SEMIANNUAL REPORT

ANIMAL CARE AND USE
PROGRAM REVIEW AND FACILITY INSPECTION
OF THE

Rocky Mountain Laboratories

April 2020

Section A – Site Visits & Program Review

1) Inspections of the RML animal facilities (AF), satellite holding facilities (SF), USDA-defined study areas for regulated species (SA) and areas where any surgical manipulations (Surg) are performed (as applicable) were conducted as indicated below:

Location	Type	Date	ACUC Members
Redacted by agreement	AF, Surgery	03/24/2020	Redacted by agreement
	AF	03/25/2020	
	AF, Surgery	03/24/2020	
	AF	03/25/2020	
	AF, Surgery	03/24/2020	

* - Ad hoc consultant per NOT-OD-20-088 "Flexibilities for Assured Institutes for Activities of Institutional Animal Care and Use Committees (IACUCs) Due to COVID-19.

2) Visits by at least one member of the ACUC to all remaining areas where animal activities were performed were conducted. These visits occurred during the previous six months and findings and corrective actions are described in this or the previous semiannual report.

3) The following document(s) was/were used as the basis for review of the animal care and use program:

	Document/Resource:
√	Guide for the Care & Use of Laboratory Animals, 8th Edition (Guide)
	AAALAC Program Description
	OACU "Animal Program Semiannual Assessment Checklist" (1 page summary)
√*	OACU/OLAW "Semiannual Program Review & Facility Inspection Checklist" (24 pages)
	Other documents/resources (please specify)
* Modified version (Program review only)	

4) The program review was conducted in the following manner:

	Program Review Process
	Full committee member review for *ALL* of the review, i.e. the documents/resources listed in A3) are included in the meeting packet and reviewed at a fully convened meeting
	Full committee and subcommittee review, i.e. the documents/resources listed in A3) are assigned to various members who review their parts/sections and then they discuss their reviews with the full committee for a final review/approval
√	Designated member review, i.e. the documents/resources listed in A3) are assigned to various members who review their parts/sections and then report back to the full committee the results of their designated review
	Other, please describe:

Section B – Regulatory Compliance:

Except as noted in Section F below, the facilities and program are in full compliance with the Public Health Service Policy, the Animal Welfare Act Regulations and the Guide, which were used as the basis for this evaluation.

Section C – Program Changes:

The following administrative and procedural changes have occurred since the program was last evaluated:

1) Administrative/Procedural Changes:

N/A

2) Key Personnel Changes - ACUC Chair, ACUC Attending Vet, APD, or Program Manager:

Role (ACUC Chair, ACUC AV, IC APD, or IC Animal Program Manager)	**Name**	**Action** (joined or departed)
N/A		

3) Animal Facility/Area Changes:

Facility Type (AF/SF)	**Location**	**Action** (opened, closed, under renovation, etc.)
AF	Redacted by agreement	Continued repairs underway to correct structural and mechanical issues associated with an aging building.

Section D – Guide Departures & USDA Exceptions:

Departures from the standards of the *Guide* and exceptions to the USDA *Animal Welfare Act Regulations,* which have been approved by the Animal Care and Use Committee, include the following:

1. Departures from the Guide:

Guide Departures	***Guide Departure Citation (page #)***	***Justification (scientific, veterinary, or animal welfare)***
Dwarf hamsters are housed in caging of 5" in height	Space allocation – (p. 55 – 63) Table 3.2 (p.57)	Veterinary/Animal Welfare

2. Exceptions to the AWAR:

Species	***# Animals Affected (this Period)***	***9CFR title/section***	***Description and Rationale***
Non-human Primates	55	2.31 d). iv). A). Institutional Animal Care and Use Committee (Column E Procedures)	55 non-human primates infected with viral hemorrhagic fever (VHF) viruses and other ABSL-4 agents have been used in approved research studies evaluating mechanisms of pathogenesis, as well as comparing various vaccine candidates and treatment strategies. All animals are monitored at least twice daily for signs of disease. Clearly defined clinical endpoints are established and utilized if clinical disease occurs prior to scheduled euthanasia in the study design. As these are infectious disease models, NSAIDS and other pain modulating drugs cannot be used due to known effects on the disease process and the viral and immune parameters being measured. Therefore, these animals are listed as "column E" for these studies.
Guinea Pigs	18	2.31 d). iv). A). Institutional Animal Care and Use Committee (Column E Procedures)	18 Guinea pigs infected with VHF viruses and other ABLS-4 agents have been used in approved research efforts for the generation of models of human disease and vaccine development. All animals are monitored daily for signs of disease. Clearly defined clinical endpoints are established and utilized if clinical disease occurs prior to scheduled euthanasia in the study design. As these are infectious disease models, NSAIDS and other pain modulating drugs cannot be used due to known effects on the disease process and the viral and immune parameters being measured. Therefore, these animals are listed as "column E" for these studies.
Swine	10	2.31 d). iv). A). Institutional Animal Care and Use Committee (Column E Procedures)	10 swine infected with ABLS-4 agents have been used in approved research efforts for the generation of models of human disease and vaccine development. All animals are monitored at least twice daily for signs of disease. Clearly defined clinical endpoints are established and utilized if clinical disease occurs prior to scheduled euthanasia in the study design. As these are infectious disease models, NSAIDS and other pain modulating drugs cannot be used due to known effects on the disease process and the viral and immune parameters being measured. Therefore, these animals are listed as "column E" for these studies.
Non-human primates	78	3.81 Environmental Enrichment to Promote Psychological Well Being (Singly Housed NHP).	78 non-human primates on approved infectious disease research proposals have been singly-housed for the duration of the studies. The avoidance of direct contact between infected animals and therefore the potential for cross contamination, along with the need to protect individuals from harmful interactions with other animals during the disease process requires single-housing. None of the singly-housed animals are isolated and all are able to see, hear, and smell members of their own species housed in the same room
Non-human primates	6	3.81 Environmental Enrichment to Promote Psychological Well Being (Singly Housed NHP).	6 non-human primates displaying aggressive behavior, for medical and/or clinical treatment have been singly-housed temporarily or long term, based on assessment by the veterinary staff. None of the singly-housed animals are isolated and all are able to see, hear, and smell members of their own species housed in the same room.

Section E – Previous Deficiencies & Plans:

The committee validated that the plans and schedules for deficiencies noted during the previous RML program review, and facilities and laboratory inspections were achieved within the time intervals projected on the previous semiannual report.

Section F – Current Deficiencies & Plans:

Deficiencies found *over the past 6 months* during RML program review, facility inspections, and laboratory inspections, are as follows:

	Deficiency	[1]M/S	Location	Correction Plan	Responsible Party	Scheduled Completion Date (mm/dd/yy)	[2]Status: C/P
1	(b)(5)						
2	Pests on floor	M	Redacted by agreement	Removed at time of inspection	RMVB	Removed at time of inspection	C
3	Door by necropsy not shutting securely	M		Repaired	ORF	ORF has repaired at the time of request.	C
4	Expired gloves	M		Remove	LPVD	Removed at time of inspection	C
5	(b)(5)						
6	Pest	M	Redacted by agreement	Removed at time of inspection	RMVB	Removed at time of inspection	C
7	Crack in floor (B/C animal side)	M		Repair	ORF	Based on ORF schedule and animal room availability	C
8	(b)(5)						

[1]M=minor; S=significant **[2]C=corrected; P=pending**

Section G – Reportable Events:

PHS Policy (i.e. OLAW) reportable events that occurred in the last 6 months or that are still awaiting final disposition are as follows: **[X] None**

Section H – Shared & Central Facilities:

This semiannual report also encompasses review and oversight of animals and animal activities which were present or occurred in shared or central facilities. Deficiencies were noted and transmitted directly to the facility, and if necessary, to the responsible Animal Care and Use Committee. These reviews were conducted as indicated below:

This section does not apply to RML.

Section I – Minority Report

There is not a minority report filed with this semiannual report.

RML ACUC Member Signatures:

Redacted by agreement

Olivia Steele-Mortimer, Chair, ACUC

Redacted by agreement

Dana Scott, Attending Veterinarian

Redacted by agreement

Redacted by agreement

(Revised – 03/2020)

RML ACUC Member Signatures:

Redacted by agreement

Olivia Steele-Mortimer, Chair, ACUC

Dana P. Scott -S Digitally signed by Dana P. Scott -S
Date: 2020.04.22 13:31:12 -06'00'

Dana Scott, Attending Veterinarian

Redacted by agreement

Redacted by agreement

(Revised – 03/2020)

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(Revised – 03/2020)

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Dana Scott, Attending Veterinarian

Redacted by agreement

Redacted by agreement

(Revised – 03/2020)

Semiannual Report Attachment 3
Supplemental Information
Spring 2020

Performance Standards:

1. Multiple Species Housed. In Redacted by agreement rooms Redacted by agreement *Mus musculus* are co-housed with *Peromyscus maniculatus* and *P. leucopus*. In the temporary rodent quarantine room Redacted by agreement *Mastomys natalensis* are housed in the same room as *Mus musculus*. In Redacted by agreement *Mesocricetus auratus* are housed in the same room as *Rattus norvegicus*. In addition, multiple species of rodents are co-housed in the animal holding rooms of the maximum containment laboratory Redacted by agreement In all above cases, all animals are housed in individually-ventilated caging. (Reference: *Guide*, p. 111)
2. Extended Cage Change Frequency. The RML ACUC has approved facility-wide extended cage change for mice. Mice in microisolator cages are changed once every 14 days. The Veterinary branch conducted a study on the impact of a 14-day cage change (parameters included ammonia levels, condition of bedding, and behavior & appearance of the animals) and no impact was found. (Reference: *Guide*, p. 70)
3. Cage Size not in accordance with Guide recommendation. The Guide standard for mouse cage height is 5 inches, and cage height for hamsters is 6 inches. RML has colonies of several different hamster species, including 4 species of what can be described as dwarf hamsters. These species are Djhungarian (*Phodopus campbelli*), Siberian (*Phodopus sungorus*), Chinese (*Cricetulus griseus*) and Armenian *(Cricetulus migratorius*) hamsters. These 4 species of hamsters are approximately the size of a laboratory mouse (*Mus musculus*). Because of their relatively small size, these hamsters have difficulty reaching the water lixit valve and food hopper in a standard (6" high) hamster cage. They are able to reach food and water comfortably in a standard (5" high) mouse cage. (Reference: Guide, p. 55 – 58)

Veterinary Verification & Consultation:
Included as Attachment 4.

Animal Adoption:
RML does not currently have an adoption policy.

RML ACUC Policy for Changes (Modifications) to Animal Study Proposals

Purpose

The purpose of this policy is to ensure compliance with the **OLAW Revised Guidance on Significant Changes to Animal Activities**: http://grants.nih.gov/grants/guide/notice-files/NOT-OD-14-126.html in accordance with the NIH Animal Research Advisory Committee (ARAC) Guideline Regarding Significant Changes to Animal Study Proposals

Introduction

Any significant change to an Animal Study Proposal must be documented, using the **RML ASP Addendum Form**, and submitted to the RML ACUC coordinator. These changes must be approved prior to conducting any procedures on live animals.

According to the current OLAW guidance there are three classifications of changes. Significant changes are either Category 1 or 2, as described below. Minor changes are Category 3.

The RML ACUC has delegated the ACUC Chair to make the initial determination of which classification an addendum falls under. For all addenda, the specific method of review, along with the outcome of the review, is documented in the ACUC meeting Agenda and Minutes.

Category 1: Mandatory non-Administrative Review.

These changes require either Full Committee Review (FCR) or Designated Member Review (DMR)**.**

A. Changes from non-survival to survival surgery
B. Changes resulting in greater pain, distress, or degree of invasiveness
C. Changes in housing and or use of animals in a location that is not currently overseen by the ACUC
D. Change in species
E. Change in Principal Investigator (PI)
F. Changes that could impact personnel safety
G. Changes in study objectives (In most cases a new ASP should be written)
H. Increase in approved animal numbers

Examples of amendments requiring FCR include, but are not limited to, the following types of changes:

- Exceptions to NIH, ARAC or RML Guidelines or Policies
- Addition of phenotypically abnormal strains or constructs that produce abnormal phenotypes
- Increase in approved animal numbers (>50% increase compared to original ASP)
- Addition of biohazardous/infectious agent, radioactivity or hazardous chemical agents
- Addition of a surgical procedure
- Changes in end point (excluding those that decrease, or have no effect on, pain or distress)
- Changes in USDA category indicating an increase in pain or distress

Procedure

1) PI submits Addendum to ACUC coordinator
2) ACUC coordinator forwards to the ACUC Chair (or Vice Chair) for initial determination of Category.
    a. If determined **Category 1, FCR:** it will be distributed in the committee packets prior to the ACUC meeting.
    b. If determined **Category 1, DMR:** the Chair will select designated reviewer(s) and this information with the Addenda will be sent to all ACUC members. If DMR is unanimously accepted (i.e. no call for FCR within 3 working days) DMR will be performed by the identified ACUC member(s) within 2 working days.
3) ACUC coordinator sends copies of signed (PI, ACUC Chair, AV), approved addenda by email to the PI, ACUC Chair, RMVB and Animal Facility Manager.

Emergency/Expedited Category 1 Changes

Expedited review is reserved for exceptional cases where unforeseen or unavoidable circumstances have led to a situation where either research or animal welfare would be jeopardized by the time it would take to complete the standard review process. The PI must request expedited review from the ACUC Chair.

Procedure

1) PI submits request to ACUC Chair
2) If the request for Expedited Review is granted the PI must submit written request to the ACUC coordinator
3) The Chair will assign select designated reviewer(s) and this information with the Addendum will be sent to all ACUC members
4) If there is no call for FCR within 24 h, the review will be performed as expeditiously as possible, dependent on the urgency of the situation and the PI will receive email notification of the decision
5) ACUC coordinator sends copies of signed (PI, ACUC Chair, AV) approved addendum by email to the PI, ACUC Chair, RMVB and Animal Facility Manager.
6) The specific method of review for the addendum will be documented, along with the outcome of the review, in the minutes of the next ACUC meeting.

Category 2: Conditional Administrative Review (Veterinary Verification and Consultation).

These changes may be approved by the ACUC Chair upon consultation with the Attending Veterinarian (AV).

A. Changes in anesthesia, analgesia, or sedation when consistent with the following:
   - *RML ACUC Guideline on Anesthesia and Analgesia*

B. Changes in method of euthanasia when consistent with the following:
   - *RML ACUC Guideline on Euthanasia*
   - ARAC Guidelines for the Euthanasia of Rodent Fetuses and Neonates
   - ARAC Guidelines for Euthanasia of Rodents Using Carbon Dioxide
   - Other methods of euthanasia that are approved or approved with conditions by the AVMA Guidelines for the Euthanasia of Animals: 2020 Edition

C. Changes in the duration, frequency, type or number of procedures performed on an animal when consistent with the following:
   - *RML ACUC Guidelines for Blood Collection Volumes*
   - *RML ACUC Guidelines for Injection Volumes and Needle Size*
   - Blood sampling method, volume, & frequency consistent with ARAC guidelines http://oacu.od.nih.gov/ARAC/documents/Rodent_Bleeding.pdf
   - Food/water control consistent with ARAC guidelines http://oacu.od.nih.gov/ARAC/documents/Diet_Control.pdf

D. Changes in experimental substances which are not expected to increase pain or distress, change study objectives, impact the approved endpoint criteria or impact the approved personnel safety considerations including:
   - Change in experimental substance within the same class of substance currently approved in the ASP
   - Change in the solvent/diluent/vehicle used with an experimental substance limited to the following:
     - Sterile Water
     - Sterile 0.9% Sodium Chloride
     - Sterile, pharmaceutical grade Phosphate Buffered Saline (PBS)
     - Sterile, Dulbecco's Phosphate Buffered Saline (DPBS)
   - Change in the dose, route and/or frequency of an experimental substance when consistent with the following (as applicable):
     - *RML ACUC Guidelines for Injection Volumes and Needle Size*

E. Changes to Animal Identification when consistent with the following:
   - RML ACUC *Guidelines for animal identification*

Procedure

1) PI submits Addendum to ACUC coordinator
2) ACUC coordinator forwards to the ACUC Chair (Vice Chair) for initial determination of Category. If determined **Category 2,** it will be forwarded to the AV for verification that the proposed changes are in compliance with ACUC policy. The AV will inform the Chair of compliance/non-compliance.
3) The Chair will notify ACUC coordinator of decision.
4) The PI will receive email notification of the decision within 5 working days.
5) ACUC coordinator sends copies of signed (PI, ACUC Chair, AV) approved addenda by email to the PI, ACUC Chair, RMVB and Animal Facility Manager.
6) The specific method of review for the addendum will be documented, along with the outcome of the review, in the minutes of the next ACUC meeting.

Category 3: Unconditional Administrative Handling.

These changes may be approved by the RML ACUC coordinator.

A. Correction of typographical errors
B. Correction of grammar
C. Contact information updates
D. Change in personnel other than PI (T&E form must be included for addition of new personnel)

Procedure

For 3A and 3B,

1) No written request or notification is required. No signatures are required.
2) ACUC coordinator sends corrected/updated copies of the ASP to PI, ACUC Chair, RMVB and Animal Facility Manager

For 3C and 3D,

1) PI submits request for change to ACUC coordinator (RML Addendum form may be used but is not required)
2) For addition of new personnel, the ACUC coordinator will confirm that their training is complete
3) These Addenda can be signed by the ACUC coordinator
4) ACUC coordinator sends copies of addenda by email to the PI, ACUC Chair, RMVB and Animal Facility Manager.

Literature Search

Minor protocol amendments do not require a literature search. Significant protocol amendments may require a literature search. The reasons for literature search are described on the ASP form. If a search is required, at least two databases must be searched.

Please consult the ACUC Chair, the AV or the ACUC Coordinator if you have questions concerning the requirements for a literature search. The RML Librarian can assist you or can perform the search for you.

Approval

The PI, ACUC Chair and the AV must sign all Category 1 and 2 Addenda.

If the Chair is unable to sign, due to conflict of interest or absence, then the duty will fall in order of succession to the Vice Chair and then to the Attending Veterinarian.

If the AV is unable to sign, due to conflict of interest or absence, then the duty will fall to one of the RML clinical veterinarians designated by the AV.

A Safety Representative (the RML Biosafety Officer, the IRF Biosafety Manager, or the RML Associate Biosafety Officer) must sign all Addenda that involve chemicals, new constructs, biohazards or other safety concerns.

Copies of signed approved addenda are sent to the PI, ACUC Chair, RMVB and Animal Facility Manager. Approved addenda are reported to the ACUC at the next meeting. Addenda are numbered sequentially based on the number of the original protocol.

Approved by the RML ACUC 04/23/2015
Revised and Approved by the RML ACUC: 8/27/2015, 05/25/2016, 01/24/2019, 02/27/2020

Assurance#: A-4149-01

April 30, 2020

Date: _____

Institutional Animal Care & Use Committee Roster

Member Name	Degree/Credentials	Position Title	PHS Policy Membership Role	New Member
Olivia Steele-Mortimer	PhD	Principal Investigator	Chair	☐
Dana Scott	DVM, DACVP	Branch Chief	Attending Veterinarian	☐
Redacted by agreement				☐
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ACUC Chair Mailing Address & Phone #: Olivia Steele-Mortimer, PhD
Redacted by agreement

Attending Vet Phone #: Redacted by agreement

NATIONAL INSTITUTES OF HEALTH
Facilities and Animal Species Inventory Table
Assurance Number: A-4149-01

IC Name: National Institute of Allergy and Infectious Diseases/RML

Semiannual Report Submission Date: April 30, 2020

Spring Program Review Date(s):	4/8/20					

Fall Program Review Date(s):						

Bldg/Area/Rm	Facility Insp. Date(s) Spring / Fall		AF/SF; Gross Sq. Ft.	Species Housed			Average Daily Inventory		
Redacted by agreement	3/24/2020		23,000	1 Mice	2 Peromyscus	3 Hamsters	1 6,022	2 122	3 162
				4 Guinea pigs	5 Rhesus NHP	6	4 63	5 7	6
	3/25/2020		8,900	1 Mice	2 Mastomys	3 Guinea pigs	1 471	2 2	3 14
				4	5	6	4	5	6
	3/24/2020		1,600	1 Mice	2 Hamsters	3 Rats	1 863	2 3	3 4
				4	5	6	4	5	6
	3/25/2020		3,000	1 Mice	2 Mastomys	3 Guinea pigs	1 109	2 7	3 7
				4 Swine	5 Cynos (NHP)	6 Rhesus (NHP)	4 1	5 8	6 5
	"		"	1 AGMS (NHP)	2	3	1 8	2	3
				4	5	6	4	5	6

NATIONAL INSTITUTES OF HEALTH
Facilities and Animal Species Inventory Table
Assurance Number: A-4149-01

IC Name: National Institute of Allergy and Infectious Diseases/RML

Semiannual Report Submission Date: April 30, 2020

CONTINUATION PAGE

Bldg/Area/Rm	Facility Insp. Date(s) Spring / Fall		AF/SF; Gross Sq. Ft.	Species Housed			Average Daily Inventory		
Redacted by agreement	3/25/2020		1,600	1 Cynos (NHP)	2 Rhesus (NHP)	3 AGMs (NHP)	1 3	2 9	3 8
				4	5	6	4	5	6
	3/24/2020		1,600	1 Mastomys	2	3	1 143	2	3
				4	5	6	4	5	6
				1	2	3	1	2	3
				4	5	6	4	5	6
				1	2	3	1	2	3
				4	5	6	4	5	6
				1	2	3	1	2	3
				4	5	6	4	5	6