

Meeting Minutes
Institutional Animal Care and Use Committee
340 General Services Building
February 25, 2020

Check if Attending (Members):	Check if Attending (Alternates):
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<input checked="" type="checkbox"/> AV Attending Veterinarian (AV)	<input checked="" type="checkbox"/> / <input type="checkbox"/>
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Non-Voting Members:	<input type="checkbox"/> / <input checked="" type="checkbox"/> / <input type="checkbox"/>
OVPR and RICRO Staff: 3	LAR Residents and Other Guests: 5

Start: The meeting was called to order by the chair at 12:07 PM. A quorum was present and maintained throughout. Any member with a conflict of interest left the room during discussion and/or committee determination on the conflicted item.

End: Meeting Adjourned at 1:53 PM.

Review of Minutes

January Meeting Minutes approved as written.

Business Items

- Proposed revisions to Directions for CO2 Euthanasia of Rodents
IACUC reviewed the changes to the guidance document based on the newly updated AVMA Euthanasia Guidelines (2020) and voted to approve. IACUC website will be updated with new version.

2. Proposed revisions to Animal Transportation Policy
IACUC reviewed the changes to the policy and agreed to discuss during spring seminannual program review to finalize the details. The main item for revision is USDA-regulated animals being transported with LAR input/personal rather than restricting it to LAR vehicles.
3. Update on animal welfare concern with livestock (ag teaching)
The Chair updated the committee on progress made on this concern, final report should be made available at the next IACUC meeting for the committee to discuss.
4. Protocol review process for RIC Tenants
As more RIC Tenants are needing IACUC protocol review and approval, protocol review process for RIC tenants was outlined, and is identical to all other IACUC protocols submitted for review. RIC tenants will pay a fee for any IACUC services they require and how those funds will be spent is up to the committee, typically near end of fiscal year/start of new fiscal year.

Attending Veterinarian (AV) Report

1. USDA inspection report
USDA unannounced inspection occurred January 28-30, 2020. There was one critical citation on the inspection report related to an item that had been self-identified and reported to the IACUC prior to the inspection. USDA also reminded the IACUC that the meeting minutes should include record of attendance and deliberation of meeting items. There will be a new inspector at the next inspection.
2. Goat at ETRC ag teaching)
A goat (companion animal for one of the client-owned horses) had been euthanized after an accident occurred. A veterinarian euthanized the animal promptly and the IACUC agreed that all actions taken were appropriate.
3. Diabetic mice death ; not PHS-funded)
Diabetic mice in 1-2 cages were found dead due to water bottles not being changed out. LAR staff implemented corrective action of labeling cages with diabetic tag so LAR staff will know to monitor water consumption more closely (e.g. water bottle may need to be changed out more frequently.) IACUC agreed that appropriate actions were taken, no further actions required, and consider the matter closed.
4. Final Report on anonymous animal welfare concern (PHS-funded)
The final report on an anonymous animal welfare concern was reviewed by the committee. The IACUC agreed to send a warning letter to the PI related to the protocol noncompliance items, as well as the need for the institution to report these noncompliances to OLAW, as outlined in [NOT-OD-05-034](#). AAALAC will also be notified at the same time, as outlined in [AAALAC FAQ H2](#). The PI has already been in contact with the program officer of the funding agency. Because there were additional concerns related that the IBC reviewed and discussed with the PI, a joint letter between the two committees will be issued. The IACUC that this matter could now be closed out.

PAM Report

The IACUC was informed of the past month's post-approval monitoring (PAM) reviews. Protocol information was reviewed during PAM reviews and minor adjustments were discussed based on current activity. Where appropriate, amendments will be submitted by PIs in a timely fashion to ensure approval is secured prior to start of the new/amended activities.

Protocols for Review

1. – MedShape - Development of a dynamic compression fusion device for lower extremity salvage of the diabetic foot (Called to FCR)
The IACUC unanimously voted to approve with the following administrative clarifications:
 - Clarification on surgical procedure details
2. Pilot study of a PGA kevlar woven hydrogel for meniscal replacement in an ovine meniscectomy model (Called to FCR)
The IACUC unanimously voted to approve this protocol as written.
3. – Pharmacology Shared Resource (PharmSR): Safety and Pharmacokinetic Studies
The IACUC unanimously required the following modifications to the protocol prior to approval:
 - Clarify pain categorization
 - Clarify body weight and morbidity scoring document(s) that will be used
 - Clarify funding source
4. – Prenatal Glucocorticoids and Autonomic Dysregulation in adulthood.
The IACUC unanimously required the following modifications to the protocol prior to approval:
 - Clarify animal transfer information
 - Clarify euthanasia methods that will be used
 - Clarify monitoring and drug administration duration
 - Clarify humane endpoints information
 - Clarify animal numbers being requested
 - Clarify collaborator information and typos
5. – Mycobacterium ulcerans transmission by sandflies
The IACUC unanimously voted to approve with the following administrative clarifications:
 - Add IBC approval information
 - Clarify monitoring frequency and duration
 - Clarify humane endpoints for one group
6. – Therapeutic targeting of inflammatory diseases.
The IACUC unanimously required the following modifications to the protocol prior to approval:
 - Clarify animal numbers being requested in total as well as in each experiment
 - Clarify blood collection limits and when/how often it will occur during this study

- Clarify drug formulation information and possible side effects
 - Add a procedure and how frequently that procedure will occur during the study
 - Clarify how attached documents will be used during this study
 - Clarify procedure details and when it will occur in relation to other procedures
 - Clarify literature searches that were performed
7. – New Drugs for Nontuberculosis mycobacterium (NTM) lung disease in patients with cystic fibrosis (4th year renewal of 17-7198A)
The IACUC unanimously required the following modifications to the protocol prior to approval:
- Provide a brief summary of the previous 3 years of work that was done and how it informs the next 3 years of work
 - Clarify if an experiment will occur that requires additional blood collection
 - Clarify pain categorization and monitoring/humane endpoints information
 - Redo literature searches
 - Update euthanasia method information
 - Clarify if an experiment is occurring and if applicable, add the relevant procedure
8. – Host range studies: 2019-nCoV
The IACUC unanimously required the following modifications to the protocol prior to approval:
- Add state/federal permit information
 - Elaborate on the choice of species required for this study
 - Elaborate on PI's experience with this disease model in rodents
 - Clarify humane endpoints information

Protocol Actions to be Read into Minutes

Continuing Reviews Approved by Designated Review

1. – The Andrea D. Lauerman Specific Pathogen Free Feline Research Colony
2. – Understanding elephant movements as a means to manage and prevent Human-Elephant Conflict
3. - Triploid Walleye: a new frontier for managing coolwater predators in the West
4. - Virulence of Environmental Isolates of Burkholderia pseudomallei
5. - Bacterial Coldwater Disease and Whirling Disease - Dual Infection
6. – Avian Handling Wet Laboratory for ZMS Symposium
7. - FW 400 Conservation of Fish in Aquatic Ecosystems
8. – the effects of feeding frequency and feed type on growth and reproduction in zebrafish (Danio rerio)
9. -Efficacy Evaluation of Novel Therapeutics against Biodefense Pathogens
10. – Global Food Innovation Center Humane Animal Handling and Stunning
11. - Effects of light level and surface roughness on the passage success of plains fishes in rock ramp fishways
12. - Evaluation of a Coxiella vaccine in mice
13. - Temporal covariation in vital rates of lesser scaup (Aythya affinis) and management implications
14. - Equine Advanced Procedures Laboratory
15. - Canine High Altitude Oxygen System Testing with Canine Descent from Altitude Hearing Impact Investigation

16. - Combatting natural resistance and persistence in non-TB mycobacterial disease
17. - Evaluation of a liposome-TLR complex for stimulating corneal wound healing in a rabbit model.
18. - Genome-wide association studies of performance and behavioral traits in Angus cattle
19. - Teaching data set - Dairy cattle microbiomes sampled from Aurora Organic Dairy, Colorado
20. - Replication ratios as a measure of *M. tuberculosis* viability in mice
21. - Equine Oocyte Collection

Protocols Approved by Designated Review

1. - Evaluation of smallmouth bass and northern pike management in the middle Yampa River
2. - CSU VTH Livestock Teaching Animals 2020-2023
3. - Standard animal husbandry techniques protocol for Agricultural Research, Development and Education Center (ARDEC)
4. - Multi-species mechanisms of drug bio-distribution in HIV tissue reservoirs
5. - Investigation of an alfalfa based pellet fed to horses in training and evaluating the development of equine gastric ulcer syndrome
6. - PK and Efficacy Study of Mirtazapine in Guinea Pigs
7. - Ectoparasites of Ugandan bats
8. - The role of non-coding RNAs in brain aging and memory performance in mice
9. - Mother to Offspring Transmission of Chronic Wasting Disease
10. - Injectable Anesthesia in Microbats
11. - Feasibility of Thin Film Nitinol (TFN) implants for articular cartilage and bone incorporation in a rabbit model
12. - SinuTech- The Effect of Use of a Novel Wound Healing Spacer Post Sinus Ostia Surgery in an Ovine Model
13. - Breeding colony for in vivo studies and viral pathogenesis and gene therapy
14. - A Novel Approach to Diagnosing and Treating Nerve Entrapment in Hindlimb Proximal Suspensory Desmopathy
15. - Development of a novel intervertebral disc degeneration model through tailored vaccination to promote a local immune response

Protocols Approved at Previous IACUC Meeting

None

Protocols Approved After Modification

1. - Population Monitoring of Northern Spotted Owls in Northwest California (4th year renewal of)
2. - Efficacy Assessment of Epetraborole against *B. pseudomallei*

Approved Amendments

Item #	Protocol #	Protocol Title	Change
1		Vaccine induced memory immunity in tuberculosis	Add procedure
2		Viral mediated identification of ovine cells involved in the hypothalamic-pituitary-gonadal access	Add pilot study
3		FW402 - Fish Culture	Add procedure
4		Topical proprietary biologic to treat oral mucositis	VVC; A

5		Investigating Placental Function in Sheep using Gene Knockout and Knockdown.	Disposition
6		ISGs in the Corpus Luteum Are Necessary For Maintenance Of Pregnancy In Ruminants	VVC; E
7		ISGs in the Corpus Luteum Are Necessary For Maintenance Of Pregnancy In Ruminants	Add personnel
8		Investigating Placental Function in Sheep using Gene Knockout and Knockdown.	Add personnel
9		Understanding elephant movements as a means to manage and prevent Human-Elephant Conflict	VVC; K (i)
10		Alveolar Macrophages as Sentinels of Osteosarcoma Pulmonary Micrometastasis	Add personnel
11		Immune Mechanisms of Protection Against Mycobacterium tuberculosis	Modify personnel
12		Role of nuclear receptors in nutritional and metabolic risk for tuberculosis	Modify personnel
13		Beef Improvement Center--Rouse Ranch	Add personnel
14		Preclinical testing of inhaled clofazimine in murine TB model	Add procedure
15		AN EQ 250: Live Animal and Carcass Evaluation	Change PI, add personnel
16		Bone marrow aspirate concentrate with senotherapeutic flavonoid to improve articular cartilage repair	VVC; E, F
17		Effects of MERS-CoV NS4a and NS4b mutants on Jamaican fruit bats	Add animals, modify procedures
18		Investigating the therapeutic potential of parthenolide for hematopoietic neoplasms in dogs	Add procedure
19		Percutaneous DRG Lead Implantation and Stimulation with Varying Wave Forms	Add procedure
20		CSU Student Chapter of the American Association of Equine Practitioners (SCAAEP) IACUC Protocol	Add animals
21		Junior Surgery Laboratory VM786V	Add personnel
22		ORC Holding Protocol	Add personnel
23		AcuTive Technologies - Sheep ACL repair study for the evaluation of tissue biocompatibility and efficacy of citrate based composite formulations	VVC; F, iv.
24		Breeding GM-CSF KO mice to be used in inhalation studies	Add personnel
25		Tailoring modifications of polysaccharides in Mycobacterium tuberculosis	Add personnel
26		Combined host directed therapy and chemotherapy for TB	Add personnel
27		Cortical-Medullary Circuitry Preventing the Cardiovascular Consequences of Chronic Stress	Housing location
28		Prefrontal Cortical Circuitry Attenuates Cardiovascular Stress Reactivity	Housing location
29		Regulation of Neuron Function	Add/modify procedures

30		Investigating the therapeutic potential of parthenolide for hematopoietic neoplasms in dogs	Add personnel
31		Development of a Mouse Hemangiosarcoma Model	Add personnel
32		Novel Bone-Targeting Combination Therapy for Osteosarcoma Phase II	Add personnel
33		Novel Bone-Targeting Therapy for Osteomyelitis	Add personnel
34		Development of Chimeric Antigen Receptor T cell Immunotherapy for Canine Malignancies as a platform for testing novel human CAR constructs	Add personnel
35		Advanced Small Animal Models for the Testing of Candidate Preventive Intervention Against Mycobacterium tuberculosis A28	VVC; F
36		Cytex - GLP Woven Acetabular Implant Study in a Goat Hip Model	Add procedure
37		Clinical Development of the Novel BisEDT Antibiotic for CF Lung Infections	Add animals
38		- Investigation of a granulated antibiotic bone void filler (ElutiBone) in an in vivo ovine distal femoral defect model	Add animals
39		FW402 - Fish Culture	Add animals
40		Zetagen Therapeutics, Inc - Evaluation of Naloxone in a rabbit model of postero-lateral fusion	VVC; A
42		Promote Salivary Gland Regeneration using Therapeutic Delivery of Cevimeline	Add animals
43		- Model development of subchondral bone edema	Add animals
44		Functional MRI data acquisition in dogs and cats before and after acupuncture	VVC; A, Add personnel
45		Quasispecies dynamics in arbovirus persistence emergence and fitness - 2016 Renewal	Add personnel
46		Evaluation of a liposome-TLR complex for stimulating corneal wound healing in a rabbit model.	VVC; F,iv.
47		Invasive Fish Passage and Connectivity Assessment to Restore the Largest Greenback Cutthroat Trout Meta-population in the Long Draw Region (CO)	Add animals, locations
48		Examining Causes and Treatments of Obesity-Related Vascular Dysfunction	Add personnel
49		Bone marrow aspirate concentrate with senotherapeutic flavonoid to improve articular cartilage repair	Add personnel

IACUC Waiver Review: Veterinary Clinical Studies (VCS)

Item #	VCS #	Project Title	Status
1		Pet First Aid Day	New
2		Study to Evaluate the Safety and Efficacy of Rabacfosadine, Vincristine, Cyclophosphamide, Doxorubicin and Prednisone in Dogs with Untreated Lymphoma	New

3		Evaluating Proteinuria Magnitude, Trends and Persistence During Treatment of Selected Inflammatory Diseases in Canines	New
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Additional IACUC Waiver Review

Item #	Waiver #	Project Title	Status
1	2	Shemya Island Alaska Population Monitoring of Arctic Foxes	New
2		At-Home Counterconditioning: Creating Positive Experiences for You and Your Pets	New
3		Student project - Scent visitation by vertebrates in a desert ecosystem	New

**Institutional Animal Care and Use Committee (IACUC)
Protocol Activities February 24 – March 20, 2020
(March 24, 2020 Meeting Cancelled)**

Review of Minutes

None

Business Items

Due to COVID-19 pandemic, relevant items postponed to April IACUC meeting.

Attending Veterinarian (AV) Report

None

PAM Report

None

Protocols for Review

No protocols called to FCR. Modified multiple DMR protocol review process implemented (via email) for applicable protocols.

Protocol Actions to be Read into Minutes

Continuing Reviews Approved by Designated Review

1. - Asahi Pharma -A Study evaluating the effects of the poly lactic-co-glycolic acid microspheres incorporated with AK1320 on spinal fusion in an ovine instrumented posterolateral lumbar fusion model
2. - Breeding colony of Diet Induced Obese Prone Rat
3. - Rift Valley fever virus: Experimental infection of select North American wildlife
4. - Vaccine efficacy for biodefense pathogens
5. - Cytex Therapeutics - Caprine Hip Cartilage Regeneration with Tunable Inflammation Resistance
6. - Tissue Engineering Strategies for Promoting Rapid Fracture Healing in Osteoporotic Bone
7. - Hamster Model for Leishmaniasis
8. - Angiocrine - Evaluation of engineered endothelial cells for the treatment of intervertebral disc degeneration
9. - Breeding Colony for ADF/cofilin rod studies in neurodegeneration
10. - Assessing the vulnerability of white-tailed ptarmigan to climate change
11. - Burkholderia pseudomallei: Evaluation of Post-Exposure Prophylaxis (PEP) Regimens for Laboratory Exposure
12. - Anthrax Vaccine Efficacy Against Diverse Strains of Bacteria
13. - Validating inactivation of tissues from animals infected with Select Agents
14. - Demographic & Physiological Monitoring of the Colorado Checkered Whiptail on Fort Carson: An Integrated Conservation Approach
15. - Promote Salivary Gland Regeneration using Therapeutic Delivery of Cevimeline
16. - Integration and recellularization of microparticles repair of tissue defects
17. - Polyclonal Antibody Production
18. Teaching activities with fistulated bovine
19. - Experimental Testing of Novel Therapeutic against Non-tuberculosis Mycobacteria
20. - Kinetics of bluetongue virus coinfection and duration of viremia infectious to Culicoides sonorensis in virus-infected sheep.
21. - Neuroinflammation and developmental vulnerability to manganese toxicity

22. - Human lung cancer xenograft pilot study in mice
23. - Standard animal husbandry techniques protocol for Eastern Colorado Research Center (ECRC).
24. - T cell responses to CD1-restricted lipids in tuberculosis
25. - Identifying drivers of social, spatial and demographic processes in wild elephants
26. - Testing gun shot detection sensor radio collars on African elephants
27. - An ultrasensitive in vivo latent HIV viral outgrowth assay using humanized mice.

Protocols Approved by Designated Review

1. - Zoology Club Meetings/RAM Welcome
2. - Cardiopulmonary and sedative effects of an intramuscular combination of acepromazine, dexmedetomidine, hydromorphone with and without glycopyrrolate before inhalant anesthesia in healthy dogs
3. - Effects of nutrition on performance and carcass characteristics of Wagyu feedlot steers
4. - Use of Cow-Manager motion sensing ear tags as a proxy for measuring feed intake
5. - Broadly neutralizing single chain antibodies to coronaviruses
6. - Effects of dissolved oxygen on juvenile burbot growth and performance
7. - CollaMedix - Collagen-based tissue guidance biofabric for treatment of stress urinary incontinence
8. - Blood collection from bovine for ex vivo studies
9. - Experimental fisheries research
10. - Replacement Steers---Inoculum (rumen fluid) donor, in situ fermentation, and ingested feed sampling of fistulated bovine
11. - Development of Orthopedic Wearable Technology
12. - Properties of the developing heart that mediate its biomechanical environment

Protocols Approved at Previous IACUC Meeting

None

Protocols Approved After Modification

1. - Host range studies: 2019-nCoV
2. - Mycobacterium ulcerans transmission by sandflies
3. - Prenatal Glucocorticoids and Autonomic Dysregulation in adulthoods

Approved Amendments

Item #	Protocol #	Protocol Title	Change
1		Transgenic Mouse Breeding Colonies	Add personnel
2		Estrogen and the regulation of the hypothalamo-pituitary-adrenal axis	Add personnel
3		SPR720 combination treatment against Mycobacterium avium in new C3HeB/FeJ model	Add Animals
4		OBRL R01 - Early detection and prediction of complex bone fracture healing: Metatarsal Plate and Nail	Add procedures
5		- Evaluation of a liposome-TLR complex for stimulating corneal wound healing in a rabbit model	Add personnel
6		A Novel Acellular Treatment for Impant-Associated Osteomyelitis	Add Animals

7		One-year Duration of Immunity Study in Ferrets to Demonstrate the Efficacy of a Rabies Vaccine	Add Animals
8		Junior Surgery Laboratory VM786V	Add procedure
9		The pharmacokinetic interaction between cannabidiol and phenobarbital in dogs	VVC; E
10		Functional MRI data acquisition in dogs and cats before and after acupuncture	VVC; E
11		Effects of Meloxicam on Pain Biomarkers at Branding	VVC; C
12		Temperature Response Evaluation of the Stimulation Electrode from an SCS Lead to Deposited RF Power in an Ovine Model	VVC; F, iv.
13		Characterization of Zebrafish Models of Filamin C Cardiomyopathy	Add personnel
14		Evaluation of a liposome-TLR complex for stimulating corneal wound healing in a rabbit model.	VVC; C, i.
15		Bat antibody responses to recombinant rabies virus antigens	Add procedure
16		Effects of Meloxicam on Pain Biomarkers at Branding	Add personnel
17		Development of Placental Glucose Transport Deficiency in an Animal Model	VVC; G, i.
18		Alveolar Macrophages as Sentinels of Osteosarcoma Pulmonary Micrometastasis	Add procedure
19		ADF/cofilin-actin rods in neurodegenerative diseases	Add personnel
20		Breeding Colony for ADF/cofilin rod studies in neurodegeneration	Add personnel
21		PrPC- and NOX-dependent signaling in dementia	Add personnel
22		Examining Causes and Treatments of Obesity-Related Vascular Dysfunction	Add personnel
23		Vascular, ventricular, and hemodynamic characteristics of pulmonary hypertension	Add personnel
24		Preclinical testing of inhaled clofazimine in murine TB model	Add procedure, add animals
25		Development of a novel intervertebral disc degeneration model through tailored vaccination to promote a local immune response	VVC; C, iv.
26		Temperature Response Evaluation of the Stimulation Electrode from an SCS Lead to Deposited RF Power in an Ovine Model	Modify personnel
27		Cytex - GLP Osteonecrosis Study in a Goat Hip Model	VVC; A
28		TB Drug Accelerator: TB Mouse in vivo Models	Personnel, procedure updates
29		Tria: Immunogenicity of M2e constructs for Influenza B virus in ferrets	Add animals
30		Avirulent Arthroconidial Vaccine Candidate to Prevent Human Coccidioidomycosis	Add animals
31		Equine Oocyte Collection	Add personnel, typographical correction
32		Assessing vector-borne disease risk in an agricultural community in Guatemala: a One Health study	Add funding, personnel, update species

33		Role of nuclear receptors in nutritional and metabolic risk for tuberculosis	Add animals
34		Study 3: Optimizing Novel Immunotherapy Combinations Targeting the Tumor Microenvironment in Canine Spontaneous Osteosarcoma	Add animals
35		Feasibility of Thin Film Nitinol (TFN) implants for articular cartilage and bone incorporation in a rabbit model	Add personnel
36		Effects of MERS-CoV NS4a and NS4b mutants on Jamaican fruit bats	Add personnel
37			

IACUC Waiver Review: Veterinary Clinical Studies (VCS)

Item #	VCS #	Project Title	Status
1		Phonocardiographic analysis of heart murmurs in dogs	New
2		Development and optimization of a novel 3D culture system for the growth of oviductal and endometrial organoids in dogs for the first time to facilitate successful in vitro oocyte maturation and prevention of endometritis and pyometra in bitches	New
3		Developing Metabolite signatures/Using systems biology approach in long bone injury patients to reveal novel therapeutic-immune targets	New
4		Validation of an innovative contrast subtraction technique to detection equine bone marrow lesions on CT	New

Additional IACUC Waiver Review

Item #	Waiver #	Project Title	Status
1		Shared Vision, Future Solutions A Pilot Study on the Impact of Coloration with Human-Elephant Conflict Mitigation Tools in Thailand and Cambodia	New
2	NA	Home Range Size and Habitat Use of Ferruginous Hawks in Western Wyoming.	Needs a protocol
3		Delta Waterfowl First Hunt	New

Meeting Minutes
Institutional Animal Care and Use Committee
Online Meeting (Microsoft Teams)
April 28, 2020

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<input type="checkbox"/> , Alternate-at-Large	*non-voting at this meeting
Non-Voting Members:	<input type="checkbox"/> / <input type="checkbox"/> / <input type="checkbox"/>
OVPR and RICRO Staff:	LAR Residents and Other Guests:

Start: The meeting was called to order by the chair at 12:00 PM. A quorum was present and maintained throughout. Any member with a conflict of interest left the room during discussion and/or committee determination on the conflicted item.

End: Meeting Adjourned at 2:25 pm

Review of Minutes

None

Business Items

- Report on animal welfare concern with livestock (ag teaching)
The committee discussed this report at length and agreed that the animals were cared for appropriately, there were no animal welfare concerns, the claims could not be substantiated, and noted that the minor protocol noncompliances had been corrected with an amendment (personnel updates and facility addition). The IACUC agreed that there were significant communication issues underlying this concern, and those issues were outside the committee's purview. The IACUC agreed to send a letter to the PI and department head, providing suggestions to improve documentation of the daily and veterinary care of the animals. The IACUC considered this matter closed.

2. FYI: Pandemic plan for IACUC business processes
RICRO IACUC Staff is working on a pandemic plan for CSU IACUC business processes, to clarify what would happen during a pandemic.
3. Kuali Protocols (KP) and Animal Management System (AMS) update: go-live date is May 21, 2020. May FCR protocols will be entered into KP so researchers will be given access prior to the go-live date for this to occur. KP will also be opened up to people needing to submit May continuing reviews and 4th year renewals. RICRO IACUC KP and AMS help website will be created to include FAQs and help documents.
4. [NASA MOU with OLAW](#)—moving forward, grant to protocol congruency review will be required for NASA funded protocols, similar to what is done for PHS, NSF, and VA funded studies.
5. Semiannual Program Review: (subcommittee:)
 - a. Facility Inspection Findings (and discuss plan for inspections that still need to occur)
 - b. Programmatic Checklist
 - c. Memo to IO Updates
 - d. Policy updates—proposed revisions to Animal Transportation Policy

The subcommittee reviewed the materials and agreed on the proposed changes to the documents to be presented at the May IACUC meeting for final review/approval.

Attending Veterinarian (AV) Report

IACUC agreed that for the following items, appropriate actions were taken, no further actions required, and they consider the matters closed.

1. One cage of mice found without food and one mouse of four found dead in cage.
2. Found mouse on dirty side cage wash. PI notified and euthanized. Not reportable, in good condition, found same day, euthanized.
3. Dog died unexpectedly related to Babesia infection likely resulting in a cardiac arrhythmia and death.

PAM Report

The IACUC was informed of the past month's post-approval monitoring (PAM) reviews. Protocol information was reviewed during PAM reviews and minor adjustments were discussed based on current activity. Where appropriate, amendments will be submitted by PIs in a timely fashion to ensure approval is secured prior to start of the new/amended activities.

Protocols for Review

1. – Biologically Regulated Marrow Stimulation by Blocking Fibrosis with Oral Administration of Losartan and Elimination Senescent Cells with Fisetin to Improve Articular Cartilage Repair of Ankle Joints
The IACUC unanimously required the following modifications to the protocol prior to approval:
 - Update lay summary with lay language
 - Clarify procedure and post-operative information
 - Reconcile animal numbers, project overview, and procedure details for consistency
 - Update attachments

2. – Musculoskeletal Effects of Equine Blood Flow Restriction Training: A Translational Investigation
The IACUC unanimously required the following modifications to the protocol prior to approval:
 - Clarify procedure details
 - Clarify study objective
 - Clarify final disposition of animals
 - Justify inclusion of additional procedure
3. – CEPI: Immunogenicity, Safety, and Efficacy of DDVax Rift Valley Fever Vaccine
The IACUC unanimously voted to approve with the following administrative clarifications:
 - Correct typos
 - Clarify monitoring frequency
 - Clarify breeding information and final disposition of animals
4. – Toxicity and body tissue concentrations in rodents that consume fibronil-containing baits
The IACUC unanimously required the following modifications to the protocol prior to approval:
 - Clarify procedure information
 - Clarify personal protective equipment donned by personnel
5. – Pain recognition and management in laboratory animals
The IACUC unanimously required the following modifications to the protocol prior to approval:
 - Provide additional information on animal numbers justification
 - Clarify surgical information in relevant procedures
 - Clarify procedure information
 - Reconcile procedures with project overview, including clarify treatment groups
 - Update personnel
6. – Understanding intraspecific variation in boreal toad response to amphibian chytrid fungus (4th year renewal of)
The IACUC unanimously required the following modifications to the protocol prior to approval:
 - Clarify sample sizes
 - Provide summary of previous years work, how this builds upon it
 - Clarify personnel information
 - Clarify husbandry information

Protocol Actions to be Read into Minutes

Continuing Reviews Approved by Designated Review

1. CSU ARDEC Beef Seedstock Annual Bull and Female Sale and Preparations
2. - VOC Analysis in Rabbits with Tularemia
3. - PKC-theta Activation Drives Autoimmunity in Type 1 Diabetes
4. - Training Personnel in Procedures with Laboratory Animals
5. - Ultrasound Rotation and Junior Practicum Elective for PVM Students and Advanced Veterinary Ultrasound for Veterinarians
6. - Cervid PrP Transgenic (Ctg) Mouse Colony
7. - Study 2: Optimizing Novel Immunotherapy Combinations Targeting the Tumor Microenvironment in Canine Spontaneous Osteosarcoma

8. - BVDV Infection Compromises Fetal Immune Organ Development Leading to Post-natal predisposition to secondary Infections
9. - Immunizing wild bats: Proof of concept
10. - Hypothalamic Circuits Regulating Energy Balance and Obesity: Synaptic Physiology and Opioid Regulation
11. - Molybdenum water concentration and beef cattle performance
12. - Waterfowl Productivity in a Flood-Irrigated System
13. - Teaching Population and other Natural Resource Measures with Fish
14. - Breeding Colony CBA Sfp1 mCh mice
15. - Aerosol Spectinomide-1599 Therapy Against Tuberculosis
16. - Innate Immunity: Antimicrobial Peptides and Sepsis
17. - Immunizing Alpacas with recombinant prion protein for polyclonal antibody generation
18. - Baseline mineral measurements for cattle raised in Grand County, Colorado
19. Evaluation of Novel Ocular Immunotherapy for Safety in Mice
20. - Assessment of inducible pluripotential stem cell (iPC) growth and differentiation in Severe combined immunodeficient (SCID) mice.
21. - Fads2 and Cardiometabolic Health
22. - Physiological Ramifications of Chorionic Somatomammotropin Deficiency
23. - Transmission of Renibacterium salmoninarum in Colorado Native Greenback Cutthroat Trout
24. - Dengue viral infection, immunity and insect transmission in humanized mice
25. - NASA Specialized Center of Research on Radiation Carcinogenesis
26. - Prenatal glucocorticoids and fetal programming of metabolism
27. - The pharmacokinetic interaction between cannabidiol and phenobarbital in dogs
28. - Dose finding and safety of chronic administration of cannabidiol in dogs with intractable idiopathic epilepsy
29. - PSRL - Development of a clinical relevant ovine chronic rotator cuff tear model: Phase 2
30. - Safety of a focal hyperthermia induction system within soft tissue structures
31. - Anti-Viral drug testing in humanized mice
32. - Zika Virus Pathogenesis Therapies in Humanized Mice
33. - Mayaro virus: Pathogenesis and Immune Responses of Hamsters
34. - InGeneron - Evaluation of adipose derived mesenchymal stem cells for the treatment of acute tendon injury in a rabbit model
35. - Susceptibility of Jamaican fruit bats to H18N11 influenza virus
36. - Evaluation of a Bio-Integrative Bone Anchor in a Unilateral In-Vivo Ovine Interference Model
37. - Investigations into the transmission, shedding and pathology of Zika virus
38. - Functional MRI data acquisition in dogs and cats before and after acupuncture
39. - Assessing the effect of no CIDR use in a Co- Synchron synchronization protocol
40. - Pathogenesis of SFTS virus infection in domestic animals
41. - RoL:FELS:EAGER: Landscape Phenomics: Predicting vulnerability to climate change by linking environmental heterogeneity to genetic and phenotypic variation
42. - Safety and Effectiveness of a Flow-Through Device for the Capture of Circulating Tumor Cells in Dogs
43. - Efficacy of Northern Front Range Fish Passage Structures
44. - Description of the auditory tube ossicles in healthy cats and dogs

Protocols Approved by Designated Review

1. - Prenatal Glucocorticoids and Autonomic Dysregulation in adulthood.
2. - Cytomegalovirus as a risk factor for exacerbation of Mycobacterium tuberculosis infection
3. - Characterizing the influence of trace mineral source and diet type on nutrient digestion and mineral availability in beef cattle.
4. - FW405 + FW605 Fish Physiology Courses
5. - Formae - Focal articular cartilage resurfacing using CyborGel™ GelPlug Implant
6. - Establishment of Small Animal Models for Screening MCMs for the 2019 Novel Coronavirus (SARS-CoV-2)
7. - Interstitial Fluid Collection for Monitoring of Infectious Diseases
8. - UQ Vaccines: Efficacy against SARS-CoV-2
9. - Collagen Matrix- Implantation of a collagen-based meniscus: an investigation in the sheep
10. - MTF: The functional efficacy of decellularized xenografts for muscle regeneration in a rat defect model
11. - Antiviral therapy for COVID-19
12. - The connection between brant life-history and migration strategies in changing environments
13. - The Use of Altrenogest Releasing Intravaginal Rings in the Mare
14. - Preclinical Study of Colibri Transcatheter Aortic Valve Replacement System in a Porcine Model
15. - Monitoring populations of little brown bats: maternity colony population dynamics, White Nose Syndrome surveillance, diet, and roost use.
16. - Breeding colony of rats artificially selected for intrinsic aerobic endurance running capacity
17. - Determination of the role of intrinsic aerobic endurance running capacity in determining resistance to the development of breast cancer
18. - Veriprime Protocol
19. - Radiocesium Concentration Ratios for Japanese Eels (*Anguilla japonica*) and Conger Eels (*Conger myriaster*)
20. - Evaluation of MPL compounds and Oxazolidinones against *M. abscessus* in a SCID mouse infection model.
21. - Blocking alphavirus infection with anti-receptor antibodies
22. - Breeding Protocol for Lab Mouse Colony
23. - A pilot study to validate use of a novel intra-operative imaging device (to detect neoplastic vs. non-neoplastic cells in the resection bed) during
24. - Demonstration of a lactate threshold test on the treadmill for ANEQ 325
25. - Medtronic- Preclinical Evaluation of Marrow Cellution Needle Compared to the BioCUE Centrifuge System
26. - Evaluation of cytokines in normal equine tears by multiplex analysis: a pilot study
27. - Biocompatible Nanostructured Interfaces for Tissue Engineering Applications
28. - ORC Holding protocol
29. - Monitoring effects of Flaming Gorge Dam releases on the Lodore and Whirlpool Canyon fish communities
30. - SARS-CoV-2 infection of immunosuppressed bats
31. - Native Plains Fish Refuge Population
32. - Breeding of Rab32 mutant mice and Isolation of megakaryocytes from mouse bone marrow for dense granule studies

33. – Zetagen Therapeutics, Inc - Evaluation of ZetaFuse in a Rabbit Model of Posterolateral Fusion
34. – Novel pulmonary treatments against isolated nontuberculosis pulmonary disease.

Protocols Approved at Previous IACUC Meeting

To be included in May IACUC Meeting Minutes

Protocols Approved After Modification

To be included in May IACUC Meeting Minutes

Approved Amendments

Item #	Protocol #	Protocol Title	Change
1		Blood and nasal swab collection from bovine for ex vivo studies	Add personnel, add procedure
2		A versatile transkingdom platform for therapeutic nucleic acid delivery to mucosal epithelial tissues	Add procedure
3		The Feasibility and Safety of Radiofrequency Nerve Ablation of the Deep Branch of the Lateral Plantar Nerve in Horses	VVC
4		Host range studies: 2019-nCoV	Add animals
5		Effects of MERS-CoV NS4a and NS4b mutants on Jamaican fruit bats	Add animals
6		A versatile transkingdom platform for therapeutic nucleic acid delivery to mucosal epithelial tissues	Add animals, update personnel and procedures, add new funding
7		Evoke Medical- Development of an Osteoconductive Spinal Fusion Implant for Enhanced Fusion Rates: Phase II SBIR	Add animals, procedures
8		RoL:FELS:EAGER: Landscape Phenomics: Predicting vulnerability to climate change by linking environmental heterogeneity to genetic and phenotypic variation	Add animals
9		ANEQ 300 A (Topics in Animal Sciences: Livestock Handling) and ANEQ 366 (Animal Welfare Evaluation)	Add animals, procedures
10		Experimental development of bone marrow lesions in a rat model	Add animals, procedures
11		Polyclonal Antibody Production	Add personnel
12		Kv2.1 membrane clusters: Regulators of ER/PM junctions	Add funding
13		Experimental development of bone marrow lesions in a rat model	VVC; F
14		Polyclonal Antibody Production	VVC; F, ii
15		Equine reproduction instruction of veterinary students, resident, graduate student, and undergraduate students as well as Front Range Community College veterinary technician students, veterinarians and horse owners in continuing education courses	Remove personnel
16		Antiviral therapy for COVID-19	VVC; B, f
17		Effects of nutrition on performance and carcass characteristics of Wagyu feedlot steers	Admin; K, O
19		Antiviral therapy for COVID-19	VVC; C

20		Role of nuclear receptors in nutritional and metabolic risk for tuberculosis	Add procedure
21		The Andrea D. Lauerman Specific Pathogen Free Feline Research Colony	VVC; H
22		Anthrax in feral pigs: Pathogenesis and immune responses	Add funding
23		Antiviral therapy for COVID-19	VVC; C, i
24		Evaluation of cytokines in normal equine tears by multiplex analysis: a pilot study	VVC; A
25		Beta amyloid-induced hippocampal network dysfunction via selective inhibition of nicotinic acetylcholine receptors in interneurons	Title change, Add funding
26		Effects of MERS-CoV NS4a and NS4b mutants on Jamaican fruit bats	Add animals, modify procedures
27		Effects of protein restriction on Jamaican fruit bat immune responses to virus-like particles expressing Nipah virus antigen	Add animals, modify procedures

IACUC Waiver Review: Veterinary Clinical Studies (VCS)

Item #	VCS #	Project Title	Status
		To be included in May IACUC Meeting Minutes	

Additional IACUC Waiver Review

Item #	Waiver #	Project Title	Status
		To be included in May IACUC Meeting Minutes	

General Info

Committee Name	Type	Lead Unit	Status	Date
CSU IACUC (DMR and FCR)	IACUC	CO-UNIV	Held	May 26, 2020
Location	Start Time	End Time		
Microsoft Teams (online)	12:00 PM	01:00 PM		

Committee Attendance

Name	Title	Can Vote	Attendance
	Chair	✓	Present
	Ex Officio	✓	Absent
	Alternate	✓	Present
	Member	✓	Present
	Member	✓	Present
	External	✓	Absent
	Member	✓	Absent
	Member	✓	Absent
	Member	✓	Present
	Alternate	✓	Absent

Name	Title	Protocols	
		Can Vote	Attendance
	Alternate	✓	Absent▼
	Alternate	✓	Absent▼
	Alternate	✓	Present▼
	Alternate	✓	Absent▼
	Alternate	✓	Absent▼

Agenda Notes

Meeting Minutes

1. --February 2020 Meeting Minutes (goat item was updated for accuracy)

Attachment: 2020_02_IACUCMinutesDraft.docx

NOTES:

May IACUC Meeting: --Start time 12:05pm --End time: 1:15pm February 2020 meeting minutes: approved the updated version as written.

2. --March 2020 Protocol Activities

NOTES:

Approved as written (March 2020 protocol activities document included in item #3 below).

3. **Attachment:** Updated_MeetingDocs_05262020.pdf

Business Items

1. Kualu Protocols (KP) Implementation and closure of eProtocol

NOTES:

FYI status update on implementation process.

2. IACUC Summer Vacation

NOTES:

Clarification--this is not a vacation. Rather, the IACUC agreed to cancel June and July monthly meetings and to handle protocols that typically went to FCR, via DMR. These protocols will be reviewed at anytime during the month and the entire committee will have the chance to submit comments for the PI to address. After the PI responds to the reviewers' comments, the updated protocol will go back out for DMR to finish out protocol review, e.g. the typical DMR process. This will facilitate efficient review of IACUC protocols (in particular COVID-19 studies) during the pandemic while many are trying to work remotely.

3. Spring 2020 Semiannual Report: --Memo to the IO --Program Review Checklist --Facility Inspection Findings (added ARDEC and FFL since program review) --Animal Transportation Policy--Revised

NOTES:

--IACUC reviewed and approved all Spring 2020 Semiannual documents and recommend sending the final report to the IO. --IACUC reviewed and approved the revised Animal Transportation Policy and recommend to IO for signature. RICRO IACUC staff will update the website with the revised policy once it has been signed by the IO.

4. Postponed Facility Inspections: (will be included on fall 2020 inspection documents)

NOTES:

IACUC will proceed with finishing remaining facility inspections. --Foothills campus and South campus inspections will require 2 members, ideally before people return to campus. --Remaining facilities (satellite ag facilities, remote inspections, etc.) may occur with 1 member and may occur via video livestreaming or other methods.

Additional Protocol Actions

Protocols for Review

Bone marrow aspirate concentrate with senotherapeutic flavonoid to improve articular cartilage repair



Submission Type	Review Type	Vote Results	Protocol Number	Principal Investigator
Initial	Full Board	12 / 12 Approved		

You have no action items visible

Protocols for Information-Only

Holding Protocol for Colorado State University Animal Care Program



Submission Type	Review Type	Protocol Number	Principal Investigator
Initial	Designated Member Review		

Antimicrobial properties of Equine MSCs



Submission Type	Review Type	Protocol Number	Principal Investigator
Initial	Designated Member Review		

Population structure and habitat use of endangered migratory nectarivorous bats at the northern boundary of their distribution



Submission Type	Review Type	Protocol Number	Principal Investigator
Initial	Designated Member Review		

Host range studies: 2019-nCoV



Submission Type	Review Type	Protocol Number	Principal Investigator
Initial	Designated Member Review		

Understanding intraspecific variation in boreal toad response to amphibian chytrid fungus



Submission Type	Review Type	Protocol Number	Principal Investigator
Initial	Designated Member Review		

Biologically Regulated Marrow Stimulation by Blocking Fibrosis with Oral Administration of Losartan and Elimination Senescent Cells with Fisetin to Improve Articular Cartilage Repair of Ankle Joints



Submission Type	Review Type	Protocol Number	Principal Investigator
Initial	Designated Member Review		

Musculoskeletal Effects of Equine Blood Flow Restriction (BFR) Training: A Translational Investigation



Submission Type	Review Type	Protocol Number	Principal Investigator
Initial	Designated Member Review		

Reportable Events