Inspection Report

WAKE FOREST UNIVERSITY
MEDICAL CENTER BOULEVARD
WINSTON SALEM, NC 27157

Customer ID: **825**
Certificate: **55-R-0001**
Site: 001
ANIMAL RESOURCES PROGRAM/DOWNTOWN CAMPUS

Type: ROUTINE INSPECTION
Date: 28-JUL-2021

2.31(d)(1)(viii)

Institutional Animal Care and Use Committee (IACUC).

Concerns regarding animal care and use of cats on an IACUC-approved neuroscience protocol were brought to the attention of the IACUC and an investigation was conducted. The results of this investigation revealed that 15 incidents involving 4 cats had occurred over the last year. The incidents identified include improper record-keeping, lack of documentation during anesthesia and recovery, and failure to administer appropriate post-procedural, protocol-required pain relief.

Based on the number of incidents identified during their investigation, the IACUC did not ensure appropriate qualification and training of one researcher in this IACUC-approved protocol on the procedures having the potential to yield significant impacts to the animals. Per this section of the regulations, the IACUC shall determine that the proposed activities or significant changes in ongoing activities meet the following requirements: personnel conducting procedures on the species being maintained or studied will be appropriately qualified and trained in those procedures. This item was corrected prior to this inspection as this researcher is no longer at the institution.

2.32(c)(1)(iii) **Critical**

Personnel qualifications.

Prepared By: MARY ANN MCBRIDE
USDA, APHIS, Animal Care
Date: 16-AUG-2021

Title: VETERINARY MEDICAL OFFICER

Received by Title: Attending Veterinarian
Date: 16-AUG-2021

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The IACUC conducted an investigation after concerns regarding animal care and use of cats on an IACUC-approved neuroscience protocol were brought to their attention. The IACUC's review of records of post-procedural care of 4 cats documented that one researcher failed to comply with three post-procedural monitoring and care requirements as described in the IACUC-approved protocol: headwell cleaning frequency, appropriate body temperature care prior to return to housing enclosure after anesthesia and procedures, and post-procedural pain relief administration.

• Per the approved protocol, headwell cleaning "will be done at least once per week, and more often if indicated." Medical records review of 4 cats revealed significant deviation from this instruction.

• Per the medical record, the headwell of Cat 1 was cleaned only once at 10 days post-implantation in June 2021.

• Per the medical record, the headwell of Cat 2 was not cleaned according to the approved protocol frequency between August 2020 and June 2021. According to medical record entries, the headwell was cleaned only 9 times, instead of the minimum of 42 times as required by the IACUC-approved protocol. The longest interval between cleanings was 25 days.

• Per the medical record, the headwell of Cat 3 was not cleaned until 10 days post-implant surgery in June 2021.

• Per the medical record, the headwell of Cat 4 was not cleaned according to the approved protocol frequency between September and October 2020. The headwell was only cleaned 3 times. The longest interval between cleanings was 16 days.

• Per the medical records, 4 incidents document cats being returned to their housing enclosures with recorded temperatures below the normal range during the past year. The subnormal temperatures recorded were between 95.9- and 96.5-degrees F. Three incidents required AV team intervention. The fourth cat recovered uneventfully. Per the protocol, "the research team will take appropriate measures to prevent significant drops in temperature in the procedure and in early stages of recovery."

• Per the medical records, 10 recent instances where 4 cats did not receive protocol-required pain medication during the

post-procedure recovery period were documented.

The multiple documented deviations from the IACUC-approved, protocol-directed post-procedural care requirements for the cats indicates that one researcher was not effectively trained or qualified to perform their duties. These protocol deviations may have resulted or did result in unnecessary discomfort, pain, and distress for the cats. Per the regulations, training and instruction of personnel must include guidance in at least the following areas: Humane methods of animal maintenance and experimentation including: proper pre-procedural and post-procedural care of animals. This item was corrected prior to this inspection as this researcher is no longer at the institution.

2.33(b)(3) Critical

Attending veterinarian and adequate veterinary care.

Three separate research teams had adverse events involving the care and use of animals but failed to promptly communicate the events to the Attending Veterinarian (AV) team.

• Based on available clinical and research records, a macaque was recorded as being hypothermic throughout a four-hour anesthesia (93.3 – 93.7 degrees F) and vomited during recovery in January 2021. The research team did not contact the AV team to report timely and accurate information about the macaque's condition. The following morning during routine daily observations, the AV team found the macaque unresponsive in its enclosure. It was noted that the anesthesia and recovery records were incomplete, and that vomiting had not been recorded in the records. Despite immediate response by the AV team upon notification, the macaque's condition continued to deteriorate, and it was subsequently euthanized. The necropsy documented bronchopneumonia. Due to the lack of communication from the research team, the AV team was not afforded the opportunity to assess the animal's condition in a timely manner.

• Five incidences of cats not recovering as anticipated from neuroscience research procedures over the past year were documented by an IACUC investigation. In each instance, the researcher indicated that the cats were QAR (quiet, alert

and responsive) when returned to their housing enclosure following procedures performed under anesthesia as described in the IACUC-approved protocol. The researcher did not recognize any abnormal findings and did not communicate any concerns to the AV team. Yet the AV team determined during same-day evaluations shortly thereafter that the cats were in fact painful, hypothermic, hyperthermic, in shock, and/or in distress and required immediate medical intervention by the AV team.

• Five rabbits that had undergone prior IACUC-approved surgical procedures did not receive protocol-directed gabapentin on a Sunday in May 2021. The research person responsible for administering the medication ran out of sufficient medication but did not contact the AV team for guidance. The research team contacted the AV team on Monday morning upon noting the lack of Sunday medication administration. Upon notification, the AV team promptly evaluated the impacted animals and reported that no ill effects were noted due to this missed medication administration. The AV team provided gabapentin to the research team and it was subsequently administered per protocol. The AV team was not afforded the opportunity to evaluate the animals in a timely manner.

Failure of research staff to make and communicate daily observations to the AV team in a timely manner can have direct and significant impacts on the health and wellbeing of research animals. Per the regulations, each research facility shall establish and maintain programs of adequate veterinary care that include daily observations of all animals to assess their health and well-being. A mechanism of direct and frequent communication is required so that timely and accurate information on problems of animal health behavior, and well-being is conveyed to the AV. Correct by 05Aug2021. Corrective actions already in progress (05August2021) by the institution include implementation of new AV-directed, IACUC-approved SOPs for all researchers. Subsequent significant training of research staff is in development for delivery. Increased communication between research teams and the AV team has already occurred and will continue.

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2.38(f)(1) **Critical**

Miscellaneous.

One rabbit that had undergone prior IACUC-approved surgical procedures was handled by research staff for administration of subcutaneous fluids as described in the IACUC-approved protocol in March 2021. The staff member administering the fluids noted that the rabbit was dead at the completion of the fluid administration. Necropsy results indicated that the cause of death of this rabbit was mechanical asphyxiation. Per the regulations, handling of all animals shall be done as expeditiously and carefully as possible in a manner that does not cause trauma, overheating, excessive cooling, behavioral stress, physical harm, or unnecessary discomfort. This item was corrected prior to this inspection through retraining of the research staff. Additional corrective actions in progress by the institution include but are not limited to include implementation of new AV-directed, IACUC-approved SOPs for animal care and handling, along with improved communication between the research teams and the AV team.

3.127(a)

Facilities, outdoor.

Upon arrival at the farm at 8 am on 29July2021, inspectors observed a group of 10 sheep that had no shade available except that provided by the three-sided, unventilated run-in shed and an ineffective shade cloth structure. The shade factor of the shade cloth over the hay area was low and allowed excessive amounts of sun to penetrate, resulting in inadequate shade. Upon re-evaluation of the amount of shade in the enclosure at approximately 12 pm, adequate shade again could not be confirmed. The sheep were noted to be closely lined up along the narrow strip of shade available provided by the outside overhang of the roof of the run-in shed. Several were standing in direct sunlight due to inadequate shaded space availability. Temperatures for that day were recorded at 95 degrees F with high humidity.

Inadequate shade provision during periods of direct sunlight, high heat and humidity can cause significant stress and

discomfort to the animals. Upon discussion of the inspectors' inadequate shade observations with the AV during the inspection, the AV team immediately evaluated the animals and determined that they were exhibiting no signs of heat exhaustion. The AV team also evaluated the enclosure and acknowledged the lack of adequate shade. Fans were promptly added inside the run-in sheds in use at the time of inspection. Per subsequent communication with the AV, upon fan installation, the interior shed temperatures decreased by 15-20 degrees and the sheep were reported to go inside the run-in sheds soon after the interior fan installation. Additional high-performance fans have been ordered since inspection. Per the regulation, when sunlight is likely to cause overheating or discomfort of the animals, sufficient shade by natural or artificial means shall be provided to allow all animals kept outdoors to protect themselves from direct sunlight. This item was corrected during inspection.

This inspection and exit interview were conducted with facility representatives.

Additional Inspectors:

PAULA GLADUE, VETERINARY MEDICAL OFFICER

Prepared By: MARY ANN MCBRIDE
USDA, APHIS, Animal Care
Date: 16-AUG-2021

Title: VETERINARY MEDICAL OFFICER

Received by Title: Attending Veterinarian
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United States Department of Agriculture
Animal and Plant Health Inspection Service

Customer: 825
Inspection Date: 28-Jul-2021

Species Inspected

Cust No	Cert No	Site	Site Name	Inspection
825	55-R-0001	001	ANIMAL RESOURCES PROGRAM/DOWNTOWN CAMPUS	28-JUL-2021

Count	Scientific Name	Common Name
000018	*Felis silvestris catus*	CAT ADULT
000168	*Macaca fascicularis*	CRAB-EATING MACAQUE / CYNOMOLGUS MONKEY
000289	*Macaca mulatta*	RHESUS MACAQUE
000011	*Sus scrofa domestica*	DOMESTIC PIG / POTBELLY PIG / MICRO PIG
000026	*Ovis aries aries*	SHEEP INCLUDING ALL DOMESTIC BREEDS
000309	*Chlorocebus pygerythrus*	VERVET
000821	**Total**	