

Quorum Requirement = 8

Animal Care & Use Committee  
"August 20, 2020

**Members Present:** \*\*Anderson, \*\*Atkinson, \*\*Fogelgren, \*\*Fox (Alternate), \*\*Himenes, \*\*Kondo, \*\*Odani, \*\*Pacini, \*\*Seale, \*\*Talerico and \*\*Wong (Alternate)

**Members Absent:** Kelly, Langston, Lehrer, Meyer and Prieto

**Guests Present:** \*Tracie Donnell, Administrative Assistant; \*Denise Yee, Research Compliance Staff

\*In person, \*\*via teleconference

**A. Call to Order**

A quorum of members was present when the IACUC meeting was called to order by Chairman Dr. Manuel Himenes, Jr., in the Office of Research Services Honu Conference Room via teleconference at 1:30 PM. The first order of business was the approval of the July 16, 2020 regular IACUC meeting notes. The committee unanimously voted to approve the meeting notes.

**B. New Business:**

**1. Semiannual Facility Inspections.**

The committee approved the subcommittee report for the following facilities:

- Pope Laboratory 109
- Snyder Hall 411-412
- Woodlawn SAF
- WCC Veterinary Technician Program
- Life Sciences Aquatic Facility 105
- Biomed AVS Vivarium
- Edmonson Labs 401B, 301, 201, 114

A majority of members voted for approval, disapproval, or abstention. No minority opinions were noted or filed as of this meeting.

**C. Old Business: None**

**D. Other Business:**

**1. Veterinary Report**

**a. Veterinary Reviews:**

No veterinary concerns were reported for the following facilities:

- LifeSciences Building (LSB) Aquatic Facility – housing a few fish, but preparing to receive fish currently housed in Snyder 411.
- Snyder 411 – in the process of moving the bulk of fish to LSB.
- Pope Greenhouse
- Woodlawn SAF
- Edmonson 114, 201, 301, 401B

#### **b. Hurricane Douglas Report**

The hurricane passed north of the Hawaiian Islands on Sunday July 26, 2020 without incident. AVS preparations, in accordance with their emergency operation plans for Kaka'ako and Manoa, began on July 23, 2020. The vivariums were secured by close of business on July 24, 2020. There were no animals in the ABSL3. Animals were checked over the weekend. Communication was maintained between staff members and the Institutional Official throughout the event. The animals were checked on Monday, July 27, 2020 and all was in order. Reports were sent to USDA, AALAC and OLAW. The hurricane preparations were used as a real time drill. A log describing the preparations and areas needing improvement will be used as a training tool for AVS staff. A note of thanks was mentioned for the hard work of the AVS Operations Manager and staff in preparing for the hurricane.

Other USDA facilities, Waikiki Aquarium and the WCC Veterinary Technician Program were contacted. Their directors reported no adverse effects from the hurricane. The information was reported to the USDA.

#### **c. Waikiki Aquarium (WAQ)**

The UH Veterinarian followed up with the Director of the WAQ on how the facility is faring during the pandemic. The Director reported on July 20, 2020 that the facility is in a dire financial situation. They are unable to receive help from the State legislature and are not eligible for stimulus funds. Staff is limited to 60 hours per week. Operating expenses remain the same, though visitor-ship has decreased (96% are local @ \$8 admission versus \$12 for tourists). Friends of the Aquarium helped with operating expenses for the first 3 months. Update from the Director (August 19, 2020), effective 20 August 2020, the Provost and the Director decided to close the WAQ for an undetermined period of time following the Mayor's recent directives. All live exhibit staff members are working to provide normal care for the animals.

On August 12, 2020. A senior WAQ biologist reported a severe pump issue in the Hawaiian monk seal pool life support system. The pump failure caused supersaturation of oxygen in the pool. The seal, an air breather, was not affected. As confirmed by 2 marine mammal veterinarians, oxygen supersaturated water should not affect the resident seal. The pump was fixed on 18 August 2020 and there were no further supersaturation issues.

#### **d. Mice Overcrowding**

After a period of a low number of overcrowding incidents, there were seven (7) overcrowded cages in the last month for the PI whose colony is being monitored. One overcrowding resulted in the death of pups. The committee unanimously voted to support AVS charging the PI for immediately separating out extreme cases of overcrowded cages where death may be eminent from trampling.

#### **e. SOPs**

The committee unanimously approved revisions to the following SOPs:

- AVS Rodent CO<sub>2</sub> Euthanasia Standard Operating Procedures

- Sentinel Animal SOP

## 2. Dolphin Quest – Waikaloa

A researcher requested adding the Dolphin Quest facility at Waikaloa to their protocol. However, due to restrictions in travel during the pandemic, the IACUC is unable to conduct an inspection of the facility prior to approving an amendment to add the facility. The committee suggested a virtual video tour of the facility in lieu of an in-person inspection.

### E. Review of New Protocols, Renewals, and Revisions:

#### Description of Protocols – Full Approval

08-212-14 [3202], 08-422-10 [3111], 09-871-11 [2962], 09-887-11 [3133], 17-2581-4 [3413], 18-2948-3 [2948], 18-2971-3 [2971], 18-3041-2 [3041], 20-3266 [3266], 20-3272 [3272], 20-3300 [3300], 20-3406 [3406] and 20-3419 [3419] were granted full approval.

**08-212-14 [3202]** (Annual Renewal) Application Title - *“Conditional Knockout of Selenoprotein K”*. **Vertebrate Species** – Mice. **Project Description** – Continuation of a project which uses a lox/cre system to: 1) determine the role of Selenoprotein K in different tissues and 2) determine the role of Sel K in generating effective immune responses. **No discussion.**

**08-422-10 [3111]** (Annual Renewal) Application Title – *“Role of Myostatin in Regulation of Musculoskeletal Growth”*. **Vertebrate species** – Mice. **Project Description** – Continuation of a project to understand the molecular mechanisms of myostatin propeptide in promoting muscle growth and reducing fat deposition. **No discussion.**

**09-871-11 [2962]** (Annual Renewal) Application Title - *“Mechanism of Selenoprotein Synthesis and Studies of Selenoprotein Functions”*. **Vertebrate species** – Mice. **Project Description** – Continuation of a study of mice that do not have Selenoprotein M (SelM KO) and Selenocysteine Lyase (ScLy KO), assuming the mice are viable. These animal studies are designed to confirm cell culture models which show a role for SelM and ScLy in the protection from oxidative stress and selenoprotein synthesis respectively. **No discussion.**

**09-887-11 [3133]** (Annual Renewal) Application Title - *“The Role of Inflammation in Atherosclerosis”*. **Vertebrate Species** – Mice. **Project Description** – Continuation of a project to identify areas of immunity that participate in the disease process. **No discussion.**

**17-2581-4 [3413]** (Full Renewal) Application Title – *“Stranding Response and Necropsy for Pacific Island Cetaceans”*. **Vertebrate Species** – Whales and Dolphins. **Project Description** – Continuation of a project to respond to dead cetacean strandings throughout the state of Hawaii by recovering carcasses, conducting necropsies and by leading follow-up cause of death investigations. The project also proposes to respond to on-site live stranding events by providing triage, transport and euthanasia. **No discussion.**

**18-2948-3 [2948]** (Annual Renewal) Application Title – *“UAV Photogrammetry Calibration to Derive Dolphin Population Demographic Parameters”*. **Vertebrate species** – Dolphins and whales. **Project Description** – Continuation of a project to validate body measurements of marine mammals obtained via aerial photogrammetry (UAVs or drones) with measurements obtained with the animals. This research will help obtain robust demographic and health measurements of wild populations of dolphins and whales. **No discussion.**

**18-2971-3 [2971]** (Annual Renewal) Application Title – *“Study of Marine Mammal Abundance, Ecology, Behavior and Resilience to Anthropogenic Stressors”*. **Vertebrate species** – Marine mammals. **Project Description** – Continuation of a research project to obtain biologically relevant comparative

**E. Review of New Protocols, Renewals, and Revisions:**

measurements across populations and species and to provide management and stakeholders with important information about the basic biology and ecology of marine mammal species. Data is collected by 1) obtaining information on the fundamental biology and ecology, including assessing abundance and habitat use of marine mammals; 2) analyzing and developing quantitative methods to evaluate the complex animal social structures of marine mammal populations and studying the fine scale behavior and energetics between individuals; and 3) using results to facilitate impact assessment and mitigation procedures to lessen impact of human activities on marine mammals. **No discussion.**

**18-3041-2 [3041]** (Annual Renewal) Application Title – *“Herd/Flock/Breeding for Aquaculture Classes @ UH-Hilo Panaewa Farm”*. **Vertebrate species** – Fish. **Project Description** – Continuation of the protocol that covers; 1) producing and maintaining fish stocks for use in education, extension or future research at CAFNRM; 2) hands-on instruction in maintenance and breeding of fish stocks to ensure that students and farmers can culture fish humanely and efficiently; and 3) providing an external facility for local farmers to maintain stocks in emergency and/or quarantine situation. **No discussion.**

**20-3266 [3266]** (Amendment) Application Title – *“Fish TB Infection Model”*. **Vertebrate species** – Fish. **Project Description** – Amendment to vary the anesthetic solution and relocate the lab for a project that seeks to develop a fish model of tuberculosis (TB) in order to understand the mechanism of the disease and develop better therapies. **No discussion.**

**20-3272 [3272]** (Amendment) Application Title – *“A Comparison of Bedding Substrates for Mice”*. **Vertebrate species** – Mice. **Project Description** – The amendment to this project was for adding breeding and increasing the number of mice per cage. The overall project studies the performance of three bedding substrates corn cob, hardwood and cellulose in the local vivarium environment. Initially, urine absorption studies were conducted. In the future, bedding effects on reproduction, preferences, and pathology will be studied. **No discussion.**

**20-3300 [3300]** (New) Application Title – *“Molokai Fencing for Watershed Protection”*. **Vertebrate species** – Goats, pigs and deer. **Project Description** – This new project is for protecting irreplaceable watershed forest on the island of Moloka'i from damage by removing feral ungulates. Scientific knowledge gained through this project will contribute to statewide watershed protection initiatives by providing resource managers and agencies with data that can inform strategy selection and conservation program implementation. **No discussion.**

**20-3406 [3406]** (New) Application Title – *“Community-Based Invasive Species Removal Continues Improving Habitat Accessibility and Connectivity for Migratory Native Stream Species in Makiki, Manoa, and Palolo Streams”*. **Vertebrate species** – Fish. **Project Description** – This new project covers the direct removal of invasive species as a means to restoring habitat, while education through outreach provides a critical strategy for stopping new introductions and limits the spread of invasive aquatic species. **No discussion.**

**20-3419 [3419]** (New) Application Title – *“Little Fire Ant Detector Dog Program”*. **Vertebrate species** – Dogs. **Project Description** - The purpose of this new project is to develop a canine detection program for Little Fire Ant (LFA). The little fire ant poses significant health, agricultural, economic, and quality-of-life threats to Maui. **No discussion.**

IACUC Vote – unanimous vote for **08-212-14 [3202]**, **08-422-10 [3111]**, **09-871-11 [2962]**, **09-887-11 [3133]**, **18-3041-2 [3041]**, **20-3266 [3266]**, **20-3300 [3300]**, **20-3406 [3406]** and **20-3419 [3419]**.

- Majority vote for **17-2581-4 [3413]**. Members J and K abstained. Member J has a conflict and Member K is an associate on the protocol.
- Majority vote for **20-3272 [3272]**. Members F and S abstained. Member F is the PI for the project and Member S is an associate on the protocol.



**E. Review of New Protocols, Renewals, and Revisions:**

- Majority vote for **18-2948-3 [2948]** and **18-2971-3 [2971]**. Member K abstained. Member K is the co-PI for the protocols.

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**Description of Protocols - Not Approved until Additional Information or Clarification is Provided:**

**10-1016-10 [3377], 13-1805-7 [3261] and 20-3428 [3428] were Not Approved until Additional Information or Clarification is Provided.**

**10-1016-10 [3377]** (Full Renewal) Application Title - *"Tissue Calcification in Association with Genetic Disorder"*. **Vertebrate species** – Mice. **Project Description** – Continuing study of the role of altered expression or mutations in a gene (ABCC6) which has been linked to calcification in certain diseases such as *pseudoxanthoma elasticum* and dystrophic calcification after injury to the heart. **Discussion** – The protocol was not approved because a full renewal progress report was not provided. It was suggested that in the future, the PI may want to combine this protocol and 13-1805-7 as they are similar.

A. Section III. Project Objectives. #3. Three Year Full Renewal and #4. Full Renewal Progress Report.

- The correct response is "yes". A brief progress report for the project is required.

IACUC Vote – Unanimous vote for nonapproval.

**13-1805-7 [3261]** (Full Renewal) Application Title - *"Measuring the Effect of Pyrophosphate on Matrix Mineralization"*. **Vertebrate species** – Mice. **Project Description** – Continuation of a project that addresses the role that the gene called ABCC6 plays in inappropriate calcification of the heart and blood vessels found in certain human diseases such as PXE. **Discussion** – The protocol was not approved because a full renewal progress report was not provided.

A. Section III. Project Objectives. #3. Three Year Full Renewal and #4. Full Renewal Progress Report.

- The correct response is "yes". A brief progress report for the project is required.

IACUC Vote – Unanimous vote for nonapproval.

**20-3428 [3428]** (New) Application Title – *"Regucalcin and Cancer Suppression"*. **Vertebrate species** – Mice. **Project Description** - This new project is to determine suppressive effects of regucalcin, a novel suppressor protein of cancer, on prostate cancer bone metastasis to provide a novel strategy of therapeutic tool in treating prostate cancer. **Discussion** – The protocol was not approved pending a justification for animals in category E, why mice supposedly housed singly may suffer wounding, acknowledgment of special husbandry for nude mice, and removal of operculum movement in monitoring.

A. Mouse Section.

#9. Justification for Animals in Category E.

- Provide justification for not administering analgesics during tumor growth on the study mice.

#13. Special Husbandry Requirements Description.

**E. Review of New Protocols, Renewals, and Revisions:**

- Sterile husbandry and handling are required for nude mice.

**B. Section VII. Experimental Design and Animal Procedures.**

**#2. Experimental Design, Methods, and Procedures.**

- Explain how mice may bleed from wounding if they are housed individually.
- Under paragraph 2. Remove operculum movement.

**C. Section IX. Anesthesia, Analgesics & Tranquilizers.**

**#3. Methods of Monitoring Animal.**

- Remove operculum movement.

IACUC Vote – Unanimous vote for nonapproval.

**F. Previously Reviewed Protocols and Project Personnel Changes - Approved**

Approved protocols – **None**

Approved Personnel Changes – **11-1146-10 [3138]** and **14-1988-7 [3409]**

Approved protocols (DMR approved) – **11-1219-9 [2779]** and **17-2678-4 [3167]**

Approved protocols (VVC approved) – **None**

**G. Adjournment:** The meeting was adjourned at 2:30 PM.

**LEGEND**

Approved - research or training/teaching can begin or continue.

Not Approved - research or training/teaching cannot begin until additional information or clarification required by the committee is reviewed and approved by the chairperson.

Deferred - research or training/teaching cannot begin as the protocol has serious defects that require significant justification and review by the full committee.\

**IACUC Decision on Reviewed Protocols August 20, 2020**

Approval	Not Approved	Deferral	Withdrawn	Tabled
14	3	0	0	0

Respectfully submitted,

A handwritten signature in black ink, appearing to read "Norman K. Magno", with a stylized flourish at the end.

Norman K. Magno  
Manager and Compliance Officer  
Animal Welfare Program (AWP)

Quorum Requirement = 8

Animal Care & Use Committee  
September 17, 2020

**Members Present:** \*\*Anderson, \*\*Atkinson, \*\*Fogelgren, \*\*Fox (Alternate), \*\*Himenes, \*\*Kelly \*\*Kondo, \*\*Lehrer, \*\*Odani, \*\*Pacini, \*\*Prieto, \*\*Talerico and \*\*Wong (Alternate)

**Members Absent:** Langston, Meyer and Seale,

**Guests Present:** \*Tracie Donnell, Administrative Assistant; \*Denise Yee, Research Compliance Staff; \*\*Norman Magno, Compliance Officer and Executive Secretary

\*In person, \*\*via teleconference

**A. Call to Order**

A quorum of members was present when the IACUC meeting was called to order by Chairman Dr. Manuel Himenes, Jr., in the Office of Research Services Honu Conference Room via teleconference at 1:30 PM. The first order of business was the approval of the August 20, 2020 regular IACUC meeting notes. The committee unanimously voted to approve the meeting notes.

**B. New Business:**

**1. Semiannual Facility Inspections.**

The committee approved the subcommittee report for the following facilities:

- Monoclonal Antibody Service Facility and Training Center (MASFTC)
- Waikiki Aquarium
- Dolphin Quest
- Waimanalo Research Station – Sheep
- Waimanalo Research Station – Aquaponics
- Waimanalo Research Station – Lizard Behavior

A majority of members voted for approval, disapproval, or abstention. No minority opinions were noted or filed as of this meeting.

**C. Old Business: None**

**D. Other Business:**

**1. Veterinary Report**

**a. Veterinary Reviews:**

No veterinary concerns were reported for the following facilities:



- Waikiki Aquarium (WAQ) – Due to issues associated with the pandemic, WAQ is considering moving the Hawaiian monk seal to either an approved mainland facility or Sea Life Park (SLP) until the issues are worked out. A move to SLP is more likely due to fires on the mainland's west coast.
- KCC Monoclonal Lab
- Dolphin Quest
- Waimanalo Sheep
- Waimanalo Lizards
- Waimanalo Aquaponics

## **b. Updated AVS Occupational Health and Safety Manual**

The committee approved the following changes to the manual:

- Clarified an option for short term AVS users, such as community college students and visiting scholars, to complete the medical surveillance review if they choose. Cost is \$28/person paid by the individual's department.
- Reference links to NIOSH approved respirators provided
- JABSOM EHSO training availability online

## **2. Adverse Fish Event – UHH Aquaponics Program @ Panaewa**

The committee was informed of fish deaths that occurred at the UHH Aquaponics program site on 22 August 2020. The fish were last checked in the late afternoon of the previous day. A fiberglass connection became detached resulting in an aeration failure in the tank. 321 fish or 5.6% of the total fish population died. To correct the fiberglass connection, the PI installed saddles with screw-in connectors to prevent future detachments and is considering a dialer alarm system that measures dissolved oxygen. However, the cost of the system (~\$19,000) may be prohibitive.

The committee was deeply concerned because a similar detachment, resulting in fish deaths, occurred in May 2019. The Fish Advisory Committee investigated and recommended keeping the stocking density low to avoid a mass die off should an equipment failure occur. The PI complied but later requested and was granted an increase in stocking density because the lower density was affecting plant production.

The committee discussed the following options:

- Replace the PI with an individual better able to provide support and oversight of the program.
- In the interim, install an air pressure monitoring system which is less expensive.
- Lower the stocking density so the fish are able to survive for 1-2 hours following an equipment failure.
- System redundancy.

The committee acknowledged that the detached air lines were corrected by installing saddles and screw in connectors. The committee opted to forward a letter to the PI with the following interim requirements to be completed no later the 28 September 2020:

- Immediately reduce the stocking density to increase the chances of survival should a catastrophic system failure occur.
- At regular intervals, perform tank system checks including DO using either a handheld or submerged meter. The readings are required to be documented and available when requested. If a submerged meter is used, verify in writing a regular schedule of calibration and maintenance.

**E. Review of New Protocols, Renewals, and Revisions:**

98-037-22 [3206], 01-026-19 [2965], 03-057-18 [2967], 06-023-15 [2939], 07-023-14 [3215], 07-2713-4 [3450], 11-1108-10 [3452], 11-1194-10 [3207], 11-1248-10 [3443], 13-1744-8 [3216], 15-2141-6 [2984], 17-2688-4 [3446], 18-1949-3 [1949], 18-2752-3 [2752], 18-2753-4 [3453], 18-2944-3 [2944], 19-3205-2 [3205] and 20-3445 [3445] were granted full approval.

**Description of Protocols – Full Approval:**

**98-037-22 [3206]** (Annual Renewal) Application Title - "*Maintenance of Fish Stocks for Research*". **Vertebrate species** – Fish. **Project Description** - Continuation of efforts at the Hawaii Institute of Marine Biology to maintain strain consistency of cultured tilapia. **No discussion.**

**01-026-19 [2965]** (Annual Renewal) Application Title - "*Monoclonal Antibody Service Facility and Training Center*". **Vertebrate species** – Mice. **Project Description** – Continuing biotechnology program at Kapiolani Community College with monoclonal antibody and hybridoma technology and theory taught to students in two courses, MICR 161 (Immunology and Protein Chemistry) and MICR 240 (Tissue Culture). **No discussion.**

**03-057-18 [2967]** (Annual Renewal) Application Title - "*Virulence Factors of Campylobacter jejuni*". **Vertebrate species** – Mice. **Project Description** - Continuing efforts to produce a specific monoclonal antibody reagent to the common bacterial enteric pathogen, *Campylobacter jejuni*, grown under a variety of *in vitro* conditions particularly under tissue culture conditions that mimic the pathogenic invasion process. **No discussion.**

**06-023-15 [2939]** (Annual Renewal) Application Title - "*Nutrient Acquisition and Replication of Pseudomonas aeruginosa during CF Lung Infection*". **Vertebrate Species** – Mice. **Project Description** - Continuation of a project that tests the ability of several mutants of *Pseudomonas aeruginosa* (PA) to grow *in vivo* compared to the wild type PA. **No discussion.**

**07-023-14 [3215]** (Annual Renewal) Application Title - "*The Regulation of Bcl-2 by Cell Adhesion in Cardiovascular Disease*". **Vertebrate species** – Mice. **Project Description** – Continuation of a project to determine how cell adhesion and Bcl-2 impact cardiomyocyte cell survival. **No discussion.**

**07-2713-4 [3450]** (Full Renewal) Application Title – "*Stress Implications in Survivor Canines Who Lost Another Household Animal Companion*". **Vertebrate species** – Dogs. **Project Description** – Continuation of a project to investigate whether dogs who lost another household animal companion undergo characteristics of stress. Dogs may experience the grieving process as humans do. Owner's perception of dog's stress/grief as well as cortisol measurements are used to learn whether dogs experience stress during times of loss of another household companion animal. **No discussion.**

**11-1108-10 [3452]** (Full Renewal/Significant Revision) Application Title - "*Natural Area Reserves Feral Ungulate Management*". **Vertebrate Species** – Pigs. **Project Description** – Continuation of a project that is a small but vital component of NARS (Natural Area Reserves) management; native habitat restoration. **Discussion** – Euthanasia by gunshot is on hold pending approval of RCUH firearms policies.

**11-1194-10 [3207]** (Annual Renewal) Application Title - "*Integrating Environmental Modulation, Osmosensitivity and Signaling in a Model Osmoreceptor*". **Vertebrate species** - Fish. **Project Description** – Continuation of a project that studies how tilapia can adapt to and switch between fresh water (FW) and seawater (SW). **No discussion.**

**11-1248-10 [3443]** (Full Renewal) Application Title - "*Molecular Insights into the Tumor Suppressor Signaling Pathways*". **Vertebrate species** – Mice. **Project Description** – Continuation of a project that uses Fanconi Anemia (FA) as a unique genetic model system to: 1) dissect the FA signaling

**E. Review of New Protocols, Renewals, and Revisions:**

pathway; 2) determine how FA proteins mediate tumor suppression; and 3) investigate the potential of targeting the FA pathway as a therapeutic approach in the treatment of human cancer. **No discussion.**

**13-1744-8 [3216]** (Annual Renewal) Application Title - "*Evaluate New Predator Proof Fence Design to Protect Hawaiian Petrels*". **Vertebrate Species** – Cats. **Project Description** – Continuation of a project to collaborate with the National Park Service to evaluate the effectiveness of a predator fence design to exclude cats from the largest endangered petrel subcolony on the island of Hawaii. **No discussion.**

**15-2141-6 [2984]** (Annual Renewal) Application Title – "*Mesopredator Release: Moray Eels Inconspicuously Predominate Heavily Fished Reefs*". **Vertebrate Species** - Fish. **Project Description** – Continuation of a project that seeks to accurately quantify moray eel relative abundances over a gradient of fishing intensity, in order to give evidence of mesopredator release (population increase of mid-level predators due to removal of apex predators). **No discussion.**

**17-2688-4 [3446]** (Full Renewal) Application Title – "*Innate Immune Enhancements by Iron Oxide (IO) Nanoparticles (NP)*". **Vertebrate species** – Mice. **Project Description** – Continuation of a project that investigates the mode of action of iron oxide nanoparticles in enhancing immune responses with malaria subunit protein vaccines. **No discussion.**

**18-1949-3 [1949]** (Annual Renewal) Application Title – "*TNF-Mediated Vascular Permeability in Sepsis*". **Vertebrate species** – Mice. **Project Description** – Continuation of a project that seeks to understand how TNF-alpha functions to initiate vascular leakage initiated by sepsis. It is hypothesized that the TNF-alpha inactivates RRas to regulate vascular permeability. **No discussion.**

**18-2752-3 [2752]** (Annual Renewal) Application Title – "*Pueo Distribution, Nesting, Foraging, Movement*". **Vertebrate Species** – Owls and mice. **Project Description** – Continuation of a project to study the population size, habitat use, and diet of Hawaiian short-eared owls to provide insight necessary to conserve the species. **No discussion.**

**18-2753-4 [3453]** (Full Renewal) Application Title – "*Ept1 Studies in Mouse Models*". **Vertebrate species** – Mice. **Project Description** – Continuation of a project that investigates the role of the selenoprotein, Ept1, in regulating immune cell function. **No discussion.**

**18-2944-3 [2944]** (Annual Renewal) Application Title – "*The Genomics of Feralisation*". **Vertebrate species** – Chickens. **Project Description** – Continuation of a study to better understand the genetic, behavioral and ecological diversity of wild and feral chickens. The aim is to test how feral chickens differ from their domestic counterparts (and among ecologically dissimilar habitats) in their genetics, gut microbiomes, sexual traits and endocrinology (hormone levels). **No discussion.**

**19-3205-2 [3205]** (Annual Renewal) Application Title – "*Optimizing Larval Fish Rearing With Copepods*". **Vertebrate species** – Fish. **Project Description** – Continuation of a project that seeks to develop a protocol for raising clownfish larvae in a co-culture with copepods. The aim is to reduce the number of copepods invested from stock cultures by creating a self-sustaining population within the larviculture that can supply fish larvae with a continuous source of copepods. **No discussion.**

**20-3445 [3445]** (New) Application Title – "*Land-based Pollutants in Hawaiian Coral Reef Ecosystems*". **Vertebrate species** – Fish. **Project Description** - This new project aims to examine land-based pollutants in coral reef ecosystems in Hawaii, and as part of that, to examine pollutant concentrations in the tissues of fishes. **No discussion.**

**E. Review of New Protocols, Renewals, and Revisions:**

IACUC Vote: Unanimous vote for 98-037-22 [3206], 01-026-19 [2965], 03-057-18 [2967], 06-023-15 [2939], 07-023-14 [3215], 07-2713-4 [3450], 11-1108-10 [3452], 11-1194-10 [3207], 11-1248-10 [3443], 12-1410-9 [2851], 13-1744-8 [3216], 15-2141-6 [2984], 17-2688-4 [3446], 18-1949-3 [1949], 18-2752-3 [2752], 18-2753-4 [3453], 18-2944-3 [2944], 19-3205-2 [3205] and 20-3445 [3445].

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**Description of Protocols - Not Approved until Additional Information or Clarification is Provided:**

**20-3351 [3351], 20-3427 [3427] and 20-3449 [3449] were Not Approved until Additional Information or Clarification is Provided.**

**20-3351 [3351]** (New) Application Title – “*Coronavirus Recombinant Subunit Vaccines*”. **Vertebrate species** – Mice. **Project Description** – This new project is to develop recombinant subunit vaccine candidates to protect against coronavirus infection. Proposed studies for this project will demonstrate the immunogenic potential of various recombinant subunit coronavirus vaccines developed in the researcher's lab. Results will support the advancement of the vaccine candidates towards the development of human vaccines. **Discussion** – The protocol was not approved pending clarification of cardiac puncture post euthanasia and IBC review and approval.

A. Mouse Section. #7 Animal Number Determination and Section VII. Experimental Design and Animal Procedures. #2 Experimental Design, Methods and Procedures.

- Is cardiac puncture for collection of blood serum samples at different time points conducted post euthanasia?

B. Section XI. Regulated Material and Activities. #3. IBC Authorization Number.

- Confirmation of IBC review and approval is required.

IACUC Vote – Unanimous vote for nonapproval.

**20-3427 [3427]** (New) Application Title – “*Regulation of Musculoskeletal Growth and Blood Glucose Control*”. **Vertebrate species** – Mice. **Project Description** – This new project seeks to understand the molecular mechanisms of myostatin in regulation of muscle growth and reducing fat deposition, and study the effects of papaya leaf extract on glucose controls in diabetes. **Discussion** – The protocol was not approved pending clarification of the logistics of location, transportation, quarantine and health status testing of the experimental mice during STZ treatments. Additionally, the AVS veterinarians and CTAHR veterinarian are required to be the veterinarians of record since the mice will be housed in AVS and CTAHR facilities.

A. Section VII. Experimental Design and Animal Procedures. #2 Experimental Design, Methods and Procedures.

- Clarify the AVS location where the STZ treatments will take place. Contact AVS Program Manager and AVS Operations Manager to work out the logistics of location, transportation, quarantine and health status testing of the experimental mice.
- Be advised that testing for health status is performed while mice are in quarantine not prior.

**E. Review of New Protocols, Renewals, and Revisions:**

- B. Section XII. Veterinary Care. #1. Veterinary Care, #2. Date of Vet Contact, #3. Vet Response.
- When housed at an AVS location, it is advised that AVS veterinarians be the veterinarians of record.
  - Contact AVS and the CTAHR veterinarian (for review and consultation), then complete XII. #2 and #3.

IACUC Vote – Unanimous vote for nonapproval.

**20-3449 [3449]** (New) Application Title – “*Alphavirus Recombinant Subunit Vaccines*”.  
**Vertebrate species** – Mice. **Project Description** – This new project is to develop recombinant subunit vaccine candidates to protect against alphavirus infection. Proposed studies for this project will demonstrate the immunogenic potential of various recombinant subunit alphavirus vaccines developed in the researcher's lab. Results will support the advancement of the vaccine candidates towards the development of human vaccines. **Discussion** – The protocol was not approved pending clarification of cardiac puncture post euthanasia and IBC review and approval.

- A. Mouse Section. #7 Animal Number Determination and Section VII. Experimental Design and Animal Procedures. #2 Experimental Design, Methods and Procedures.
- Is cardiac puncture for collection of blood serum samples at different time points conducted post euthanasia?
- B. Section XI. Regulated Material and Activities. #3. IBC Authorization Number.
- Confirmation of IBC review and approval is required.

IACUC Vote – Unanimous vote for nonapproval.

**F. Previously Reviewed Protocols and Project Personnel Changes - Approved**

Approved protocols – **20-3428 [3428]**

Approved Personnel Changes – **09-788-11 [2767]** and **20-3383 [3383]**

Approved protocols (DMR approved) – **99-041-21 [2829]** and **16-2449-5 [3196]**

Approved protocols (VVC approved) – **18-2948-3 [2948]**

- G. Adjournment:** The meeting was adjourned at 2:50 PM.



## LEGEND

Approved - research or training/teaching can begin or continue.

Not Approved - research or training/teaching cannot begin until additional information or clarification required by the committee is reviewed and approved by the chairperson.

Deferred - research or training/teaching cannot begin as the protocol has serious defects that require significant justification and review by the full committee.\

### IACUC Decision on Reviewed Protocols August 20, 2020

Approval	Not Approved	Deferral	Withdrawn	Tabled
18	3	0	1	0

Respectfully submitted,



Norman K. Magno  
Manager and Compliance Officer  
Animal Welfare Program (AWP)



Quorum Requirement = 8

Animal Care & Use Committee  
Special Meeting  
October 02, 2020

**Members Present:** \*\*Anderson, \*\*Atkinson, \*\*Fogelgren, \*\*Fox (Alternate), \*\*Himenes, \*\*Kondo, \*\*Langston, \*\*Lehrer, \*\*Odani, \*\*Pacini, \*\*Prieto, \*\*Talerico and \*\*Wong (Alternate)

**Members Absent:** Kelly, Meyer and Seale,

**Guests Present:** \*Denise Yee, Research Compliance Staff: \*\*Norman Magno, Compliance Officer and Executive Secretary

\*In person, \*\*via teleconference

**A. Call to Order**

A quorum of members was present when the special IACUC meeting was called to order by Chairman Dr. Manuel Himenes, Jr., in the Office of Research Services Honu Conference Room via teleconference at 8:30 AM.

**B. New Business:**

**Response to the IACUC's requirements following fish deaths at the UH Hilo Aquaculture Program site.**

The committee discussed the UHH Aquaculture Program Director's response (emailed 28 September 2020) to the IACUC requirements after fish deaths that occurred 21-22 August 2020 at the UHH Agricultural Farm's aquaculture site.

The Director responded that reducing the stocking density of the fish tanks to prevent mortalities during equipment failures was not a viable solution for their intensive recirculating aquaculture systems to be profitable. Furthermore, physically monitoring dissolved oxygen levels every 4 hours, *in lieu* of an automated monitoring system was not possible due to minimal staff. The cost of a reliable automated monitoring and alarm system is approximately \$20,000, which the facility does not have. However, the Director suggested relatively inexpensive air pressure switches to air and water supply inlets that are connected to a central relay or automatic dialer. The drawback to the air pressure switches is that the alarm is triggered whenever the power goes off and high pressure oxygen cylinders and diffusers would have to be used at every tank once the alarms sounded. The Director thought that the saddles and clamps added to the airlines would be sufficient to keep them from detaching and that additional security measures could be added by the end of the year.

The committee acknowledged that the saddles and clamps were installed on the airlines lessening the chances of detachment. However, the committee required the facility to have an emergency response plan in case of equipment failures. Ultimately, an automatic dissolved oxygen monitoring and alarm system is best. With the cost being prohibitive, it was suggested that a redundant air system to run in tandem with the current system is quick to set up and is relatively inexpensive. If one system fails, the other system is likely still operational. The redundant system should have a separate blower and air lines. The committee also recommended an air pressure monitoring device be installed in at least one tank so that the staff could be notified if there is a problem with air distribution.

The committee requires the Director to have a back-up emergency plan that includes a redundant air system installed within 2 weeks (20 October 2020). If this cannot be done, then the stocking density is required to be reduced to 0.3-0.5 kg/m<sup>3</sup> so fish can survive in case of air delivery equipment failures. A reduction in population would involve the removal of approximately 3000 fish. The committee is of the collective opinion that the fish should be donated to farmers, sold, or relocated to other facilities, instead of being euthanized. The IACUC suggested it be contacted for assistance with relocating the fish to other sources if help is needed. It was also suggested that the fish could be donated to feed families in need during the pandemic. The committee recommended informing the UH Public Relations department of the situation.

The matter of the reason for the facility operating an intensive aquaculture system when the protocol was approved for holding fish and providing students some hands on aquaculture experience needs explanation. Furthermore, the number of fish previously approved was 300 adults and 10,000 offspring. The current system houses at least a ten-fold increase in adult fish numbers. The Director is required to amend the protocol to clarify the objectives of the project, correct the fish numbers and provide a detailed SOP on the fish activities for the aquaponics operation. The committee rationalized that if the facility is operated like a commercial facility, then automatic monitoring and alarming systems as well as oxygen cylinders and diffusers should be in place. Funds should be available to purchase and maintain the systems.

C. **Adjournment:** The meeting was adjourned at 9:40 AM.

Respectfully submitted,



Norman K. Magno  
Manager and Compliance Officer  
Animal Welfare Program (AWP)

Quorum Requirement = 8

Animal Care & Use Committee  
October 15, 2020

**Members Present:** \*\*Anderson, \*\*Atkinson, \*\*Fogelgren, \*\*Fox (Alternate), \*\*Himenes, \*\*Kelly, \*\*Kondo, \*\*Lehrer, \*\*Prieto, \*\*Talerico and \*\*Wong (Alternate)

**Members Absent:** Langston, Meyer, Odani, Pacini and Seale,

**Guests Present:** \*Tracie Donnell, Administrative Assistant; \*Denise Yee, Research Compliance Staff; \*Norman Magno, Compliance Officer and Executive Secretary

\*In person, \*\*via teleconference

**A. Call to Order**

A quorum of members was present when the IACUC meeting was called to order by Chairman Dr. Manuel Himenes, Jr., in the Office of Research Services Honu Conference Room via teleconference at 1:35 PM. The first order of business was the approval of the September 17, 2020 regular IACUC meeting and the October 02, 2020 special meeting minutes notes. The committee unanimously voted to approve the meeting notes.

**B. New Business:**

**1. Semiannual Facility Inspections.**

The committee approved the subcommittee report for the following facilities:

- Kaka'ako BSB Labs 167, 208, 217, 239, 309c
- Kaka'ako BSB vivarium, ABSL3 Facility
- Queen's Medical Center for Biomedical Research
- Leeward Community College Poultry Training Program
- Mari's Garden

A majority of members voted for approval, disapproval, or abstention. No minority opinions were noted or filed as of this meeting.

**2. Semiannual Review of the Program of Humane Care and Use**

The committee approved the subcommittee report for the Program Review.

A majority of members voted for approval, disapproval, or abstention. No minority opinions were noted or filed as of this meeting.

**C. Old Business: None**

**D. Other Business:**

**1. Veterinary Report**

**a. Veterinary Reviews:**

Mari's Garden (MG) – 2 concerns noted:

- Research fish are housed at MG, a commercial aquaponics facility, while permanent housing at a UH facility is undergoing renovation. On May 29, 2020, 220 fish died due to a water valve that broke during the night causing the tank to leak. Pursuant to their commercial liability policy, MG assumes full responsibility for the care of the fish. UH personnel are not allowed on the property and therefore, are not involved in the care of the fish. In the future, MG should provide the PI with timely (within 48 hours) reporting of fish deaths or major health issues.
- Twice daily checks are conducted by MG but not documented. The PI confirmed that MG will begin documenting daily observations.

**b. Expired Drug Use**

- The Windward Community College Veterinary Technician Program reported the inadvertent use of a small amount (0.17ml) of ketamine that had expired 3 weeks prior to use. There were no ill effects in the kittens the drug was used on. The expired drug use was reported to the USDA on 24 September 2020.

**c. Waikiki Aquarium (WAQ)**

- WAQ reported terminating 11 employees due to COVID related financial challenges. None were live exhibits related, so the standard of animal care is not affected. However, three (3) employees were transferred to live exhibits to assist with the workload.

**d. Status of IBR HVAC**

- During the last 3 months, intermittent warmer temperature and high humidity along with problems with the remote digital controller have affected mostly animal rooms A, B and C in IBR. Facilities Management monitors and resets the system. AVS staff works closely with Facilities to report problems and temporarily resolve them. Animals are being housed in animal rooms, D, E, and F.

**2. Update on UHH Aquaculture Program**

- The committee was informed that a redundant air blower system has been installed on the fish tanks at the UHH aquaculture facility as required. Air pressure switches and a dialer have been ordered and will be installed when the parts arrive. The PI still needs to address biomass and how fish will be monitored. The committee requested photos of the new equipment installations and to keep all parties, including administrators informed. A special meeting (October 22, 2020) to follow-up on the facility's progress was cancelled.

**3. Woodlawn SAF**

The committee unanimously approved the Woodlawn SAF Occupational Health and Safety Program. The Vermin Control Plan was unanimously approved with a few minor corrections.

#### 4. IACUC Chair Resigning

- The IACUC Chair announced he will be resigning the Chair position effective December 31, 2020. The committee members thanked him for his many years of service.

#### E. Review of New Protocols, Renewals, and Revisions:

97-019-20 [3164], 05-016-17 [3454], 06-032-15 [2986], 08-411-14 [3223], 09-682-12 [3003], 12-1448-9 [2977], 13-1761-8 [3232], 16-2400-5 [3144], 16-2504-5 [3228], 17-2521-4 [3451], 17-2702-4 [3464] and 20-3460 [3460] were granted **full approval**.

**97-019-20 [3164]** (Annual Renewal) Application Title - *"Field and Management Studies of Endangered Hawaiian Forest Birds"*. **Vertebrate species** – Birds, mice, rats, mongoose, and cats. **Project Description** – Continuation of a long term project that focuses on the restoration of native and endemic forest birds of Maui by understanding their ecology, patterns of demography and factors threatening wild populations. **No discussion**.

**05-016-17 [3454]** (Full Renewal) Application Title - *"Dietary Selenium and Asthma"*. **Vertebrate species** – Mice. **Project Description** – Continued study of the dietary effect of selenium on the development of asthma. **No discussion**.

**06-032-15 [2986]** (Annual Renewal) Application Title – *"Role of Cell Mediators in Asbestos-SV40 Carcinogenesis"*. **Vertebrate species** – Mice. **Project Description** – Continuation of a study to develop mouse models for malignant mesothelioma (MM). **No discussion**.

**08-411-14 [3223]** (Annual Renewal) Application Title - *"Mouse Transgenic Mouse Facility"*. **Vertebrate species** – Mice. **Project Description** – Continuation of a project to develop a mouse transgenic facility to provide mice with genetically altered genotypes to UH faculty for biomedical research purposes. **No discussion**.

**09-682-12 [3003]** (Annual Renewal) Application Title - *"Mouse Model for Mesothelioma Preventive and Therapeutic Studies"*. **Vertebrate species** – Mice. **Project Description** – Continuation of a project that investigates whether blocking certain cell biology pathways prevents the development of mesothelioma and inhibits the tumor growth and invasion. **No discussion**.

**12-1448-9 [2977]** (Annual Renewal) Application Title - *"Evaluation of Re-Loading Rat Traps in Hawaiian Forest Situations"*. **Vertebrate Species** – Rat. **Project Description** – Continuation of a project that aims to evaluate the effectiveness of self-loading kill traps for natural resource management in remote Hawaiian forest settings. **No discussion**.

**13-1761-8 [3232]** (Annual Renewal) Application Title - *"Linking the Effects of Stocking Density, Forage Environment, and Climatic Conditions to Animal Performance in Tropical Forage Finish Beef Production Systems"*. **Vertebrate species** – Cattle. **Project Description** – Continuation of a project to quantify the effects of grazing behavior on body core temperature and production efficiency of grass finish cattle. **No discussion**.

**16-2400-5 [3144]** (Annual Renewal) Application Title – *"Waianae Mountains Watershed Partnership"*. **Vertebrate Species** – Goats and pigs. **Project Description** – Continuation of a project to reduce the ungulate population and work with landowners to determine the best management strategies for future ecosystem conservation in the Waianae Mountain Watershed. **No discussion**

**16-2504-5 [3228]** (Annual Renewal) Application Title – *"Assessing Lifespan and Aging Phenotypes Resulting from FoxO3 Induction Using Mouse Models"*. **Vertebrate species** – Mice. **Project Description** – Continuation of a project to insert genes believed to slow aging, into mice. **No discussion**.



**E. Review of New Protocols, Renewals, and Revisions:**

**17-2521-4 [3451]** (New) Application Title – “*Cold-induced Thermogenesis in Transgenic Mice*”. **Vertebrate species** – Mice. **Project Description** – The project (previously expired) studies the direct role of selenium, metabolism and selenoproteins in heat generation in mice. The mechanisms that affect heat production may lead to better understanding of obesity. **No discussion.**

**17-2702-4 [3464]** (Full Renewal) Application Title – “*Food Animal Veterinary Continuing Education*”. **Vertebrate species** – Fish and pigs. **Project Description** – Continuation of a project to conduct a series of continuing education workshops for veterinarians to increase their abilities to provide veterinary services for food animals. **No discussion.**

**20-3460 [3460]** (New) Application Title – “*An Investigation of Anthelmintic Properties of Sheep and Goat Diets Grazing Hawaii Forests and Pastures*”. **Vertebrate species** – Goats and sheep. **Project Description** - This new project investigates the anthelmintic properties of forages grazed by sheep and goats in Hawaii forests and rangelands. The goal is to identify key forages with suitable anthelmintic properties that may help reduce the use of commercial anti-parasitic drugs in Hawaii sheep and goat herds. **No discussion.**

IACUC Vote – Unanimous vote for **97-019-20 [3164]**, **05-016-17 [3454]**, **06-032-15 [2986]**, **08-411-14 [3223]**, **09-682-12 [3003]**, **12-1448-9 [2977]**, **13-1761-8 [3232]**, **16-2400-5 [3144]**, **16-2504-5 [3228]**, **17-2521-4 [3451]**, **17-2702-4 [3464]** and **20-3460 [3460]**.

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**Description of Protocols - Not Approved until Additional Information or Clarification is Provided:**

**05-040-15 [2998]** and **20-3455 [3455]** were **Not Approved until Additional Information or Clarification is Provided**

**05-040-15 [2998]** (Annual Renewal) Application Title – “*Watershed Threat Control in West Maui Mountains*”. **Vertebrate Species** – Goats, deer, pigs, cattle. **Project Description** - Continuation of a project to protect the watershed from feral animals by constructing and maintaining fence-lines around important native habitat. **Discussion** – The protocol was not approved pending completion of training recertifications.

**A. Section II. Personnel Qualifications.**

**1. Review of Regulations.**

- Several project staff members are required to complete the CITI training module, “*Refresher Course for Investigators Conducting Research With Lab Animals*”.

IACUC Vote – Unanimous vote for nonapproval.

**20-3455 [3455]** (New) Application Title – “*In Vivo Characterization of Fat Composition and Metabolism using MR Spectroscopic Imaging*”. **Vertebrate species** - Mice. **Project Description** - This new study is to develop a new magnetic resonance imaging method (MRI) to study fat composition and metabolism in the liver, fat compartments and brain in mice. The goal is to transfer the technology back to a human MRI system and apply it for the diagnosis of liver disease and disorders related to fat metabolism in humans. **Discussion** – The protocol was not approved pending IBC review and approval.

**A. Section XI. Regulated Materials and Activities. #3. IBC Authorization Number.**

- Confirmation of IBC review and approval is required.

IACUC Vote – Unanimous vote for nonapproval.



**F. Previously Reviewed Protocols and Project Personnel Changes - Approved**

Approved protocols – 10-1016-10 [3377], 13-1805-7 [3261], 20-3351 [3351] and 20-3449 [3449]

Approved Personnel Changes – 99-041-21 [2829], 12-1307-9 [2763] and 12-1421-9 [2774]

Approved protocols (DMR approved) – **None**

Approved protocols (VVC approved) – **None**

**G. Adjournment:** The meeting was adjourned at 2:20 PM.

**LEGEND**

Approved - research or training/teaching can begin or continue.

Not Approved - research or training/teaching cannot begin until additional information or clarification required by the committee is reviewed and approved by the chairperson.

Deferred - research or training/teaching cannot begin as the protocol has serious defects that require significant justification and review by the full committee.\

**IACUC Decision on Reviewed Protocols October 15, 2020**

Approval	Not Approved	Deferral	Withdrawn	Tabled
12	2	0	1	0

Respectfully submitted,



Norman K. Magno  
 Manager and Compliance Officer  
 Animal Welfare Program (AWP)

Quorum Requirement = 8

Animal Care & Use Committee  
 November 19, 2020

**Members Present:** \*\*Anderson, \*\*Atkinson, \*\*Fogelgren, \*\*Himenes, \*\*Kondo, \*\*Lehrer, \*\*Odani, \*\*Pacini, \*\*Prieto, \*\*Talerico and \*\*Wong (Alternate)

**Members Absent:** Fox, Kelly, Langston, Meyer, and Seale

**Guests Present:** \*Tracie Donnell, Administrative Assistant; \*Denise Yee, Research Compliance Staff;

\*In person, \*\*via teleconference

**A. Call to Order**

A quorum of members was present when the IACUC meeting was called to order by Chairman Dr. Manuel Himenes, Jr., in the Office of Research Services Honu Conference Room via teleconference at 1:35 PM. The first order of business was the approval of the October 15, 2020 regular IACUC meeting. The committee unanimously voted to approve the meeting notes.

**B. New Business:**

**1. Semiannual Facility Inspections.**

The committee approved the subcommittee report for the following facilities:

- Hawaii Institute of Marine Biology
- Gilmore Hall Lab 107
- Mealani Research Station
- SOS Rehabilitation Project – Kauai Humane Society
- Kauai Agricultural Research and Education Center – Goat Project
- UH Maui College Aquaponics Program
- Pacific Aquaculture and Coastal Resource Center
- UH Hilo Agricultural Farm – Aquaculture and Livestock Programs

A majority of members voted for approval, disapproval, or abstention. No minority opinions were noted or filed as of this meeting.

**C. Old Business: None**

**D. Other Business:**

**1. Veterinary Report**

**a. Veterinary Reviews:**

- Kaka'ako Vivarium – PIs representing 43 protocols reported no changes to the protocol and no adverse events.

- ABSL3 Facility – Due to the amount of time needed to document proficiency, JBF management was encouraged to begin or refresh staff training to avoid a log jam when researchers are ready to start their activities.
- LCC Poultry Facility – A sick chicken was reported on 11/13/20. The AVS staff veterinarian euthanized the chicken. The carcass was taken to the State Lab for Avian Influenza screening.
- Mari's Garden – Report revised to clarify daily observations.
- HIMB Sharks – A shark researcher reported releasing sharks into Kaneohe Bay because of health concerns due to water quality in the lagoon pens.

No concerns reported for the following facilities:

- Kaka'ako Labs 167, 208, 217C, 239, 309C
- QMC – Center for Biomedical Research
- Gilmore Lab 107
- Kauai Agricultural Research and Education Center – Goats
- Save Our Shearwaters – Kauai Humane Society
- UH Maui College Aquaponics
- Mealani Research Station

**b. Mealani Bulls**

- Bulls 7007 and 8029 were reported injured on 11/9/20 and 11/13/20 respectively, due to pecking order fighting. The veterinarian for the facility assessed the injuries and recommended slaughter for 7007 and removal of 8029 from the sale list. 8029 was segregated from the other animals and will be reassessed.

**c. IBR HVAC**

- Facilities has fixed several HVAC parts over a couple of months but have not been able to achieve consistent humidity levels. They had planned to replace the exhaust motor. The installation was postponed due to inclement weather.
- On 11/17/20, a faulty blower assembly to 208 A, B, and C caused a chain reaction, tripping all HVAC circuits and a complete shutdown of the HVAC. Facilities manually reset the blower. A blower assembly will need to be ordered.
- 11/18/20 – The compressor to the blower unit for rooms A, B, and C failed and needs to be replaced. The unit was isolated so rooms D, E, and F were not affected. Mice were moved from rooms A, B, and C to D, E, and F. Facilities contacted an engineer for an estimate to repair the compressor.
- 11/13/20 – An Auxiliary and Facilities Manager emailed that there is a project entering into the design phase for replacing portions of the IBR HVAC.

**d. Change in AWA Rules**

- 11/16/20 – UH responded to the USDA endorsing the National Association of Biomedical Researcher's (NABR) letter supporting the following proposed rule changes:
  - 1) **Registration.** Eliminate the requirement to update a facility's registration every three years. Eliminate requirement for research facilities to request inactive status and to clarify the duration of registrations and conditions for cancellation.
  - 2) **Annual Report.** Eliminate requirement for the IO or chief operating officer to sign the annual report.
  - 3) **IACUC.** Replace the current continuing annual review (of USDA covered activities) with a complete review of activities at intervals not to exceed three years. NABR noted

that many PIs already submit revisions to their protocols on a regular basis, making the annual review somewhat redundant.

- As of 2019 during semiannual veterinary visits, PI's have been asked if there have been any unreported changes to the protocol or unreported adverse events associated with the protocol. An overwhelming majority of PIs have answered no.

## 2. Follow-up on UHH Aquaculture Program

- The semiannual inspection of the Panaewa Aquaculture facility was conducted on October 29, 2020. It was noted that the auxiliary air pumps are in place and aerating 2 fish tanks. However, documentation of dissolved oxygen levels has not been done and is required. An autodialer to monitor air pressure and water levels has been installed. Additional minor corrections are required.
- The amendment to the protocol to increase the number of animals and detail the intensive aquaponics activities at the facility was not submitted as required. The committee unanimously voted to suspend the protocol effective November 19, 2020. Lifting of the suspension is contingent upon submission of the amendment and completion of all requirements noted in the semiannual report **no later than December 21, 2020**. If the deadline cannot be met, the fish are required to be disposed of according to the approved methods in the protocol (distributed to farmers, sold to consumers or transferred to other projects). **A written progress report is required no later than December 21, 2020.**

## 3. Veterinary Care SOP

The committee unanimously voted to approve the updated Veterinary Care SOPs. Changes to the SOPs reflect current practices such as tagging cages for injured animals and storing of carcasses before pick up.

## 4. IACUC Chairmanship Successor

The committee briefly discussed the importance of naming a successor for the IACUC chair position by the next and last meeting of the year. The members were encouraged to think about who should be named or a process to name a successor. It was suggested that all members be notified so less active members have the opportunity to participate.

## E. Review of New Protocols, Renewals, and Revisions:

06-010-16 [3490], 08-547-13 [3461], 12-1399-8 [3191], 12-1518-7 [3494], 14-1934-7 [3486], 14-2002-6 [3260], 17-2527-5 [3256], 17-2652-4 [3489], 19-2813-2 [2813], 19-3131-2 [3491], 19-3197-2 [3197], 19-3200-2 [3200], 20-3303 [3303], 20-3470 [3470] and 20-3485 [3485] were granted full approval.

**06-010-16 [3490]** (Full Renewal) Application Title - "*Sperm Function and Genetics*". **Vertebrate species** – Mice. **Project Description** – Continuation of a project to use assisted reproduction methods, such as IVF and ICSI, to reproduce various infertile and subfertile mice, and to examine sperm function in fertilization and assisted fertilization. **No discussion.**

**08-547-13 [3461]** (Full Renewal) Application Title - "*Evaluation of Novel Native and Synthetic Conopeptides on Fish*". **Vertebrate Species** – Fish. **Project Description** – Continuation of a project that evaluates: 1) new native isolated and synthetic peptides from Hawaiian cone shells for phyla selectivity and potency; 2) comparisons of native and mutant peptides by injecting known peptide

**E. Review of New Protocols, Renewals, and Revisions:**

concentrations into fish and scoring dose vs. lethality; and 3) compares the bioactivity of same peptides to invertebrate models (specifically worms and snails). **No discussion.**

**12-1399-8 [3191]** (Annual Renewal) Application Title - "*Sustainable and Organic Agriculture Learning Center*". **Vertebrate species** – Fish. **Project Description** – Continuation of a project that represents an opportunity for expansion and diversification of CTAHR's research, education and extension capacity in areas of soil-less farming on the Windward side of Oahu that would include the established and emerging technologies of aquaculture and aquaponics, respectively. **No discussion.**

**12-1518-7 [3494]** (Full Renewal) Application Title - "*Oahu Wildlife Habitat Restoration and Management*". **Vertebrate Species** – Birds. **Project Description** – Continuation of a project to implement wetland management techniques to restore, enhance, protect and maintain wetland ecosystems and to aid in the recovery of endangered birds. Habitats are modified, birds are banded and observed. **No discussion.**

**14-1934-7 [3486]** (Full Renewal) Application Title - "*Studies of Deep-Sea Fishes in Hawaii*". **Vertebrate Species** – Fish. **Project Description** – Continuation of a project that describes spatial and temporal patterns in Hawaii's deep 7 bottomfish populations and deeper (400-5000 meter) less studied populations of fishes using baited cameras and traps. **No discussion.**

**14-2002-6 [3260]** (Annual Renewal) Application Title – "*ABCC6 Breeding Protocol*". **Vertebrate species** – Mice. **Project Description** – Continuation of a protocol to maintain the mouse colonies for projects that address the role that ABCC6 plays in the inappropriate calcification of heart and blood vessels found in certain human diseases such as pseudoxanthoma elasticum (PXE) and generalized arterial calcification of infancy (GACI), two incurable diseases. **No discussion.**

**17-2527-5 [3256]** (Annual Renewal) Application Title – "*Therapeutic Application of TRPM7 Inhibitor in Renal Inflammatory Fibrosis*". **Vertebrate species** – Mice. **Project Description** – Continuation of a project that investigates the efficacy of TRPM7 inhibitor on progressive renal fibrosis mouse model as anti-fibrosis drug. **No discussion.**

**17-2652-4 [3489]** (Significant Revision) Application Title – "*Nanobody Ablation of Xenographic Tumors in Mice*". **Vertebrate Species** – Mice. **Project Description** – Significant revision to add a surgical procedure to a project that seeks to destroy tumors by injecting experimental mice with a proprietary, named *Uroboros*, plasmids expressing nanobodies. Nanobodies are the smallest known antibodies. **No discussion.**

**19-2813-2 [2813]** (Annual Renewal) Application Title – "*Collection of Cryptic Fishes in Kaneohe Bay, Oahu, Hawaii*". **Vertebrate species** – Fish. **Project Description** – Continuation of a protocol that covers a general survey of cryptic fishes (i.e., fish that hide in coral heads or coral rubble) using 20 FARMS (Fish Autonomous Reef Monitoring Structures) placed at 10 sites throughout Kaneohe Bay. **No discussion.**

**19-3131-2 [3491]** (Significant Revision) Application Title – "*Mechanism of Colitis Development*". **Vertebrate species** – Mice. **Project Description** – Significant revision to add a surgical procedure to a study that seeks to understand how Gai proteins are implicated in the development of DSS-induced colitis. **No discussion.**

**19-3197-2 [3197]** (Annual Renewal) Application Title – "*Migrate or Hibernate: How Do Coral Reef Fishes Survive Extreme Seasonal Temperatures in the Arabian Gulf?*" **Vertebrate species** – Fish. **Project Description** – Continuation of research to examine the capacity of coral reef fishes to undergo seasonal hibernation or migration as a means of surviving elevated seasonal temperatures. **No discussion.**



**E. Review of New Protocols, Renewals, and Revisions:**

**19-3200-2 [3200]** (Annual Renewal) Application Title – “*Effects of Anthropogenic Disturbance on Coral Reef Fishes in Hawaii*”. **Vertebrate species** – Fish. **Project Description** – Continuation of a project that compares the capacity of coral reef fishes to tolerate current and projected future conditions of temperature and oxygen saturation during the reproductive period when adult fishes are most sensitive. Focus is on fishes of importance to Native Hawaiian culture and the project therefore has major potential to advance understanding and projection of climate change impacts on coral reef fish and fisheries in Hawaii. **No discussion.**

**20-3303 [3303]** (New) Application Title - “*Understanding the Nesting Ecology, Mating Strategies, and the Breeding Sex Ratio for Guam's Green Sea Turtle (*Chelonia mydas*) Population in the Face of Ongoing Climate Change.*” **Vertebrate species** – Sea turtles. **Project Description** – This new project studies the endangered green sea turtles (*Chelonia mydas*) at their main nesting locations on the island of Guam. The data will be used to advise and collaborate with environmental administrators to most effectively conserve and protect Guam's nesting green sea turtle population. **No discussion.**

**20-3470 [3470]** (New) Application Title – “*ABCC6 and Atherosclerosis*”. **Vertebrate species** – Mice. **Project Description** – The new project studies the role of altered expression or mutations in a gene (ABCC6) that has been linked to calcification in certain diseases such as pseudoxanthoma elasticum (PXE) and generalized arterial calcification of infancy (GACI) and in dystrophic calcification in the heart and vasculature. **No discussion.**

**20-3485 [3485]** (New) Application Title – “*DERT (Dispersable Emergency Response Treatment) Evaluation in Lethal Liver Injury Model*”. **Vertebrate species** – Rats. **Project Description** – This new project aims to confirm results performed in a previous animal study of a therapy that will enable stabilization, promote blood clotting, and promote the healing process of traumatic wounds. **No discussion.**

IACUC Vote – Unanimous vote for **06-010-16 [3490]**, **08-547-13 [3461]**, **12-1399-8 [3191]**, **12-1518-7 [3494]**, **14-1934-7 [3486]**, **14-2002-6 [3260]**, **17-2527-5 [3256]**, **17-2652-4 [3489]**, **19-2813-2 [2813]**, **19-3131-2 [3491]**, **19-3197-2 [3197]**, **19-3200-2 [3200]**, **20-3303 [3303]**, **20-3470 [3470]** and **20-3485 [3485]**.

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**Description of Protocols - Not Approved until Additional Information or Clarification is Provided:**

**09-887-11 [3133]** and **18-2753-4 [3453]** were **Not Approved until Additional Information or Clarification is Provided.**

**09-887-11 [3133]** (Annual Renewal) Application Title - “*The Role of Inflammation in Atherosclerosis*”. **Vertebrate Species** – Mice. **Project Description** – Amendment to add an additional procedure to a project to identify areas of immunity that participate in the disease process. **Discussion** – The protocol was not approved pending IBC review and approval.

A. Section XI. Regulated Materials and Activities. #3. IBC Authorization Number.

- Confirmation of IBC review and approval is required.

IACUC Vote – Unanimous vote for nonapproval.

**18-2753-4 [3453]** (Amendment) Application Title – “*Ept1 Studies in Mouse Models*”. **Vertebrate species** – Mice. **Project Description** – Amendment to add new experiments and reagents to a project that investigates the role of the selenoprotein, Ept1, in regulating immune cell function. **Discussion** – The protocol was not approved pending IBC review and approval.

A. Section XI. Regulated Materials and Activities. #3. IBC Authorization Number.



- Confirmation of IBC review and approval is required.

IACUC Vote – Unanimous vote for nonapproval.

**F. Previously Reviewed Protocols and Project Personnel Changes - Approved**

Approved protocols – **05-040-15 [2998]**, **20-3427 [3427]** and **20-3455**

Approved Personnel Changes – **06-010-15 [2719]**, **06-032-15 [2986]**, **11-1109-9 [2566]**, **12-1469-9 [2855]**, **16-2282-5 [3109]**, **18-2782-3 [2782]** and **20-3401 [3401]**

Approved protocols (DMR approved) – **09-788-11 [2767]** (Amendment to increase the animal numbers for teaching and breeding activities), **16-2449-5 [3196]** (Amendment to add glucose and fatty acid tracer analogs), **18-2752-3 [2752]** (Amendment for personnel changes, increasing the animal numbers, adding a capture method, amending blood and feather collection methods) and **20-3272 [3272]** (Amendment for changes to the animal care component).

Approved protocols (VVC approved) – **None**

**G. Adjournment:** The meeting was adjourned at 3:20 PM.

**LEGEND**

Approved - research or training/teaching can begin or continue.


Not Approved - research or training/teaching cannot begin until additional information or clarification required by the committee is reviewed and approved by the chairperson.

Deferred - research or training/teaching cannot begin as the protocol has serious defects that require significant justification and review by the full committee.\

**IACUC Decision on Reviewed Protocols November 19, 2020**

Approval	Not Approved	Deferral	Withdrawn	Tabled
15	2	0	0	0

Respectfully submitted,



Norman K. Magno  
 Manager and Compliance Officer  
 Animal Welfare Program (AWP)

Quorum Requirement = 8

Animal Care & Use Committee  
 December 03, 2020

**Members Present:** \*\*Anderson, \*\*Atkinson, \*\*Fox, \*\*Himenes, \*\*Kelly, \*\*Kondo, \*\*Langston, \*\*Lehrer, \*\*Meyer, \*\*Odani, \*\*Pacini, \*\*Prieto, \*\*Talerico and \*\*Wong (Alternate)

**Members Absent:** Fogelgren and Seale

**Guests Present:** \*Denise Yee, Research Compliance Staff; \*Norman Magno, Executive Secretary, Compliance Officer

\*In person, \*\*via teleconference

**A. Call to Order**

A quorum of members was present when the IACUC meeting was called to order by Chairman Dr. Manuel Himenes, Jr., in the Office of Research Services Honu Conference Room via teleconference at 1:35 PM. The first order of business was the approval of the November 19, 2020 regular IACUC meeting. The committee unanimously voted to approve the meeting notes.

**B. New Business:** None

**C. Old Business:** None

**D. Other Business:**

**1. Veterinary Report - None**

**2. Follow-up on UHH Aquaculture Program**

- In response to the committee's letter (dated November 19, 2020) suspending the protocol covering the fish activities at the Panaewa Aquaculture facility, the UHH administration elected to suspend facility operations and either sell or euthanize the fish. Written confirmation of the closure and disposition of the fish is required no later than December 21, 2020. The committee requested an accounting of the fish disposition.
- The UHH administration may decide at a later date to re-start operations at the facility. At that time a protocol will be submitted by the aquaculture technician on behalf of a yet to be named principal investigator (PI). Qualifications for PIs is currently being discussed with UH and UHH administrators.

**3. IACUC Chairmanship Successor**

The committee acknowledged the service of the current IACUC Chair. His tenure will end December 31, 2020. The Chair commented that it was an honor and privilege to serve on the IACUC. The committee selected a scientist member and a veterinarian to serve as the next Chair and Vice Chair, respectively. The DIO will appoint the members to their new positions.

The next priority of the committee is to recruit additional scientist members with expertise in the biomedical field.

#### 4. TOPAZ Update

The committee was informed that the "go-live" date for the updated version of TOPAZ software is January 25, 2021. In order, to upload the new version, the system will shut down, January 18-25, 2021 for data transfer. No new protocols will be accepted between December 22, 2020 and January 24, 2021. To accommodate the shutdown, the January IACUC meeting will be moved a week earlier to January 14, 2021, and the February IACUC meeting will be delayed a week to February 25, 2021.

PIs that may have pressing grant issues will be instructed to contact the IACUC office for instructions.

#### E. Review of New Protocols, Renewals, and Revisions:

**01-046-18 [3259], 09-863-12 [2995], 12-1449-9 [3016], 13-1745-8 [3258] and 19-3200-2 [3200]** were granted **full approval**.

**01-046-18 [3259]** (Annual Renewal) Application Title - "*Hawksbill Turtle Monitoring*". **Vertebrate Species** – Reptile. **Project Description** – Continuation of a project protecting and monitoring endangered Hawksbill sea turtles. **No discussion**.

**09-863-12 [2995]** (Annual Renewal) Application Title - "*The Novel Role of JNK Kinases and JIP Scaffold Proteins in Memory and Synaptic Plasticity*." **Vertebrate species** - Mice. **Project Description** – Continuation of a study to understand stress-related learning and memory at the level of genes and proteins, especially the involvement of JNK and related proteins in the learning process. **No discussion**.

**12-1449-9 [3016]** (Annual Renewal) Application Title - "*Kauai Invasive Species Committee*". **Vertebrate Species** – Cats, rats, and mongoose. **Project Description** – Continuation of a project for the control of rats, cats and mongoose to prevent, control, or eliminate threatening invasive plant and animal species in order to preserve Kauai's native biodiversity and minimize adverse ecological, economic and social impacts. **No discussion**.

**13-1745-8 [3258]** (Annual Renewal) Application Title – "*Maui Nui Seabird Recovery Project*". **Vertebrate Species** – Birds. **Project Description** – Continuation of a project to monitor the demographics, survival, reproductive success and ranging behavior of Wedge-tailed shearwaters. **No discussion**.

**19-3200-2 [3200]** (Amendment) Application Title – "*Effects of Anthropogenic Disturbance on Coral Reef Fishes in Hawaii*". **Vertebrate species** – Fish. **Project Description** – Amendment to add new species, personnel, and a new experiment to a project that compares the capacity of coral reef fishes to tolerate current and projected future conditions of temperature and oxygen saturation during the reproductive period when adult fishes are most sensitive. Focus is on fishes of importance to Native Hawaiian culture and the project therefore has major potential to advance understanding and projection of climate change impacts on coral reef fish and fisheries in Hawaii. **No discussion**.

IACUC Vote – Unanimous vote for **01-046-18 [3259], 09-863-12 [2995], 12-1449-9 [3016], 13-1745-8 [3258] and 19-3200-2 [3200]**.

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#### Description of Protocols - Not Approved until Additional Information or Clarification is Provided:

**20-3468 [3468] and 20-3500 [3500]** were **Not Approved until Additional Information or Clarification is Provided**.

**E. Review of New Protocols, Renewals, and Revisions:**

**20-3468 [3468]** (New) Application Title – *“Non-native Animal Control Research and Support Haleakala National Park”*. **Vertebrate species** - Rat, cat, mongoose. **Project Description** – This new project is to develop adequate, coordinated, and cooperative research that will result in more effective, efficient, and responsive invasive animal control at Haleakala National Park, thus benefiting the many native species and communities the park strives to preserve, restore, and interpret. **Discussion** – Information was provided for two of the traps used for rodents but not for the “body-gripping” trap. The committee requested additional information for the “body gripping” trap and identify the wildlife biologist that will evaluate non-target species for veterinary care.

**A. Section VI. Experimental Design and Animal Procedures.**

**2. Experimental Design, Methods, and Procedures.**

- Provide details of the “body gripping” traps such as trap type, model number, manufacturer, and whether it’s been approved for humane use.

**B. Section XII. Veterinary Care.**

**2. Justification for No Veterinary Care.**

- Provide the name of the wildlife biologist that will be consulted to evaluate the condition of non-target species to determine if veterinary care is needed.

IACUC Vote – Unanimous vote for nonapproval.

**20-3500 [3500]** (New) Application Title – *“The Effects of Environmental Enrichment on Laboratory Mice”*. **Vertebrate species** – Mice. **Project Description** - This is an Under Graduate Research Opportunities Project (UROP) that will study the impacts of environmental enrichment on laboratory mice. **Discussion** – The protocol was not approved pending completion of training certifications.

**A. Section II. Personnel Qualifications.**

**1. Review of Regulations.**

- One project staff member is required to complete the CITI training modules, *“Investigator, Staff and Student Basic Course”* and *“Reducing Pain and Distress in Laboratory Mice and Rats”*

IACUC Vote – Unanimous vote for nonapproval

**F. Previously Reviewed Protocols and Project Personnel Changes - Approved**

Approved protocols – **09-887-11 [3133]** and **18-2753-4 [3453]**

Approved Personnel Changes - **None**

Approved protocols (DMR approved) – **None**

Approved protocols (VVC approved) – **None**

**G. Adjournment:** The meeting was adjourned at 2:15 PM.

## LEGEND

Approved - research or training/teaching can begin or continue.

Not Approved - research or training/teaching cannot begin until additional information or clarification required by the committee is reviewed and approved by the chairperson.

Deferred - research or training/teaching cannot begin as the protocol has serious defects that require significant justification and review by the full committee.\

### IACUC Decision on Reviewed Protocols December 03, 2020

Approval	Not Approved	Deferral	Withdrawn	Tabled
5	2	0	0	0

Respectfully submitted,



Norman K. Magno  
 Manager and Compliance Officer  
 Animal Welfare Program (AWP)