security

SITE VISIT: [redacted] **RESEARCH FACILITY** [redacted]

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	The animals were being well cared for by the [redacted] Research Facility Curator, working closely with the research teams. However, it will be important to ensure that complete veterinary services and an animal health monitoring program are in place in this new facility (see Regular recommendation no. 8).

COMMUNICATION AMONG VETERINARIAN(S), FACILITY MANAGER/ANIMAL CARE STAFF AND ANIMAL USERS

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	Good communication has been a large part of planning for and building a good new facility (see Commendation no. 4).

DESIGN AND MAINTENANCE OF THE FACILITY

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	The panel appreciated this new aquatic facility (see Commendation no. 2). At the time of the visit, the facility was partially commissioned. A few older rooms were still being used, which will be decommissioned once the new facility is completed. The panel recommended that the CCAC be provided with confirmation that the older rooms are no longer being used for animal work, and that commissioning of the new facility has been completed, with all necessary elements including (see Regular recommendation no. 8): • contingency plans • water cooling capacity • removal or sealing of any porous surfaces • completion of standard operating procedures for animal care and facility management

ENVIRONMENTAL PARAMETERS (air/water quality, temperature/humidity/light/ noise)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	Control of these parameters is to be completed with the full commissioning of the facility.

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☒ Meets CCAC Standards	
☐ Generally meets CCAC Standards	
☐ Does not meets CCAC Standards	

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☒ Meets CCAC Standards	
☐ Generally meets CCAC Standards	
☐ Does not meets CCAC Standards	

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SITE VISIT: [redacted] **FACILITY**

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	At the time of the visit, no animals were being housed yet in this new facility. However, the panel appreciated that good equipment is to be used, and that complete SOPs were in the process of being developed by the Senior Manager, animal care staff and veterinarians.

COMMUNICATION AMONG VETERINARIAN(S), FACILITY MANAGER/ANIMAL CARE STAFF AND ANIMAL USERS

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	Good communication has been a large part of planning for and building an excellent new facility. The Associate University Veterinarian and Senior Manager have played lead roles in this work (see Commendations nos. 2 and 4).

DESIGN AND MAINTENANCE OF THE FACILITY

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	The panel appreciated this new, state of the art, flexible rodent facility (see Commendation no. 2). At the time of the visit, the facility was partially commissioned. The panel recommended that the CCAC be provided with confirmation that commissioning of the new facility has been completed, with all necessary elements including (see Regular recommendation no. 9): • contingency plans • completion of painting • completion of standard operating procedures for animal care and facility management

ENVIRONMENTAL PARAMETERS (AIR/WATER QUALITY, TEMPERATURE/HUMIDITY/LIGHT/NOISE)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	

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SITE VISIT: [redacted] **CENTRE**

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	Graduate students care for the salmon, and the Senior Technician manages this small facility. There have been improvements in fish, water quality and facility system monitoring, but independent animal health and welfare oversight will continue to be important for this facility (see Regular recommendation no. 3).

COMMUNICATION AMONG VETERINARIAN(S), FACILITY MANAGER/ANIMAL CARE STAFF AND ANIMAL USERS

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	There have been improvements in record keeping. The panel encouraged the Senior Technician and students to remain in contact with the veterinarian for any concerns or unusual observations, and not to wait for any serious problems to occur, with ongoing communications on best practices, as well as application of endpoints and euthanasia methods (see Regular recommendation no. 10a).

DESIGN AND MAINTENANCE OF THE FACILITY

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	This is an older laboratory with wooden surfaces. These surfaces are kept sealed, but ongoing maintenance will be needed to ensure that this laboratory and its equipment are kept in good condition. It would be preferable to carry out this work in a purpose-built aquatic facility (see Regular recommendation no. 10b).

ENVIRONMENTAL PARAMETERS (AIR/WATER QUALITY, TEMPERATURE/HUMIDITY/LIGHT/NOISE)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	There are no alarm systems to identify problems related to critical water parameters (see Regular recommendation no. 10b).

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	The wooden surfaces are not optimal for biosecurity and biosafety.

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☒ Meets CCAC Standards	The facility was generally well organized and clean.
☐ Generally meets CCAC Standards	
☐ Does not meets CCAC Standards	

UBC FISH HOLDING/EXPERIMENTAL AREA – [redacted] FACILITY

The panel did not visit this facility, but received written information on it. The same UBC research team works in the [redacted] Centre and [redacted] facilities. As is the case for the [redacted] Centre laboratory, the research team should remain in contact with the veterinarian(s) for any concerns or unusual observations, and with respect to best practices for fish procedures, as well as application of endpoints and euthanasia methods (see Regular recommendation no. 10a). The [redacted] facilities are overseen by the [redacted] Animal Care Committee.

Staff and building names have been redacted for privacy and security

Staff and building names have been redacted for privacy and security

SOUTH CAMPUS

SITE VISIT: CENTRE FOR [redacted]

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Animal care is very good in this remarkable new facility (see Commendation no. 2), with an excellent manager and staff (see Commendation no. 4) and exceptional housing conditions for each species, including outdoor/indoor access in the majority of animal housing rooms.

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

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	There is very good verbal and written communication, including good records, and good communication was a large part of planning for and building this well adapted new facility. The University Veterinarian played a lead role in this work (see Commendation nos. 2 and 4).

DESIGN AND MAINTENANCE OF THE FACILITY

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	This is a new, state of the art, flexible animal facility for the Department of [redacted] and other users. One large laboratory will also be used to provide training for animal users throughout UBC. An innovative biological waste disposal system is in place, and there is separate treatment of infectious and non-infectious waste.

ENVIRONMENTAL PARAMETERS (air/water quality, temperature/humidity/light/noise)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Parameters were generally appropriate and were being recorded. The air handling system was noisier than it should have been, and this was being worked on with building operations and the contractor.

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	The facility is very well organized and managed.

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SITE VISIT: [redacted]

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	Excellent care is provided by the Manager and staff.

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

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	There is excellent communication and record-keeping.

DESIGN AND MAINTENANCE OF THE FACILITY

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	This is a temporary facility that serves its purpose well. The only difficulty has been in the floor material which has not resisted as well as the ceilings and walls. This was being addressed.

ENVIRONMENTAL PARAMETERS (air/water quality, temperature/humidity/light/noise)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	This is a very well organized facility.

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AFFILIATED FACILITIES

SITE VISIT: CENTER FOR [redacted]

On the morning of the scheduled panel site visit, a flood occurred in this facility. The CCAC visit was therefore rescheduled as a special visit that was undertaken on the morning of June 27, 2013.

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	The animals were being well cared for by the animal care staff members and generally well housed, under the able leadership of the Facility Manager and Assistant Manager. Some mice were being housed in "duplex" cages, which provide less housing space than normal cages. While these were generally being used to hold stud males that must be housed singly, in some cases more than one mouse was being housed. It will be important to continue to ensure that each mouse has at least the minimum required surface area in each cage (65 cm^2 for each mouse that weighs less than 20 g and 100 cm^2 for those that weigh more than 20 g, see Regular recommendation no. 11).

COMMUNICATION AMONG VETERINARIAN(S), FACILITY MANAGER/ANIMAL CARE STAFF AND ANIMAL USERS

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	While communication and record keeping seemed generally good, and had in fact improved overall, endpoints for protocols were not always sufficiently precise, leading to some uncertainty as the condition of some animals used in invasive protocols deteriorated. This will need to be addressed to ensure that endpoints are precisely defined at the time of protocol approval, with practical tools such as scoring sheets approved at the same time to be able to more easily follow each animal's condition and apply agreed upon endpoints (see Serious recommendation no. 1b)i).

DESIGN AND MAINTENANCE OF THE FACILITY

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	This facility, which was built in 1988 and added on to in 2005, has been generally well maintained. However, efforts will need to continue to be made to ensure that pipes are in good condition to avoid further water damage, and that all surfaces are in good repair and easy to clean. One housing room includes a tiled surface on the wall that will need to be sealed or replaced. The cage washing area (shared with [redacted] is showing signs of deterioration, particularly on the ceilings and floors (see Regular recommendation no. 11).

ENVIRONMENTAL PARAMETERS (AIR/WATER QUALITY, TEMPERATURE/HUMIDITY/LIGHT/NOISE)

☒ Meets CCAC Standards	
☐ Generally meets CCAC Standards	
☐ Does not meets CCAC Standards	

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☒ Meets CCAC Standards	
☐ Generally meets CCAC Standards	
☐ Does not meets CCAC Standards	

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☒ Meets CCAC Standards	The facility is well organized and kept clean despite being intensively used.
☐ Generally meets CCAC Standards	
☐ Does not meets CCAC Standards	

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SITE VISIT: [redacted] **RESEARCH INSTITUTE** [redacted]

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	The animals were being well cared for by the animal care staff members and generally well housed. Larger cages will be needed to socially house larger rats (see Regular recommendation no. 11).

COMMUNICATION AMONG VETERINARIAN(S), FACILITY MANAGER/ANIMAL CARE STAFF AND ANIMAL USERS

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	While the communication is generally good, each research team has a different format of data sheet to describe the animals' condition, and not all are consistently complete. This makes it more difficult for all involved, including the veterinarian and animal care staff, to quickly find information. This will need to be addressed to find a way of keeping records that provides complete information on animal care and procedures and meets everyone's needs. In addition, information on endpoints and procedures was being kept in the technicians' office outside of the facility, this information should be more readily available in animal rooms (see Serious recommendation no. 1b)i).

DESIGN AND MAINTENANCE OF THE FACILITY

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	This facility, which was built in 1985, has been generally well maintained. However, efforts will need to continue to be made to ensure that all surfaces are in good repair and easy to clean. Floor tiles should be replaced in the rat area and the cage washing area (shared with [redacted]) is showing signs of deterioration (see Regular recommendation no. 11).

ENVIRONMENTAL PARAMETERS (AIR/WATER QUALITY, TEMPERATURE/HUMIDITY/LIGHT/NOISE)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meets CCAC Standards	

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☒ Meets CCAC Standards	
☐ Generally meets CCAC Standards	
☐ Does not meets CCAC Standards	

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SITE VISIT: [redacted] **RESEARCH CENTRE**

At the time of the March 2013 CCAC visit, the [redacted] of the [redacted] was providing animal housing and some procedural space for approximately 56 animal users, about 20 of whom are neuroscientists, with laboratories located primarily in the [redacted] Research Centre and [redacted] The panel visited all of these areas and appreciated that research teams and animal care staff were available to provide information and answer questions in all areas.

As noted during previous CCAC visits, and summarized during the June 2012 CCAC special visit to the [redacted], the [redacted] is an older animal facility that does not meet UBC and CCAC guidelines. It has a poor design, including in the cage wash area (no separation between clean and dirty sides) and loading dock/animal reception area. Work traffic patterns from clean to dirty areas cannot be systematically maintained. There are ongoing problems in maintaining appropriate environmental conditions: the HVAC system would need to be upgraded, relative humidity is often too low, both of which are particularly problematic given that animals are housed in conventional (non-ventilated) caging. Anesthetic gases are scavenged through carbon filters rather than evacuated. There are also a number of problems with damaged and porous surfaces, and some flooring contains asbestos. The [redacted] is scheduled to be closed, as soon as all users can be relocated.

The non-human primates housed in the [redacted] at the time of the visit will be moved to the Centre for [redacted], which has excellent facilities, but which is located on the South Campus. For the time being, imaging of these animals was to continue to be done within the [redacted] which poses concerns related to transportation. The panel felt that this situation is problematic from both a human and an animal health perspective. As a temporary solution until a more appropriate one can be found, the panel indicated that the primate housing area in the [redacted] could be used for short term holding when the animals are being scanned, to avoid transporting anesthetized primates over longer distances (see Regular recommendation no. 1a).

The panel was informed that rodent users other than neuroscientists will have their animals relocated to either the Centre for [redacted] or the [redacted] Facility (when it opens). Because the [redacted] Research Centre includes extensive imaging, microscopy and behavioural instrumentation that cannot be moved, a separate housing solution has been identified for animal using neuroscientists: this involves the new Centre for [redacted], which was being built at the time of the visit. UBC has secured funding to build animal housing space and some procedural space in the basement [redacted] Facility. This will be a 5,400 square foot self-contained, rodent only facility. It will be operated by the [redacted] Research Institute.

The panel understood that there will be animal movement between the [redacted] Facility and the [redacted] Research Centre to access specialized equipment. This is not ideal from an animal welfare, scientific and human health perspective, but measures were to be taken to minimize concerns associated with transportation. The facilities of the [redacted] Research Centre are recent and include space dedicated to animal use which seemed generally appropriate and well organized. However, there is no space that is entirely appropriate for survival surgeries: such

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surgeries should normally be conducted in purpose-built surgery suites within animal facilities. Where there is a strong rationale, approved by the ACC to conduct survival surgeries in a laboratory, the surgeries should be conducted in an area that enables the use of aseptic surgical technique, under a stream of sterile air (see Regular recommendation no. 4). Animal-based work in the [redacted] Research Centre should continue to be independently overseen, and measures to isolate animal work from other activities and limit the spread of allergens should continue to be taken (see Regular recommendations nos. 1b and 3).

The panel also visited the small (380 square feet), satellite animal housing facility and the laboratories in which animals are used in the [redacted]. The [redacted] housing facility is not independent, it does not have its own service areas and is a satellite of the [redacted] The manager of the [redacted] facility is a Research Associate, rather than an independent animal health professional. The panel understood that the fate of the [redacted] facilities is linked to the fate of the [redacted]ich will be closing. The panel did not receive complete information on the environmental parameters, maintenance and management of the [redacted] facilities, but during the visit noted that the ventilation seemed weak and the facilities are ageing. There were a variety of activities in the laboratories, and animal-based work was not systematically isolated from other work. Some of the laboratories were quite cluttered, and could not easily be kept clean, with some ageing and porous surfaces. There was no space that is entirely appropriate for survival surgeries. Some issues had been noted in clinical veterinary reports, including in some cases a lack of clear information on monitoring sheets following invasive procedures (see Serious recommendation no. 1b)i).

The panel strongly encouraged UBC to consolidate animal housing and use, and in particular survival surgeries, to the greatest extent possible within the new [redacted] Facility (see Serious recommendation no. 1b)ii) and Regular recommendation no. 1a). The panel also recommended 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 (see Regular recommendation no. 1b).

More generally, the panel recommended that the plans for the new [redacted] Facility be carefully worked on with the animal users of the [redacted] Research Centre, as well as the veterinary and animal care staff to maximize the use of space and consolidate animal housing and procedural space within the new facility or other appropriate facilities (see Serious recommendation no. 1b)ii) and Regular recommendation no. 1a), to:

- ensure that invasive procedures, in particular, are undertaken in appropriate conditions. Survival surgeries should normally be conducted in purpose-built surgery suites within animal facilities. Where there is a strong rationale, approved by the ACC to conduct survival surgeries in a laboratory, the surgeries should be conducted in an area that enables the use of aseptic surgical technique, under a stream of sterile air (see Regular recommendation no. 4 and the *CCAC guidelines on: laboratory animal facilities*, 2003)

- ensure that there is independent oversight of animal-based work in all cases, with a focus on safeguarding animal health and welfare during and after more invasive procedures

- ensure that any laboratories used for animal-based work are in appropriate condition and well organized, with surfaces that facilitate cleaning and animal work kept separate from other activities (see the *CCAC guidelines on: laboratory animal facilities*, 2003)

- minimize the movement of animals through public, and in particular through patient areas, both for human health and to avoid stress for the animals and additional variables affecting scientific results (see the *CCAC guidelines on: laboratory animal facilities*, 2003)

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SITE VISIT: [redacted] RESEARCH CENTRE

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Animals were being generally well cared for and housed, but given the considerable amount of invasive work carried out in this facility, greater veterinary presence would be important, as was highlighted by the ACC for swine work, and as had been previously noted in a more general sense by the CCAC. Shortly after the visit, the Centre created a new veterinary position and advertised for candidates. It will be important for there to be good communication between this new veterinarian and the UBC veterinarians and ACC to ensure that: • animal use protocols can be well prepared and carried out • animals can be well followed up on seven days a week • other work related to animal health and welfare (animal transfers, animal user training, etc.) can be well coordinated

COMMUNICATION (AMONG VETERINARIANS, FACILITY MANAGER/ANIMAL CARE STAFF AND ANIMAL USERS)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	As was noted during the November 2012 ACC site visit, there was still some work being done on records and monitoring sheets, which the panel encouraged.

DESIGN AND MAINTENANCE OF THE FACILITY

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	This facility is over 20 years old and is showing signs of deterioration. There have been problems with leaking pipes and damaged surfaces, and the panel noted in the barrier facility that some surfaces (door frames) will need refinishing. The panel recommended that the maintenance program be improved (see Regular recommendation no. 12b).

ENVIRONMENTAL PARAMETERS (AIR/WATER QUALITY, TEMPERATURE/HUMIDITY/LIGHT/NOISE)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	A request for checking the ventilation system had only been made shortly before the visit. The results showed considerable variation in air exchanges among the various rooms: numbers and types of animals per room should continue to be adjusted to ensure that each group of animals is provided with good air quality. The ventilation system should be regularly checked for its air exchange capacity and relative air pressures, and be calibrated (see Regular recommendation no. 12a). In addition, problems had been experienced with relative humidity levels and a solution was being sought.

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Improved maintenance and housekeeping will improve biosecurity.

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Housekeeping should be improved in this facility, in particular for the surgery suites, which are extensively used. Some surgeries had been completed late in the evening of the day before the panel's visit, and the suites had still not been cleaned by the time the panel toured the facility the next afternoon (see Regular recommendation no. 12c).

Staff and building names have been redacted for privacy and security

SITE VISIT: [redacted]

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Good care was being provided to the rodents housed in this facility, with the animal care technician reporting to the General Manager, [redacted] Research Institute Facilities and to the Managing Director of [redacted]. The Managing Director of [redacted] provides very active support and oversight of the facility's operations. One room in the facility was being used to temporarily house zebrafish and medaka for the [redacted] Centre, until the new [redacted] facility is completed. One room adjacent to the facility was being used temporarily by researchers from the [redacted] Centre to house *Xenopus laevis* frogs. The frogs were overcrowded within tanks, and the small room itself was overcrowded with tanks, which prevented ready observation of the animals, as noted by the ACC in its December 2012 site visit report. The research team had begun to address this issue, which will need to be resolved and avoided in future. There did not appear to be clear endpoints for these animals; these will need to be defined and applied (see Regular recommendation no. 3).

COMMUNICATION (AMONG VETERINARIANS, FACILITY MANAGER/ANIMAL CARE STAFF AND ANIMAL USERS)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The communication appeared open and effective between all persons involved, with a good system to signal animals that need extra monitoring and care, and good records more generally.

DESIGN AND MAINTENANCE OF THE FACILITY

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The facility is only a few years old and is generally well designed and maintained. The panel encouraged the group to ensure that regular maintenance is carried out.

ENVIRONMENTAL PARAMETERS (AIR/WATER QUALITY, TEMPERATURE/HUMIDITY/LIGHT/NOISE)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The environmental parameters seemed appropriate for the rodents and fish, but will need to be checked for the frogs (see Regular recommendation no. 3).

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Biosecurity/biosafety and occupational health and safety measures seemed appropriate, although it was noted during the visit that some users were not wearing lab coats.

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	With the exception of the frog room, the facility was clean and well organized.

[redacted] **CENTRE**

Staff and building names have been redacted for privacy and security

The panel did not visit this new aquatic facility that was under construction at the time of the visit, but appreciated being able to meet with representatives from the Centre to discuss the facility plans and future work. The panel appreciated the work done to plan for, and the investments made to build and equip the new facility. While the panel members understood that this will remain a small facility where most of the animal-based work will be done by research team members, they emphasized the need for independent oversight of animal health and welfare, as in all cases (see Regular recommendation no. 3).

Staff and building names have been redacted for privacy and security

SITE VISIT: [redacted]

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Animals are well cared for under the able and active leadership of the Facility Manager and Assistant Facility Manager/Training Coordinator.

COMMUNICATION (among veterinarians, facility manager/animal care staff and animal users)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The communication seemed excellent, the Facility Manager, Assistant Facility Manager/Training Coordinator and the other staff members all work closely with animal users to ensure that animals are well cared for and appropriately used. Work continues, with computerized and handwritten records, to ensure that animal care and use records are complete and easily available to the animal care staff and research teams.

DESIGN AND MAINTENANCE OF THE FACILITY

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The facility is well designed and maintained. A training area has been added and several other improvements made.

ENVIRONMENTAL PARAMETERS (air/water quality, temperature/humidity/light/noise)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Environmental parameters are generally appropriate; however, relative humidity cannot be controlled. It is monitored and if it falls below the recommended range, floors are mopped to increase the humidity. The panel encouraged the institution to find more permanent solutions.

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	Biosecurity, biosafety and occupational health and safety measures are generally appropriate. However, the panel was informed that the ventilated caging is under positive air pressure relative to the room, and the rooms are under positive pressure relative to the corridor. This disseminates allergens; measures to better contain allergens should be considered.

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	This facility is exceptionally well organized and kept clean.

Staff and building names have been redacted for privacy and security

[redacted] RESEARCH CENTRE, [redacted]

The panel did not visit this facility but appreciated being able to meet with several representatives from the [redacted] Facility. Sound standards of animal care and use have been maintained in this facility as evidenced through ACC and veterinary site visit reports, previous CCAC visits and documentation from the facility. The representatives from the [redacted] Facility answered the panel's questions, explained ongoing work and reported no concerns that had not already been effectively addressed. The panel appreciated the hard work being invested, in particular in providing good animal care and ensuring good communication between animal care staff and research teams.

The panel encouraged the animal users and members of the [redacted] Facility to continue to work closely with the ACC, veterinarians and Occupational Research Safety to avoid/address any concerns, as was done for a few issues in 2012. With respect to longer term planning, the facility is very actively used, with limited space for storage or for additional activities, and it will be important to continue to avoid exceeding the facility's capacity.

OTHER UNITS

UBC OKANAGAN

The panel did not visit this campus, and was informed that the newly built rodent facility would not be opened for some time. A small trout research facility continues to operate, and is regularly visited by a local veterinarian, as well as by the ACC. The September 2012 ACC site visit report had listed some concerns that were to be addressed, and UBC Okanagan had responded that the necessary work had been done.

Staff and building names have been redacted for privacy and security

SITE VISIT: [redacted] CENTRE, AGASSIZ
(visited by a different CCAC panel on July 5, 2012)

ANIMAL CARE AND WELFARE (INCLUDING HOUSING AND ENVIRONMENTAL ENRICHMENT)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The panel was impressed by the excellent care provided to the animals.

COMMUNICATION (among veterinarians, facility manager/animal care staff and animal users)

☐ Meets CCAC Standards ☒ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	The communication is good, but the panel noted that there should be an ACC-approved animal use protocol that explains the need for, and the management of, the dairy herd, with justification of the numbers of animals held and produced. The protocol should refer to the SOPs for animal care and herd management (see Regular recommendation no. 13). SOPs were continuing to be developed.

DESIGN AND MAINTENANCE OF THE FACILITY

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	

ENVIRONMENTAL PARAMETERS (air/water quality, temperature/humidity/light/noise)

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	

BIOSECURITY/ BIOSAFETY/APPLICATION OF OCCUPATIONAL HEALTH AND SAFETY MEASURES

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	

ORGANIZATION OF THE FACILITY/HOUSEKEEPING

☒ Meets CCAC Standards ☐ Generally meets CCAC Standards ☐ Does not meet CCAC Standards	This facility is very well organized and kept clean.

Staff and building names have been redacted for privacy and security

SITE VISIT: UBC [redacted] UNIT AT THE VANCOUVER AQUARIUM

The panel did not visit the Vancouver Aquarium and Port Moody Open Water facilities of the UBC [redacted] Unit, but appreciated being able to meet with several representatives from the Unit. High standards of seal care and use have been maintained in these facilities as evidenced through veterinary and ACC reports, previous CCAC visits and detailed documentation from the Unit. The representatives from the [redacted] Unit answered the panel's questions, explained ongoing work and reported no concerns that had not already been effectively addressed. The panel appreciated the effective communication and hard work being invested, in particular in providing excellent animal care through the training/husbandry staff and excellent oversight of animal health and welfare through the veterinarian and Curator of Marine Mammals. Animal care and use records are comprehensive, well-structured and readily available.

The panel encouraged the ACC to ensure that site visits to both sites continue to be undertaken on a yearly basis.

For UBC's response to CCAC's Serious Recommendation follow this link: http://www.animaresearch.ubc.ca/CCAC-2013-UBC-response.html

SERIOUS RECOMMENDATIONS

Apply to significant or long-standing weaknesses in the animal care and use 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: **October 4, 2013**
Respond to: Ms. Jumoke Fasoyinu, Certification Officer (jfasoyinu@ccac.ca)

1. **That the efforts being made by UBC to work towards good communication and collaboration at all levels of the animal care and use program be strongly supported, with good integration of the knowledge and efforts of the researchers, the veterinarians, the animal care staff and the Animal Care Committee (ACC), good use of tools such as RISe, and more specifically with:**

   a) **sufficient veterinary resources for all parts of the program working within a sound overall structure, with the schedule and nature of veterinary visits to animal facilities being adapted to the animal-based work in each facility and being focused on services and support to animals and users**

   b) **continued work by the research teams, veterinary and animal care staff and ACC to:**

      i. **adjust monitoring records/tools to be clear, user-friendly and well adapted to each type of animal work, to agree on monitoring frequency and reporting, and to consistently and appropriately use agreed upon records for invasive uses of animals and endpoints, in order to clearly communicate information between the research and animal care teams**

      ii. **contribute to agreements to ensure the best use of each animal facility, to maximize the use of space and organize each facility to meet user needs and ensure sound standards of animal care and biosecurity**

   c) **emphasis on the sharing of good practices and the use of appropriate standard operating procedures (SOPs) throughout the system, with veterinary, animal care staff, research teams and the ACC collaborating to identify, review and apply appropriate SOPs**

   d) **emphasis on the role of animal health technicians as key personnel in the decentralized system, to facilitate follow up of any concerns with animals and ensure ongoing assistance to and training of animal users throughout the system**

   e) **the ACC considering further ways to make its processes more effective and efficient, in particular by defining major and minor amendments to protocols, by facilitating the submission and approval of amendments, and by consolidating comments on protocols to focus on those questions with a direct impact on animal welfare**

f) mechanisms to ensure that, whether animals are acquired, bred or captured, these numbers as well as the numbers of animals used are appropriately checked against ACC-approved numbers of animals in all cases and for all facilities, within the RISe system

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 Canadian Association of Laboratory Animal Medicine (CALAM) *Standards of Veterinary Care* (2007)
- The *CCAC guidelines on: choosing an appropriate endpoint in experiments using animals for research, teaching and testing* (1998)
- The *CCAC guidelines on: laboratory animal facilities – characteristics, design and development* (2003)
- The *CCAC guidelines on: procurement of animals used in science* (2008)

REGULAR RECOMMENDATIONS

Apply to weaknesses in the animal care and use 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: January 10, 2014
Respond to: Ms. Jumoke Fasoyinu, Certification Officer (jfasoyinu@ccac.ca)

Staff and building names have been redacted for privacy and security

1. That, with respect to animal use in the [redacted] Research Centre [redacted]:

a) the plans for the new [redacted] Facility be carefully worked on with the animal users of the [redacted], as well as the veterinary and animal care staff, to maximize use of the space and consolidate animal housing and procedural space within the new facility or other appropriate facilities. With respect to procedural space, that priority be given to consolidating survival surgeries within appropriate surgical spaces in the new facility

b) any animal-based work that is to continue to be undertaken in the laboratories of the [redacted] be undertaken in conditions that meet UBC and CCAC standards for animal holding and use, and facility maintenance and management, including independent oversight of animal health and welfare

c) until a more appropriate solution can be found, when non-human primates are to be transported for scanning from the South Campus to the [redacted] the primate quarters in the [redacted] be kept for short

term holding of these animals to minimize concerns related to their transportation

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

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2. **That the measures to be taken to accommodate the animal care and use activities of the [redacted] researchers in new facilities be provided to the CCAC.**

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 on: laboratory animal facilities – characteristics, design and development* (2003)

3. **That measures be taken to ensure that all alternate housing areas in which animals are being housed (including the alternate housing sites in the Centre for [redacted]) and laboratories in which animals are being used meet UBC and CCAC standards, including independent oversight of animal health and welfare, and that laboratories in which animals are used be part of the areas that the Animal Care Committee oversees in the *Animal Care Committee Terms of Reference*.**

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

4. **That survival surgeries be conducted in purpose-built surgery suites within animal facilities unless there is a strong rationale, approved by the Animal Care Committee, to conduct survival surgeries in a laboratory, in which case they should be conducted in an area that enables the use of aseptic surgical technique.**

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

5. That relevant continuing education opportunities continue to be provided to the veterinarians, facility managers and animal care staff.

Relevant policies and guidelines can be found in:

- The *CCAC policy statement for: senior administrators responsible for animal care and use programs* (2008)
- The Canadian Association of Laboratory Animal Medicine (CALAM) *Standards of Veterinary Care* (2007)

6. That the selection of reviewers for animal-based research projects requiring peer review be the responsibility of the Peer Review Subcommittee or of the Associate Vice President, Research & International. That reviews be sought in other quarters as needed for the peer reviews to be both expert and independent, and that they be based on complete information related to the research project. That this peer review process be defined in written policy.

Relevant policies and guidelines can be found in:

- Appendix II of the *CCAC policy statement for: senior administrators responsible for animal care and use programs* (2008)

Staff and building names have been redacted for privacy and security

7. That, with respect to the animal facility of the [redacted] Research Centre:

a) measures be taken to ensure that the facility is maintained in good condition to meet UBC and CCAC standards, in particular with respect to surfaces and caging, and is only used for the work that it can reasonably accommodate, with sufficient space for animals in appropriate caging, and sufficient space for staff members to carry out their work

b) air quality be checked, and records of temperature and relative humidity be kept, with internal checks as well to ensure that the parameters are appropriate

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 on: laboratory animal facilities – characteristics, design and development* (2003)
- Section H, Chapter II, Vol. 1 (2nd Edn., 1993) of the *CCAC Guide to the Care and Use of Experimental Animals*

Staff and building names have been redacted for privacy and security

8. That the CCAC be provided with confirmation that the older rooms of the [redacted] Research Facility are no longer being used and that commissioning of the new [redacted] facility has been completed, with all necessary elements including:

a) contingency plans
b) water cooling capacity
c) removal or sealing of any porous surfaces
d) completion of standard operating procedures for animal care and facility management

as well as complete veterinary services and an animal health monitoring program.

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 Canadian Association of Laboratory Animal Medicine (CALAM) *Standards of Veterinary Care* (2007)
- The *CCAC guidelines on: laboratory animal facilities – characteristics, design and development* (2003)
- The *CCAC guidelines on: the care and use of fish in research, teaching and testing* (2005)

9. That the CCAC be provided with confirmation that commissioning of the new [redacted] Facility has been completed, with all necessary elements including:

a) contingency plans
b) completion of painting
c) completion of standard operating procedures for animal care and facility management

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 on: laboratory animal facilities – characteristics, design and development* (2003)

Staff and building names have been redacted for privacy and security

10. That, with respect to the [redacted] Centre and [redacted] animal facilities:

a. the research team remain in contact with the veterinarian(s) for any concerns or unusual observations, with ongoing communications on best practices, as well as application of endpoints and euthanasia methods

b. relocation of the [redacted] Centre work to a purpose-built aquatic facility continue to be considered, and that if the laboratory is to continue to operate in its current location, the facility and its equipment be kept in good condition and alarms for critical water parameters be acquired

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 Canadian Association of Laboratory Animal Medicine (CALAM) *Standards of Veterinary Care* (2007)
- The *CCAC guidelines on: choosing an appropriate endpoint in experiments using animals for research, teaching and testing* (1998)
- The *CCAC guidelines on: laboratory animal facilities – characteristics, design and development* (2003)
- The *CCAC guidelines on: the care and use of fish in research, teaching and testing* (2005)

11. That, with respect to the animal facilities of the [redacted] Research Institute [redacted] and the Centre [redacted]:

a) larger cages be used to socially house larger rats

b) numbers of mice in mouse caging do not exceed CCAC guidance

c) regular maintenance be undertaken, in particular of the cage washing area, the floor in the rat area of the [redacted] and the pipes and tiled wall in the [redacted]

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 on: laboratory animal facilities – characteristics, design and development* (2003)
- Chapter VI, Vol. 1 (2nd Edn., 1993) of the *CCAC Guide to the Care and Use of Experimental Animals*

Staff and building names have been redacted for privacy and security

12. That, with respect to the [redacted] Research Centre animal facility:

a) the ventilation system be regularly checked and calibrated to ensure that the air exchange capacity and relative air pressures in each area are appropriate, with numbers and types of animals adjusted to air exchange capacities

b) regular maintenance be undertaken to ensure that all surfaces are in good condition and easy to clean and disinfect

c) housekeeping be improved, in particular to ensure that the surgery suites are thoroughly cleaned shortly after surgeries

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 on: laboratory animal facilities – characteristics, design and development* (2003)
- Chapters III, V and IX, Vol. 1 (2nd Edn., 1993) of the *CCAC Guide to the Care and Use of Experimental Animals*

13. That a protocol be written for the dairy herd, for approval by the Animal Care Committee.

Relevant policies and guidelines can be found in:

- The *CCAC policy statement on: terms of reference for animal care committees* (2006)

Staff and building names have been redacted for privacy and security

COMMENDATIONS

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

1. That the University of British Columbia be commended for its innovative and impressive work to openly and clearly explain its use and care of animals to the public.

2. That the University of British Columbia be commended for its extensive investments in state of the art new animal facilities, including:

a) the Centre for [redacted], which includes exceptional elements to protect and promote animal welfare

b) the [redacted] facilities and the [redacted] Facility, that replace considerably outdated facilities

and that those responsible for the planning, design, financing and completion of these facilities be commended for their hard and impressive work.

3. That the University of British Columbia be commended for proceeding promptly with planning for a new facility to accommodate the animal users of the [redacted] Research Centre facilities.

4. That all of the members of the University of British Columbia animal care and use program be commended for their many contributions and earnest commitment to high standards of animal care and use.