

Memorandum to:

From: Institutional Animal Care and Use Committee

Subject: Semi-Annual Report of the Program Review and Facility Inspection

Date: October 22, 2019

This report summarizes the results of the IACUC's most recent program review and facility inspection, as required by the PHS Policy on Humane Care and Use of Laboratory Animals ([Policy](#)), Section [IV.B.1.-3.](#), the *Guide for the Care and Use of Laboratory Animals* ([Guide](#)), and the Animal Welfare Act ([AWA](#)) regulations, as applicable.

Since the last review, the following changes have occurred in the institution's program for animal care and use (PHS Policy [IV.A.1.a.-i.](#)):

The IACUC is satisfied with the state of the Animal Care and Use Program since the last review. There are no ongoing animal welfare concerns at this time.

Since the last Program Review, the following changes to IACUC membership have occurred:

- as Associate Chair
- replaced as Alternate for
- , additional Alternates for (appointments start 12/1/19)

The following IACUC policies were reviewed by the IACUC. Any new or revised policies will be posted on the IACUC website after IO endorsement.

- Policy on Purchasing Animals at CSU (Combining *Policy on Purchasing Animals at CSU* and *Guidelines on the Acquisition of Livestock Used for Biomedical Research, Testing or Teaching*)
- Policy on Food and/or Fluid Regulation (revise)
- Protocol Review Process (revise)
- Performance of Repeat Procedures (revise)
- Guidelines on Pain Categories (revise)
- Policy on "Tail Biopsy" (inactive/close)

Facility/Resource Requests: The AV updated the IACUC during semi-annual program review (and as needed) with any changes to this list. Additional information regarding facility needs are outlined on page 4 of this document, under item *III. Deficiencies in the Institution's Animal Facility*.

The IACUC identified an urgent programmatic need with the Bridge training module, implemented by Talent Development. Currently, only CSU employees can access Bridge because the licensing agreement limits the number of personnel who can access this system. Many non-employee students are listed as personnel on IACUC protocols, yet they would not be able to access Bridge with the current licensing agreement. The IACUC online training module is currently housed in a separate home-grown module (from Research Services) and it needs to be moved into Bridge to provide an improved training experience for researchers. It has the capacity to house not only the IACUC online training module, but also all other research compliance training modules. Therefore, the IACUC recommends moving the IACUC online training module to Bridge as the first step in reducing administrative burden for our researchers by creating a centralized location for research compliance training modules.

As stated previously, the IACUC supports the infrastructure needs to enhance the animal facilities as a component of the Research and Scholarly Success Initiative. The priorities

identified enhance research on Main campus, Foothills campus and the South campus, with the following items still outstanding:

- Construction for the ECRC North Holding pens still have not been completed due to lack of funding.
- The flooring in an animal holding room in A/Z must be sealed to meet AAALAC accreditation expectations. The PI and graduate student were relocated into this space because facilities refused to turn the water back on in their previous location.

I. Description of the Nature and Extent of the Institution's Adherence to the PHS Policy, the *Guide*, and the AWA

Departures from the PHS Policy, the *Guide*, and the AWA.

Select A or B:

☐ A. There were no departures during this reporting period.

☒ B. The following departures have been reviewed and approved by the IACUC:

Nature and Extent of Institution's Adherence to PHS Policy and the *Guide*:

CSU OLAW Assurance was updated and submitted to OLAW for review. It was approved and is effective June 19, 2018 through June 30, 2022.

According to the IACUC's review of the program, the majority of the deviations from the provisions of *the Guide* and Animal Welfare Act Regulations (AWARs) are not departures because they are either protocol-specific deviations from specifically described exceptions outlined in *the Guide* and AWARs, they are scientifically justified deviations that are included in IACUC reviewed and approved protocols, or they are program-specific deviations which are according to locally established performance standards.

The IACUC-approved protocol deviations from the provisions of *the Guide* with *Guide*-specific exceptions to those provisions, or scientifically justified deviations in IACUC reviewed and approved protocols (for experimental reasons) are as follows:

- Medium-term feed restriction: removal of feed overnight, but for more than 12 hours, prior to anesthesia or euthanasia in mice (Genus *Mus*), rats (Genus *Rattus*), sheep
- Forced exercise on treadmills of animals
- Singly housing social animals
- Multiple major survival surgeries as integral parts of a single study.
- Temporary physical restraint of animals

The IACUC has approved a number of program-specific deviations which are based on established performance standards. These are included below and are reviewed annually during fall semiannual program review.

- Deviation to allow room level relative humidity (RH) of a minimum of 15-20% (studies have shown that cage level RH is generally 10% higher than room level).
- Deviation to allow cage top and wire bar lid sanitization frequency of once every 30-40 days (no adverse effects have been noted due to this schedule as observed in the morbidity and mortality reports).
- Deviation to allow 5 mice to be housed in Thoren cages measuring 69 square inches, as opposed to the recommendation of 15 square inches per mouse (no adverse effects have been noted due to this housing regimen as observed in the morbidity and mortality reports).
- Exemption for the housing conditions of prion infected mice in disposable caging. House up to 4 adult mice in the disposable caging which is 64 square inches per cage, which is less than what is outlined in the Guide. Bedding is changed every two weeks and disposable cage reused, for up to 12 weeks.

CSU received an exception from the USDA APHIS Animal Care Administrator on September 13, 2016 allowing us to house camels in pastures with natural barriers and fencing in lieu of the required double fencing.

The Occupational Health Program (OHP) Coordinator provided the IACUC with a summary of overall animal user medical surveillance compliance since the spring semiannual program

review. Additionally, RICRO IACUC staff confirm the following process during review/approval of IACUC protocols:

- all IACUC protocol personnel working with animals are checked for OHP enrollment. This is done for all new protocols, amendments, and continuing review submissions.
- As stated in the spring 2019 report, there is currently no good mechanism to validate the IACUC's process during protocol review against the OHP database, in a timely fashion. Any discrepancy in the EHS OHP database requires manual confirmation from OHP staff.

Overall, the IACUC agree that OHP for protocol personnel is adequate to meet the needs of the Animal Care and Use Program.

Nature and Extent of Institution's Adherence to AWA:

The last USDA unannounced annual inspection occurred December 10-12, 2018.

II. Deficiencies in the Institution's Animal Care and Use Program

Animal Care and Use Program Review Date(s): October 22, 2019

Select A or B:

☒ A. There were no deficiencies in the program during this reporting period.

☐ B. The following deficiencies have been identified:

Please see **Attachment 1: Semiannual Program Review Checklist—October 22, 2019**

The program review subcommittee evaluated the CSU Animal Care and Use Program (ACUP) against the attached Semiannual Program Review Checklist which is a slightly modified version of the OLAW example checklist. It found that the program was acceptable in all applicable areas.

III. Deficiencies in the Institution's Animal Facility

Animal Facility Inspection Date(s):

- June 27
- August 1, 5, 7, 8, 15, 20, 22, 26
- September 16, 19, 23, 24, 26
- October 14, 15, 16, 21, 24, 25, 30, 31

Select A or B:

☐ A. There were no deficiencies in the animal facility during this reporting period.

☒ B. The following deficiencies have been identified, all of which were Minor and for which corrections have been either made or scheduled:

Please see **Attachment 2: Semiannual Facility Inspection Report—Fall 2019**

The semiannual inspection of the animal facilities revealed no significant deficiencies. All of the deficiencies noted have either been corrected or have a correction plan with reasonable date for correction included in the Semiannual Facility Inspection Report. The inspection of the facilities did not reveal any unacceptable housing practices, as all animal husbandry either conforms to the Guide and the Animal Welfare Act Regulations or follows IACUC approved deviations from the Guide which have been measured against performance standards, or scientifically justified in the IACUC reviewed and approved protocol(s).

There continues to be ongoing concerns related to the animal facility infrastructure for animals used in research and teaching at CSU.

- The outdoor animal facilities need to be addressed. There continues to be a need for fencing upgrades at the VTH and ARBL for the livestock used in teaching. The bison facility acquired from the USDA is also in need of repair.
- The light control system at Painter Center is obsolete. The rodent caging is in need of replacement as the ventilated caging system are approaching their life span.

The design and construction of the Bay Facility on the South Campus continues to move forward. Given the nature of the facility, location, and current building costs, additional resources may be needed to see this facility to fruition.

In the last report, the IACUC asked for the AV to be involved when the Space Committee reviews and assigns new animal housing and/or procedure spaces to assure that they are appropriately allocated and that the husbandry and veterinary care fall under centralized care, via the Laboratory Animal Resources (LAR) unit and the Attending Veterinarian. This allows the IACUC to appropriately meet the needs of the researchers, minimize investigator-maintained spaces, and minimize satellite facilities. It is the IACUC's understanding that the OVPR representatives on the space committee will contact the AV as needed.

IV. Minority Views

Select A or B:

☒ A. No minority views were submitted or expressed.

☐ B. The following minority views were expressed: *[insert minority views here or attach]*

None.

V. Status of AAALAC Accreditation

CSU has maintained AAALAC Accreditation since 1994. The following entities are included in the accredited unit:

- College of Veterinary Medicine and Biomedical Sciences (CVMBS)
- College of Natural Sciences (CNS)
- College of Applied Human Sciences (CAHS)
- Laboratory Animal Resources (LAR), a division within the Office of the Vice President for Research.

The accredited facilities are noted as such on the Semiannual Facility Inspection Report document in the attachments.

CSU's AAALAC accreditation was confirmed July 13, 2018.

Signatures [*signatures of a majority of the IACUC members*]

[illegible]

Semiannual Program Review Checklist–Fall 2019ⁱ

Institutional Policies and Responsibilities

Date: October 22, 2019

1. Animal Care and Use Program		A*	M	S	C	NA
• Responsibility for animal well-being is assumed by all members of the program (<i>Guide</i> , p 1) [must]		X				
• IO has authority to allocate needed resources (<i>Guide</i> , p 13)		X				
• Resources necessary to manage program of veterinary care are provided (<i>Guide</i> , p 14) [must]		X				
• Sufficient resources are available to manage the program, including training of personnel in accord with regulations and the <i>Guide</i> (<i>Guide</i> , pp 11, 15)		X				
• Program needs are regularly communicated to IO by AV and/or IACUC (<i>Guide</i> , p 13)		X				
• Responsibilities for daily animal care and facility management are assigned to specific individual(s) when a full-time veterinarian is not available on site (<i>Guide</i> , p 14) [must]		X				
• Inter-institutional collaborations are described in formal written agreements (<i>Guide</i> , p 15)		X				
• Written agreements address responsibilities, animal ownership, and IACUC oversight (<i>Guide</i> , p 15)		X				
2. Disaster Planning and Emergency Preparedness		A*	M	S	C	NA
• Disaster plans for each facility to include satellite locations are in place (<i>Guide</i> , p 35, p 75) [must]		X				
• Plans include provisions for euthanasia (<i>Guide</i> , p 35) [must]		X				
• Plans include triage plans to meet institutional and investigators' needs (<i>Guide</i> , p 35)		X				
• Plans define actions to prevent animal injury or death due to HVAC or other failures (<i>Guide</i> , p 35)		X				
• Plans describe preservation of critical or irreplaceable animals (<i>Guide</i> , p 35)		X				
• Plans include essential personnel and their training (<i>Guide</i> , p 35)		X				
• Animal facility plans are approved by the institution and incorporated into overall response plan (<i>Guide</i> , p 35)		X				
• Law enforcement and emergency personnel are provided a copy and integration with overall plan is in place (<i>Guide</i> , p 35)		X				
3. IACUC		A*	M	S	C	NA
• Meets as necessary to fulfill responsibilities (<i>Guide</i> , p 25) [must]		X				
• IACUC Members named in protocols or with conflicts recuse themselves from protocol decisions (<i>Guide</i> , p 26) [must]		X				
• Continuing IACUC oversight after initial protocol approval is in place (<i>Guide</i> , p 33)		X				
• IACUC evaluates the effectiveness of training programs (<i>Guide</i> , p 15)		X				
4. IACUC Protocol Review - Special Considerations		A*	M	S	C	NA
• Humane endpoints and animal monitoring regimens are established appropriate to each animal use activity (<i>Guide</i> , p 27; p 28; p 29)		X				
• The IACUC protocol form, and the IACUC review of it, adequately addresses the need to review special considerations, including: <ul style="list-style-type: none"> ○ Communication with the IACUC regarding pilot studies ○ Restraint devices are justified, alternatives and refinements, and provisions for adapting animals to restraint, as necessary, are considered in animal use protocols (<i>Guide</i>, p 29) [must] ○ Multiple surgical procedures on a single animal, regardless of species, are justified and outcomes evaluated (<i>Guide</i>, p 30) ○ Major versus minor surgical procedures are evaluated on a case-by-case basis (<i>Guide</i>, p 30) 		X				

<ul style="list-style-type: none"> Animals on food/fluid restriction are monitored to ensure nutritional needs are met, and appropriate schedules used for monitoring and recording body weight and animal condition (<i>Guide</i>, p 31) Pharmaceutical grade chemicals are used , when available, for animal-related procedures (<i>Guide</i>, p 31) Non-pharmaceutical grade chemicals are described, justified, and approved by IACUC (<i>Guide</i>, p 31) Investigators conducting field studies know zoonotic diseases, safety issues, laws and regulations applicable in study area (<i>Guide</i>, p 32) Disposition plans are considered for species removed from the wild (<i>Guide</i>, p 32) Toe-clipping only used when no alternative, performed aseptically and with pain relief (<i>Guide</i>, p 75) 					
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5. IACUC Membership and Functions A* M S C NA

• IACUC is comprised of at least 5 members, appointed by CEO (PHS Policy, IV.A.3.)	X				
• Members include a veterinarian, a scientist, a nonscientist, and a nonaffiliated non-lab animal user (<i>Guide</i> , p 24) ⁱⁱ	X				
• IACUC authority and resources for oversight and evaluation of institution's program are provided (<i>Guide</i> , p 14)	X				
• IACUC conducts semiannual evaluations of institutional animal care and use program (PHS Policy, IV.B.)	X				
• Conducts semiannual inspections of institutional animal facilities (PHS Policy, IV.B.)	X				
• IACUC organizationally reports to the Institutional Official (PHS Policy, IV.A.1.b.)	X				
• Methods for reporting and investigating animal welfare concerns are in place (<i>Guide</i> , p 23) [must]	X				
• Reviews and investigates concerns about animal care and use at institution ⁱⁱⁱ (PHS Policy, IV.B.)	X				
• Procedures are in place for review, approval, and suspension of animal activities ^{iv} (PHS Policy, IV.B.)	X				
• Procedures are in place for review and approval of significant changes to approved activities (PHS Policy, IV.B.)	X				
• Policies are in place for special procedures (e.g., genetically modified animals, restraint, multiple survival surgery, food and fluid regulation, field investigations, agricultural animals) (<i>Guide</i> , p 27-32)	X				
• Requests for exemptions from major survival surgical procedure restrictions are made to USDA/APHIS, as necessary ^v (<i>Guide</i> , p 30) [must]	X				

6. IACUC Training A* M S C NA

• All IACUC members should receive:					
o Formal orientation to institution's program (<i>Guide</i> , p 17)	X				
o Training on legislation, regulations, guidelines, and policies (<i>Guide</i> , p 17)	X				
o Training on how to inspect facilities and labs where animal use or housing occurs (<i>Guide</i> , p 17)	X				
o Training on how to review protocols as well as evaluate the program (<i>Guide</i> , p 17)	X				
o Ongoing training/education (<i>Guide</i> , p 17)	X				

7. IACUC Records and Reporting Requirements^{vi} A* M S C NA

• Semiannual report to the IO (PHS Policy, IV.B.)					
o Submitted to IO every 6 months	X				
o Compiles program review and facility inspection(s) results (includes all program and facility deficiencies)	X				
o Includes minority IACUC views	X				
o Describes IACUC-approved departures from the <i>Guide</i> or PHS Policy and the reasons for each departure ^{vii}	X				
o Distinguishes significant from minor deficiencies	X				
o Includes a plan and schedule for correction for each deficiency identified ^{viii}	X				
• Reports to OLAW (PHS Policy, IV.F.)					
o Annual report to OLAW documents program changes, dates of the semiannual program reviews and facility inspections and includes any minority views	X				

o Promptly advises OLAW of serious/ongoing <i>Guide</i> deviations or PHS Policy noncompliance (NOT-OD-05-034)	X				
o Institute must promptly advise OLAW of any suspension of an animal activity by the IACUC (NOT-OD-05-034)	X				
• Reports to U.S. Department of Agriculture (USDA) or Federal funding agency ^{ix}					
o Annual report to USDA contains required information including all exceptions/exemptions	X				
o Reporting mechanism to USDA is in place for IACUC-approved exceptions to the regulations and standards	X				
o Reports are filed within 15 days for failures to adhere to timetable for correction of significant deficiencies	X				
o Promptly reports suspensions of activities by the IACUC to USDA and any Federal funding agency	X				
• Records (PHS Policy, IV.E.)					
o IACUC meeting minutes and semiannual reports to the IO are maintained for 3 years	X				
o Records of IACUC reviews of animal activities include all required information*	X				
o Records of IACUC reviews are maintained for 3 years after the completion of the study	X				

8. Veterinary Care (See also next section - Veterinary Care)

	A*	M	S	C	NA
• An arrangement for veterinarian(s) with training or experience in lab animal medicine is in place including backup veterinary care ^{xi}	X				
• Veterinary access to all animals is provided (<i>Guide</i> , p 14) [must]	X				
• Direct or delegated authority is given to the veterinarian to oversee all aspects of animal care and use (<i>Guide</i> , p 14) [must]	X				
• Veterinarian provides consultation when potential pain and distress exceeds anticipated level in protocol (<i>Guide</i> , p 5) [must]	X				
• Veterinarian provides consultation when interventional control is not possible (<i>Guide</i> , p 5) [must]	X				
• If part time /consulting veterinarian, visits meet programmatic needs (<i>Guide</i> , p 14)	X				
• Regular communication occurs between veterinarian and IACUC (<i>Guide</i> , p 14)	X				
• Veterinarian(s) have experience and training in species used (<i>Guide</i> , p 15) [must]	X				
• Veterinarian(s) have experience in facility administration/management (<i>Guide</i> , p 15)	X				

9. Personnel Qualifications and Training

	A*	M	S	C	NA
• All personnel are adequately educated, trained, and/or qualified in basic principles of laboratory animal science prior to initiating work. Personnel included: [must]					
o Veterinary/other professional staff (<i>Guide</i> , p 15-16)					
o IACUC members (<i>Guide</i> , p 17)					
o Animal care personnel (<i>Guide</i> , p 16)					
o Research investigators, instructors, technicians, trainees, and students (<i>Guide</i> , pp 16-17)					
o Continuing education for program and research staff provided to ensure high quality care and reinforce training (<i>Guide</i> , pp 16-17)					
o Training is documented (<i>Guide</i> , p 15)					
• Training program content includes:					
o Methods for reporting concerns (<i>Guide</i> , p 17)					
o Humane practices of animal care and use (e.g., housing, husbandry, handling, and research procedures, anesthesia, pre- and post-operative care, aseptic surgical techniques and euthanasia (<i>Guide</i> , p 17) ^{xii}					
o Concepts and availability of the 3 Rs (PHS Policy, IV.A.1.g.; <i>Guide</i> , p 17)					
o IACUC Function and Animal care and use legislation (<i>Guide</i> , p 17)					
o Occupational Health and Safety Training as applicable (<i>Guide</i> , p 20)					

10. Occupational Health and Safety of Personnel

	A*	M	S	C	NA
• Program is in place and is consistent with federal, state, and local regulations (<i>Guide</i> , p 17) [must]	X				
• Program covers <i>all</i> personnel who work in laboratory animal facilities (<i>Guide</i> , p 18)	X				
• Changing, washing, and showering facilities are available as appropriate (<i>Guide</i> , p 19)	X				

• Hazardous facilities are separated from other areas and identified as limited access (<i>Guide, p 19</i>)	X				
• Personnel training is provided based on risk (e.g., zoonoses, hazards, personal hygiene, special precautions, animal allergies) (<i>Guide, p 20</i>)	X				
• Personal hygiene procedures are in place (e.g., work clothing, eating/drinking/smoking policies) (<i>Guide, p 20</i>)	X				
• Procedures for use, storage, and disposal of hazardous biologic, chemical, and physical agents are in place (<i>Guide, p 21</i>)	X				
• Personal Protective Equipment for the work area is appropriate and available (<i>Guide, p 21</i>)	X				
• Program for medical evaluation and preventive medicine for personnel includes:					
o Pre-placement evaluation including health history (<i>Guide, p 22</i>)	X				
o Immunizations as appropriate (e.g., rabies, tetanus) and tests as appropriate (<i>Guide, p 22</i>)	X				
o Zoonosis surveillance as appropriate (e.g., Q-fever, tularemia, Hantavirus, plague) (<i>Guide, p 23</i>)	X				
o Procedures for reporting and treating injuries, including accidents, bites, allergies, etc. (<i>Guide, p 23</i>)	X				
o Promotes early diagnosis of allergies including preexisting conditions (<i>Guide, p 22</i>)	X				
o Considers confidentiality and other legal factors as required by federal, state and local regulations (<i>Guide, p 22</i>) [must]	X				
o If serum samples are collected, the purpose is consistent with federal and state laws (<i>Guide, p 22</i>) [must]					X
• Waste anesthetic gases are scavenged, as appropriate (<i>Guide, p 21</i>)	X				
• Hearing protection is provided in high noise areas (<i>Guide, p 22</i>)	X				
• Respiratory protection is available when performing airborne particulate work (<i>Guide, p 22</i>)	X				
• Occupational safety and health of field studies is reviewed by OSH committee or office (<i>Guide, p 32</i>)	X				

11. Personnel Security A* M S C NA

• Preventive measures in place, as appropriate to the risks determined by the institution (<i>Guide, p 23</i>)	X				
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12. Investigating & Reporting Animal Welfare Concerns A* M S C NA

• Methods for investigating and reporting animal welfare concerns are established (<i>Guide, p 23</i>) [must]	X				
• Reported concerns and corrective actions are documented (<i>Guide, p 24</i>)	X				
• Mechanisms for reporting concerns are posted in facility and at applicable website with instructions (<i>Guide, p 24</i>)	X				
o Includes multiple contacts (<i>Guide, p 24</i>)	X				
o Includes anonymity, whistle blower policy, nondiscrimination and reprisal protection (<i>Guide, p 24</i>)	X				

* A = acceptable

M = minor deficiency

S = significant deficiency (is or may be a threat to animal health or safety)

C = change in program (PHS Policy [IV.A.1.a.-i.](#)) (include in semiannual report to IO and in annual report to OLAW)

NA = not applicable

NOTES:

Veterinary Care

Date: October 22, 2019

1. Clinical Care and Management

	A*	M	S	C	NA
• Veterinary program offers high quality of care and ethical standards (<i>Guide, p 105</i>) [must]	X				
• Veterinarian provides guidance to all personnel to ensure appropriate husbandry, handling, treatment, anesthesia, analgesia, and euthanasia (<i>Guide, p 106</i>)	X				
• Veterinarian provides oversight to surgery and perioperative care (<i>Guide, p 106</i>)	X				
• Veterinary care program is appropriate for program requirements (<i>Guide, pp 113-114</i>)	X				
• Veterinarian(s) is familiar with species and use of animals and has access to medical and experimental treatment records (<i>Guide, p 114</i>)	X				
• Procedures to triage and prioritize incident reports are in place (<i>Guide, p 114</i>)	X				
• Procedures are in place to address:					
o Problems with experiments to determine course of treatment in consultation with investigator(<i>Guide, p 114</i>)	X				
o Recurrent or significant health problems with the IACUC and documentation of treatments and outcomes (<i>Guide, p 114</i>)	X				
o Veterinary review and oversight of medical and animal use records (<i>Guide, p 115</i>)	X				
• Procedures established for timely reporting of animal injury, illness, or disease (<i>Guide, p 114</i>) [must]	X				
• Procedures established for veterinary assessment, treatment, or euthanasia (<i>Guide, p 114</i>) [must]	X				
• Veterinarian is authorized to treat, relieve pain, and/or euthanize (<i>Guide, p 114</i>) [must]	X				

2. Animal Procurement and Transportation/Preventive Medicine

	A*	M	S	C	NA
• Procedures for lawful animal procurement are in place (<i>Guide, p 106</i>) [must]	X				
• Sufficient facilities and expertise are confirmed prior to procurement (<i>Guide, p 106</i>)	X				
• Procurement is linked to IACUC review and approval (<i>Guide, p 106</i>)	X				
• Appropriate records are maintained on animal acquisition (<i>Guide, p 106</i>)	X				
• Animal vendors are evaluated to meet program needs and quality (<i>Guide, p 106</i>)	X				
• Breeding colonies are based on need and managed to minimize numbers (<i>Guide, p 107</i>)	X				
• Procedures for compliance with animal transportation regulations, including international requirements, are in place (<i>Guide, p 107</i>) [must]	X				
• Transportation is planned to ensure safety, security and minimize risk (<i>Guide, p 107</i>)	X				
• Movement of animals is planned to minimize transit time and deliveries are planned to ensure receiving personnel are available (<i>Guide, pp 107- 108</i>)	X				
• Appropriate loading and unloading facilities are available (<i>Guide, p 109</i>)	X				
• Environment at receiving site is appropriate (<i>Guide, p 109</i>)	X				
• Policies in place on separation by species, source, and health status (<i>Guide, pp 109, 111-112</i>)	X				
• Procedures in place for quarantine to include zoonoses prevention (<i>Guide, p 110</i>)	X				
• Quarantined animals from different shipments are handled separately or physically separated (<i>Guide, p 110</i>)	X				
• Procedures in place for stabilization/acclimation (<i>Guide, pp 110-111</i>)	X				
• Policies in place for isolation of sick animals (<i>Guide, p 112</i>)	X				
• Program is in place for surveillance, diagnosis, treatment and control of disease to include daily observation (<i>Guide, p 112</i>)	X				
• Diagnostic resources are available for preventive health program (<i>Guide, p 112</i>)	X				

3. Surgery

	A*	M	S	C	NA
• Researchers have appropriate training to ensure good technique (<i>Guide, p 115</i>) [must]	X				
• Pre-surgical plans are developed and include veterinary input (e.g., location, supplies, anesthetic and analgesic use, peri-operative care, recordkeeping) (<i>Guide, p 116</i>)	X				

• Aseptic surgery is conducted in dedicated facilities or spaces, unless exception justified and IACUC approved (<i>Guide, p 116</i>)	X				
• Surgical procedures including laparoscopic procedures are categorized as major or minor (<i>Guide, pp 117-118</i>)	X				
• For nonsurvival surgery, the site is clipped, gloves are worn and instruments and area are clean (<i>Guide, p 118</i>)	X				
• Aseptic technique is followed for survival surgical procedures (<i>Guide, pp 118-119</i>)	X				
• Effective procedures for sterilizing instruments and monitoring expiration dates on sterile packs are in place (<i>Guide, p 119</i>)	X				
• Procedures for monitoring surgical anesthesia and analgesia are in place (<i>Guide, p 119</i>)	X				
• For aquatic species, skin surfaces are kept moist during surgical procedures (<i>Guide, p 119</i>)	X				
• Post-operative monitoring and care are provided by trained personnel and documented (e.g., thermoregulation, physiologic function, analgesia, infection, removal of skin closures) (<i>Guide, pp 119-120</i>)	X				

4. Pain, Distress, Anesthesia and Analgesia A* M S C NA

• Guidelines for assessment and categorization of pain, distress and animal wellbeing are provided during training (<i>Guide, p 121</i>)	X				
• Selection of analgesics and anesthetics is based on professional veterinary judgment (<i>Guide, p 121</i>)	X				
• Painful procedures are monitored to ensure appropriate analgesic management (<i>Guide, p 122</i>)	X				
• Procedures are in place to assure antinociception before surgery begins (<i>Guide, p 122</i>) [must]	X				
• Guidelines for selection and use of analgesics and anesthetics are in place and regularly reviewed and updated (<i>Guide, p 122</i>)	X				
• Special precautions for the use of paralytics are in place to ensure anesthesia ^{xiii} (<i>Guide, p 123</i>)	X				

5. Euthanasia A* M S C NA

• Methods are consistent with AVMA Guidelines on Euthanasia unless approved by the IACUC (<i>Guide, p 123</i>)	X				
• Training is provided on appropriate methods for each species and considers psychological stress to personnel (<i>Guide, p 124</i>)	X				
• Procedures and training are in place to ensure death is confirmed (<i>Guide, p 124</i>) [must]	X				

6. Drug Storage and Control A* M S C NA

• Program complies with federal regulations for human and veterinary drugs (<i>Guide, p 115</i>) [must]	X				
• Drug records and storage procedures are reviewed during facility inspections (<i>Guide, p 115</i>)	X				
• Procedures are in place to ensure analgesics and anesthetics are used within expiration date (<i>Guide, p 122</i>) [must]	X				

* A = acceptable

M = minor deficiency

S = significant deficiency (is or may be a threat to animal health or safety)

C = change in program (PHS Policy IV.A.1.a.-i.) (include in semiannual report to IO and in annual report to OLAW)

NA = not applicable

NOTES:

• Endnotes

ⁱ The PHS Policy requires that Assured institutions comply with the regulations (9 CFR, Subchapter A) issued by the U.S. Department of Agriculture (USDA) under the Animal Welfare Act, as applicable. The endnotes below are specific USDA regulatory requirements that differ from or are in addition to the PHS Policy. This list is not intended to be all inclusive. For additional information please refer to 9 CFR Subchapter A - Animal Welfare.

ⁱⁱ Part 2 Subpart C - Research Facilities

- 2.31(b)(2) - "The Committee shall be composed of a Chairman and at least two additional members;... at least one shall not be affiliated in any way with the facility...such person will provide representation for general community interests in the proper care and treatment of animals." [PHS policy requires 5 members]

ⁱⁱⁱ 2.32(c)(4) - "...No facility employee, Committee member, or laboratory personnel shall be discriminated against or be subject to any reprisal for reporting violations of any regulation or standards under the Act." [USDA requirement additional to PHS Policy]

^{iv} 2.31(d)(5) - "...shall conduct continuing reviews of activities...not less than annually." [PHS Policy requires a complete new review every 3 years utilizing all the criteria for initial review]

^v 2.31(d)(1)(x) - "...no animal will be used in more than one major operative procedure from which it is allowed to recover unless...(it is) justified for scientific reasons...(or is) required as routine veterinary procedure...or other special circumstances as determined by the Administrator on an individual basis." [this last point is an additional USDA justification for multiple survival surgeries]

^{vi} 2.36 - "...each reporting facility shall submit an annual report to the APHIS, AC sector supervisor for the State where the facility is located on or before December 1 of each calendar year." [The USDA annual report has a list of requirements which differ from PHS annual report]

^{vii} 2.36(b)(3) - "...exceptions to the standards and regulations be specified and explained by the principal investigator and approved by the IACUC. A summary of all such exceptions must be attached to the facility's annual report." [Refers to USDA annual report]

^{viii} 2.31(c)(3) - "...Any failure to adhere to the plan and schedule that results in a significant deficiency remaining uncorrected shall be reported in writing within 15 business days by the IACUC, through the institutional official, to APHIS and any Federal agency funding that activity." [PHS Policy requires prompt reporting to OPRR of serious or continuing noncompliance with the PHS Policy or serious deviations from the provisions of the *Guide*]

^{ix} 2.36 - "...each reporting facility shall submit an annual report to the APHIS, AC sector supervisor for the State where the facility is located on or before December 1 of each calendar year." [The USDA annual report has a list of requirements which differ from PHS annual report]

^x In addition to PHS requirements for IACUC review/application for funding, USDA regulations require:

2.31(d)(1)(ii) - "The principal investigator (PI) consider alternatives to procedures that cause more than momentary or slight pain or distress to the animals, and has provided a written narrative description of the methods and sources...used to determine that alternatives were not available."

2.31(d)(1)(iii) - "The PI has provided written assurance that the activities do not unnecessarily duplicate previous experiments."

2.31(d)(1)(iv) - "Procedures that may cause more than momentary or slight pain or distress to the animals will:

- involve in their planning, consultation with the attending veterinarian or his or her designee; [PHS Policy does not specify veterinary consultation]
- not include paralytics without the use of anesthesia;"

2.31(d)(1)(x) - "No animal will be used in more than one major operative procedure from which it is allowed to recover, unless justified for scientific reasons by the principal investigator, in writing..."

^{xi} 2.33(a)(1) - "In the case of a part-time attending veterinarian or consultant arrangements, the formal arrangements shall include a written program of veterinary care and regularly scheduled visits to the research facility." [USDA requirement additional]

^{xii} 2.32(c) - "Humane methods of animal maintenance and experimentation, including the basic needs of each species, proper handling and care for the various species of animals used by the facility, proper pre-procedural and post-procedural care of animals, and aseptic surgical methods and procedures."

^{xiii} 2.31(d)(iv)(C) - "Procedures that may cause more than momentary or slight pain or distress to the animals will...not include the use of paralytics without anesthesia."

Attachment 2
Semi-Annual Facility Inspection Report – Fall 2019

Date	Location	Deficiency Category (M or S*)	Deficiency	Corrective Action/Plan	Responsible Party	Correction Schedule and Interim Status
Agricultural Research, Development and Education Center (ARDEC) & Conference Center						
10/15/19			No deficiencies			
Anatomy/Zoology (AAALAC Accredited)						
8/8/19			No deficiencies			
Animal Disease Laboratory (ADL) (AAALAC Accredited)						
9/16/19		M	Expired drugs	Dispose of properly		Done 9/30/19
Animal Reproduction and Biotechnology Lab (ARBL) (AAALAC Accredited)						
9/16/19			No deficiencies			
Aquatic Toxicology Lab, Colorado Parks and Wildlife (CPW) & Quonset Hut						
10/31/19			No deficiencies			
Bellvue Research Hatchery, Colorado Parks and Wildlife (CPW)						
10/31/19			No deficiencies			
Biology						
8/6/19			No deficiencies			
8/22/19	3610		No deficiencies			
Block House						
8/20/19			No deficiencies			
Deer Facility I & II, SARA (AAALAC Accredited)						
8/19/19	SARA		No deficiencies			
8/20/19	Deer I & II		No deficiencies			
Eastern Colorado Research Center (ECRC; Akron, CO)						
10/24/19			No deficiencies			
Education and Outreach Center (EOC)/Natural & Environmental Sciences Building (NESB) (AAALAC Accredited)						
8/15/19			No deficiencies			
Equine Orthopedic Research Center (EORC) (AAALAC Accredited)						
9/24/19			No deficiencies			
Equine Performance Analysis Facility (EPAF) (AAALAC Accredited)						
9/24/19			No deficiencies			

Semi-Annual Facility Inspection Report – Fall 2019, Continued

Date	Location	Deficiency Category (M or S*)	Deficiency	Corrective Action/Plan	Responsible Party	Correction Schedule and Interim Status
Equine Reproduction Laboratory (ERL) (AAALAC Accredited)						
10/21/19			No deficiencies			
Equine Teaching and Research Center (ETRC)						
10/21/19			No deficiencies			
Foothills Fisheries Lab (FFL)						
10/21/19			No deficiencies			
Global Food Innovation Center (GFIC)						
8/15/19			No deficiencies			
Gifford (AAALAC Accredited)						
9/26/19			No deficiencies			
Infectious Disease Research Center (IDRC) (AAALAC Accredited)						
9/19/19			No deficiencies			
LaPorte						
9/16/19			No deficiencies			
Microbiology (AAALAC Accredited)						
8/5/19			No deficiencies			
MOBY (AAALAC Accredited)						
6/27/19	B160B and B161		No deficiencies (newly renovated areas)			asked to stay on March/September inspection schedule
9/16/19	B160B and B161		No deficiencies			
Molecular and Radiological Biosciences (AAALAC Accredited)						
8/7/19	221		No deficiencies			
8/20/19	467/469, 475, Basement (4, 6)		No deficiencies			
Painter Center (AAALAC Accredited)						
8/26/19	Surgical Suite	M	Critical care nutritional supplement expired 6/2019	Remove or dispose of	LAR	confirmed this was done by 9/1/19

Semi-Annual Facility Inspection Report – Fall 2019, Continued

Date	Location	Deficiency Category (M or S*)	Deficiency	Corrective Action/Plan	Responsible Party	Correction Schedule and Interim Status
8/26/19	Surgical Suite	M	Telfa pads in surgeon prep area above sink expired 6/2019	Remove or label that it is for non-animal use	LAR	confirmed this was done by 9/1/19
Pathology (AAALAC Accredited)						
8/22/19	309		No deficiencies			
9/23/19	218/219, Basement		No deficiencies			
Physiology (AAALAC Accredited)						
8/7/19			No deficiencies			
Rampart (AAALAC Accredited)						
10/21/19			No deficiencies			
Rouse Ranch (Saratoga, WY)						
10/25/19	Calving barn fridge	M	Expired drug	Discard		Discarded at time of inspection
Sky View Academy Fish (video)						
10/29/19			Inspection no longer required. Confirmed with CSU PI [redacted] and teacher at Sky View that animal activities not sponsored by CSU nor are they NSF funded.			
Temple Grandin Equine Center (Denver; video)						
10/30/19			No deficiencies			
Translational Medicine Institute (TMI) (AAALAC Accredited?) – includes PSRL and Continuing Education						
9/24/19	TMI 157	M	Expired epinephrine (7/18). Atropine expiring 9/19.	Dispose of properly	TMI Anesthesia Team	emailed 10/23/19 that this has been discarded.
Veterinary Teaching Hospital (VTH) (AAALAC Accredited)						
9/24/19	ACC 155/156	M	F air canister not labeled with weight and date of use.	F air canister needs to be weighed and dated regularly.		emailed 11/1/19. She stated that the F air canister was labeled with its initial weight and date, and weighed it before each use to make sure it was still valid, but had not been writing it

Semi-Annual Facility Inspection Report – Fall 2019, Continued

Date	Location	Deficiency Category (M or S*)	Deficiency	Corrective Action/Plan	Responsible Party	Correction Schedule and Interim Status
						down. put a new date and weight on it and will regularly update it in writing on the canister.
9/24/19	ACC 155/156	M	There is a section of the lab that is used as a break room with coffee, etc.	Post signs that food is not allowed.		emailed 11/1/19. She stated that the area used as a coffee station has been removed. There is now a taped off boundary around the sink area that is a place to set food/drinks when in the lab and a sign is hanging in the main part of the lab specifying that there is no food or drink allowed.
9/24/19	ACC260	M	Biosafety Cabinet (BSC) not current on certification	Confirm it is certified and label appropriately		stated that all BSCs in lab have not been certified (required annually); recertification will not occur until end of 2019. PI currently using BSCs. emailed PI 11/15/19 to offer help to get BSC recertification appointment set up.
9/26/19	Pastures	M	Secure fencing above the automatic waterer between goat/alpaca pens	Fix		Done 10/15/19
9/26/19	Pastures	M	Horse pen fencing (side with no electric fencing on it and is across from alpaca pen) curled up on ground	Re-bury curled up fencing on the ground		Done 10/15/19; revisited bc issue recurred. emailed on 11/1/19 that due to weather they have not reburied the fencing but they are working on a long-term fix. This item will also be checked regularly when the fence lines are walked. confirmed on 11/7/19 that the pasture fence has been staked into the ground and covered.

Semi-Annual Facility Inspection Report – Fall 2019, Continued

Date	Location	Deficiency Category (M or S*)	Deficiency	Corrective Action/Plan	Responsible Party	Correction Schedule and Interim Status
Wagar						
9/26/19			No deficiencies			
Yates						
9/26/19			No deficiencies			
Private Vet Clinics for VetDC/FDA Grant (Various Locations, n=6 total; video)						
10/14/19 10/16/19 (x2) 10/24/19 10/25/19 10/30/19			No deficiencies			
Privately-owned horse facility						
8/1/19			No deficiencies			