

INSTITUTIONAL ANIMAL CARE AND USE COMMITTEE (IACUC) MINUTES OF MEETING ON SEPTEMBER 29, 2014

Present: Dr. Tracy Romano (Chair), Pat Bubucis, Muriel Hinkle, Toni O'Connell, Mike Osborn, Dr. Allison Tuttle, Dr. Larry Dunn, Dr. Robert Gunnels, and Gayle Sirpenski, (Secretary).

Absent:

Topics of Discussion: 1.) Discussion of ongoing IACUC projects/ Renewal 2.) Review of new IACUC proposal 3.) Review of Semi-annual IACUC Program Review checksheets.4.) Tour of facility

The meeting began with a formal welcome to Toni O'Connell. Ms. O'Connell is currently employed by Pfizer and works in the regulatory compliance group for Comparative Medicine. She is the IACUC Administrator at the Groton facility.

Discussion of ongoing IACUC projects:

Project # 11001 (T. Romano) *Investigation of the Physiological Responses of Belugas to Stressors to Aid in Assessing the Impact of Environmental and Anthropogenic Challenges on Health.*

Dr. Romano updated the members on this ongoing project. The overall goal of this effort is to investigate the physiological responses of beluga whales to stressors. The results of this project will allow for a better understanding and characterization of the relationships among hormones in different matrices (blood, saliva, blow, feces) in conjunction with immune function. This project is currently without funding but samples are being collected opportunistically during routine health sampling. Dr. Tuttle noted that there have been no issues with the whales' health or behavior as a result of this activity. Dr. Romano reported that additional samples are still needed and has requested re-approval of this project. The IACUC unanimously approved this request.

Project # 13007 (T. Romano) *Health Assessments in Wild Belugas*

This field project aims to establish baseline health measurements of wild belugas with studies of live capture-released belugas in Point Lay and Bristol Bay, AK via satellite tracking, blood sampling, and sample collection. In past years, Mystic has participated in the collection of valuable samples for our research on the immune response and stress markers in beluga whales. Dr. Romano would like to continue to get additional skin samples which can be obtained from the subsistence hunted animals or from researchers placing satellite tags on the whales. The IACUC unanimously approved this request.

Project # 04007 (T. Romano) *Investigation of the Immune System in Aquatic Mammals, Birds and Elasmobranches*

This long-standing request for blood samples from our collection animals supports Dr. Romano's goals to develop species-specific assays to study the nervous and immune systems in marine mammals, penguins, and sharks in order to assess the overall health of animals held in zoological collections and

in the wild. Dr. Romano requested re-approval of this project. The IACUC unanimously approved this request.

Project # 14006 (M. Castellote, National Marine Mammal Lab, AFSC, NOAA Fisheries Service)
Quantifying masked hearing in belugas with anthropogenic noise from Cook Inlet

The objectives of this project are; to collect baseline and masked hearing thresholds from captive belugas using anthropogenic noise sources recorded in Cook Inlet; quantify the masking frequency range and dB magnitude caused by the different noise sources projected; and to quantify the directional hearing abilities of belugas exposed to noise projected from 3-5 different angles.

This project was first proposed in 2013. The PI visited the aquarium a number of times to discuss the logistics of conducting the recordings in our exhibit environment. Cooperation from the whale is key to the success of this project. The Mystic husbandry staff is currently working on desensitizing the animal (Kela) to the apparatus and training her to hold in a layout position for the necessary duration. Mike Osborn reported that this training is progressing well. The IACUC reviewed the proposal in August 2014 and agreed that Dr. Larry Dunn should be the Designated Reviewer given his Navy experience and understanding of acoustics. Dr. Dunn will also be the Attending Veterinarian for this project. Dr. Dunn questioned the maximum sound level that the whale would be exposed to after the recording was processed through the amplifier and transducer and required that the study be interrupted or terminated if the animal appeared to be agitated by the sound. Dr. Castellote responded that the “noises would never exceed the Level A harassment threshold of 180 dB re 1 μ Pa established by NMFS as the onset of temporary threshold shift for cetaceans. Noise exposure will be continuously monitored and can be stopped at any time if requested by the staff or veterinarian.” With this condition, Dr. Dunn approved the project.

Review of new IACUC proposal

This disease surveillance project is a collaboration between Mystic Aquarium, University of Connecticut and the Connecticut Department of Energy and Environmental Protection (DEEP) to study the emergence of a novel fungal skin disease in local snakes which is having a major negative impact on rattlesnake snake populations in the Northeast and mid-West. IACUC approval is not required for this project, as state projects do not require IACUC oversight, but is recommended for the purpose of future publications.

The proposed project will determine whether the Eastern racer and Northern watersnake, snake species of concern in Connecticut, are also affected by this pathogen. Targeted species will be captured at random, through visual encounter surveys in the field. The snakes will be collected by DEEP biologists and brought to the aquarium the next day for physical examination and sampling. Blood samples, skin fungus cultures and skin biopsies, if lesions are present, will be obtained by Dr. Allison Tuttle. The analysis will determine the general health status of the animals. If an adequate amount of blood can be obtained, immune status will also be determined, by the University of Connecticut. The cultures and biopsies will be analyzed at the University of Connecticut. The proposed sampling methods follow a protocol provided by the U.S. Geological Survey for the collection of these biological samples in timber rattlesnakes (on file). Dr. Tuttle will monitor the snakes behavior and condition following the anesthesia and will determine when the snakes are ready to be released. All snakes will



be returned to the site of their collection. Dr. Tuttle said there will be no issues with the transfer of pathogens because all equipment will be disinfected. Dr. Dunn noted that this study will yield good information on the health status of the state's snake population even if pathogens are not seen. The proposal was approved and assigned Project # 14007.

The Semiannual IACUC Program Review Checklist is attached. These check sheets were reviewed by Dr. Tuttle and Gayle Sirpenski on 29 September 2014. All areas were found to be in acceptable condition and Dr. Tuttle noted areas of improvement regarding our diagnostic capabilities, specifically the aquarium's recent purchase of digital and portable radiograph equipment and a new ultrasound machine.

Dr. Romano asked for a status report on condition of our fish freezer. Mike Osborn explained that the cement slab under the freezer heaved over the winter and this caused some shifting of the container resulting in gaps. Facilities has addressed this by packing insulation into spaces to prevent temperature fluctuations. Six data loggers were purchased in early summer to help monitor the temperature fluctuations during the normal freeze/thaw cycles. The data showed that while the air temperature increased slightly above 0 degrees F during these cycles, the actual temperature of the fish product remains below 0 degrees F except a few occasional where it has gone 1 or 2 degrees above 0 during events such as work on the condensers or receiving a shipment. Ms. O'Connell asked about our procedure for overnight monitoring in the case of a chiller failure. Mr. Osborn explained that the power supply is on an alarm system and we have a contingency plan with our fish distributor to move the inventory to another freezer if needed. Long term plans are to move the freezer to another area of campus. While shut down, the chiller units will be rebuilt or replaced.

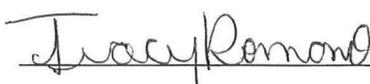
Eight members of the Committee conducted the facility tour. A number of issues had already been reported to the Facilities department as preparations for the upcoming AZA accreditation inspection are well underway. The Facilities Checklist was distributed to the Facilities Manager and Director of Husbandry on 30 September 2014. The Facility Checklist is attached.

The Program of Veterinary Care (PVC) document was reviewed and signed by Dr. Allison Tuttle on 4 March 2014. No changes were made at that time.

On 14 January 2014 the facility was inspected by USDA and no non-compliant items were noted.

Submitted by: G. Sirpenski, IACUC Secretary

IACUC Members:

 Date 10/06/14
 Date 6 Oct 2014

Committee Chairman
 Executive VP of Research & Zoological Operations
 Tracy Romano, Ph.D.

Veterinarian Emeritus, Research Scientist
 J. Lawrence Dunn, VMD



✓ _____ Date _____

Senior Scientist, Pfizer
Patricia Bubucis

Muriel N. Hinkle Date 7 Oct 2014

Sonalysts
Muriel Hinkle

✓ _____ Date _____

Director of Comparative Medicine
Pfizer
Robert Gunnels, DVM

Mike Osborn Date 7 Oct 2014

Senior Director of Husbandry
Mike Osborn

Allison Tuttle, DVM, DACM Date 10/7/14

Senior Director of Animal Care & Veterinary Services
Allison Tuttle, DVM, Diplomate ACZM

_____ Date _____

Comparative Medicine, Pfizer
Toni O'Connell

Gayle Sirpenski Date 10/7/2014
IACUC Secretary
Gayle Sirpenski



Patricia Bubucis Date 07 Oct 2014 _____ Date _____

Senior Scientist, Pfizer
Patricia Bubucis

Sonalysts
Muriel Hinkle

_____ Date _____

Director of Comparative Medicine
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Senior Director of Husbandry
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IACUC Secretary
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Patricia Bubucis

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 Date 90/7/14

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_____ Date _____
Senior Director of Animal Care & Veterinary Services
Allison Tuttle, DVM, Diplomate ACZM

Toni O'Connell Date 13 OCT 2014
Comparative Medicine, Pfizer
Toni O'Connell

_____ Date _____
IACUC Secretary
Gayle Sirpenski