

Annual Report of Research Facility

Reference: APHIS Form 7023

**Oregon Health & Science University
Central and Waterfront Campus
3181 SW Sam Jackson Park Road Portland, OR 97239**

Certificate Number 92-R-0001

Summary of Category E procedures and exceptions to the AWA standards and regulations approved by the Central and Waterfront Campuses IACUC from October 1, 2021 through September 30, 2022.

Three protocols were approved allowing the housing of sheep for up to four weeks in stanchions that did not allow them to turn around. The sheep were allowed free access to food and water and were able to stand or lie down. The IACUC accepted scientific justification that this was required to allow withdrawal and infusions of fluids through implanted catheters, continuous monitoring of coronary blood flow, and to prevent the sheep from nibbling at the catheters. Forty sheep were subject to this exception.

One protocol was approved allowing rabbits to be exposed to 100% oxygen for up to sixty-four hours. The chamber used to expose rabbits to 100% oxygen was by necessity of experimental objectives smaller than required for the larger rabbits included in the study. The IACUC accepted the justification that exposure to 100% oxygen was required to induce hyperoxia for the purpose of testing the ability of surfactant mimics to mitigate lung injury. The IACUC also accepted the justification that the chambers were required to reach 100% oxygen exposure. Monitoring of animal wellbeing was increased. Zero animals were subject to this exception.

One protocol was approved for withholding pain relief in prairie voles during tests for pain sensitivity. The IACUC accepted the scientific justification that pain during alcohol withdrawal is a symptom of alcohol dependence. Understanding mechanisms of dependence was the main point of the study. Zero prairie voles were subject to this procedure.

One protocol was approved for performing unanesthetized decapitation in Guinea pigs. The IACUC accepted the justification that sedatives and anesthetic agents used prior to decapitation of animals used in electrophysiological recordings interferes irreversibly with electrical activity of hypothalamic neurons. Three lab personnel with 20-35 years' experience performing this procedure would be the only personnel approved to perform unanesthetized decapitation on Guinea pigs. Zero Guinea pigs were subject to this procedure.

One protocol was approved to allow survival surgeries on marmosets outside the vivarium. The IACUC accepted the justification that procedures in this protocol could not be moved to the surgery suite because a sound-proofed booth and equipment that cannot be moved or repeatedly recalibrated, are integral to the goals of the research. In addition, performing procedures in the investigator's lab, where animals are trained, minimizes stress to the animals. Zero marmosets were subject to this exception.

This protocol expired October 10, 2021 and the PI elected not to reapply for approval during this reporting period.

One protocol was approved to allow survival surgeries on ferrets outside the vivarium. The IACUC accepted the justification that experiments require measuring neurophysiological activity in a controlled acoustic environment that can only be achieved within a sound attenuating chamber.

Neurophysiological recordings must be performed in electrically shielded environments that require precise configuration and tuning. This large and delicate equipment is installed in the lab and cannot be moved. Two ferrets were subject to this exception.

**Oregon Health & Science University
Oregon National Primate Research Center and West Campus
505 NW 185th Avenue
Beaverton, OR 97006-3448**

Certificate Number 92-R-0001

Summary of Category E procedures and exceptions to the AWA standards and regulations approved by the Oregon National Primate Research Center and West Campus IACUC from October 1, 2021 through September 30, 2022.

One exemption was approved by the USDA in accordance with 9 C.F.R. §2.31(d)(1)(x)(C) to allow four major operative procedures on macaques during their lifetime under protocols involving time mated breeding for research purposes. Seventeen animals were subject to this exemption.

One exemption was approved by the USDA in accordance with §2.31(d)(1)(x)(C) to allow up to three craniotomies on rhesus macaques. Zero animals were subject to this exemption. This exemption expired January 23, 2022 and will not be renewed. One remaining animal will undergo no additional survival surgeries.

One protocol was approved allowing rhesus macaques to be fed a nutritionally complete, semipurified diet with alterations to three specific fatty acid compositions. The IACUC accepted the scientific justification that lack of dietary carotenoids and omega-3 fatty acids would allow testing of multiple aspects of retinal and brain health and aging. Four rhesus macaques were subject to this exception.

One exception was approved by the IACUC to reduce the frequency of chemical disinfection of rhesus macaque exercise pens. The IACUC accepted the justification that this would allow the Behavioral Services Unit additional time to acclimate rhesus macaques to their new surroundings with positive reinforcement techniques. The pens would still be washed free of debris daily during this period of reduced disinfection. This exception was determined by the IACUC to be in the best interest of animal welfare. Fourteen animals were subject to this exception.

One exception was approved by the IACUC to extend the age at which a rhesus macaque must be removed from its dam to accommodate floor space requirements as described in the AWAR. When housed with one or more adults, animals over 180 days, but under 1.75 kg could remain in cages appropriate for animals under 180 days of age for a maximum of six weeks. The IACUC accepted the justification that this would reduce the number of animals required to be relocated and the number of

relocations per animal. This exception was determined by the IACUC to reduce stress and be in the best interest of animal welfare. Twenty-six animals were subject to this exception.

One exception was approved by the IACUC to provide 14.4 sq. ft. floor space for socially housed mothers and infants. Though the square footage is less than the 14.6 sq. ft. the standards require, this would provide animals a more complex housing space by incorporating a tunnel into the configuration. The IACUC accepted the justification that this allowance would provide for the space needs of the infants without forcing relocation of neighboring animals, thereby better serving the wellbeing of the colony as a whole. Sixteen animals were subject to this exception.

One exception was approved by the IACUC to allow more infant and juvenile macaques to be housed in a space than would typically be permitted for the total housing floor space according to USDA regulations. The IACUC accepted the justification that, by innovation of reconfiguring cages, this meets the requirement outlined in 9 CFR AWR 3.80 c) "Innovative primary enclosures not precisely meeting the floor area and height requirements...but that do provide NHPs with a sufficient volume of space and the opportunity to express species-typical behavior, may be used at research facilities when approved by the Committee...". Zero animals were subject to this exception.

One exception was approved by the IACUC to allow implementation of an emergency contingency in which the interval between sanitization of nonhuman primate primary enclosures is increased from every 2 weeks to every 4 weeks. Daily cleaning remains unchanged. ABSL-3 cages will continue on an every 2-week cage change frequency. Containment and sequester caging will be prioritized for an every 2-week cage change. Cages and EPEN enclosures will be visually evaluated daily. If they look visibly soiled, despite daily cleaning, they will be prioritized for cagewash or full sanitation. While not expected, ARRS staff will also monitor for clinical concerns which could be related to changes in environmental sanitation. The IACUC accepted the justification that this was needed due to temporary significant staff shortages as a result of the pandemic and a shortage of the national work-force. ARRS has reported back to the IACUC monthly on EQS staffing metrics and any impacts of delayed cage sanitation. No impacts on animal welfare have been reported.

IACUC-approved Exceptions

9 CFR Part 3 Subpart D Nonhuman Primates 3.84 (b) Sanitation of primary enclosures and food and water receptacles

The Emory Primate Center has an IACUC approved temporary exception for sanitization frequency of non-human primate (NHP) caging. The exemption approves the frequency of primary enclosure sanitization by cage wash to extend to up to every 12 weeks; this interval was determined based on the balance between animal welfare, the need to sustain colony operations to provide animals for scientific research and personnel availability. The EPC continues to perform daily hand cleaning of every NHP cage. To ensure continued animal welfare, all daily animal husbandry and cleaning practices (e.g. hand washing cages) will continue to occur daily or more often if necessary. Most caging will be sanitized in the cage washer, as scheduled or within 4 weeks, but we are requesting up to 12 weeks. This exemption is necessary to ensure animal welfare while achieving the research goals and ensure availability of personnel due to the continued nationwide impacts of the pandemic on labor shortages. To verify that animal welfare was not compromised, the EPC veterinarians reviewed data examining the clinical effect of an extended sanitization cycle on NHPs in caging and presented it to the IACUC. The IACUC reviews and approves this exception periodically. The data did not identify any clinical concerns with this cage wash cycle. Once EPC has been able to fill open staffing positions, they will no longer need this exemption. This exception applies to 600 *Macaca* spp.

9 CFR Part 2 Subpart C Institutional Animal Care and Use Committee (IACUC) - IACUC Review of Animal Activities 2.31(d)(1)(x)(C)

On December 11, 2019 Emory University received an exception letter for permitting more than one survival surgery involving three Rhesus Macaques in order to conserve overall animal use. The letter states the following “The request for an exception is **approved from December 11, 2019 to July 17, 2022** as a Special Circumstance. These animals that underwent craniotomies under one study, will be used in a different study for which craniotomies are required, reducing the need to sacrifice additional animals to achieve the same purpose. The surgeries are to be performed under protocol #201900088 during the approval period. Emory University must reflect this exception on its Annual Reports for each year within the approval period as required under Title 9 Chapter 1 Subchapter A Section 2.36(b)(3).” All 3 animals were assigned, and the research completed by July 2020. This exception is no longer needed but being reported as required by USDA.