

**University of Colorado Boulder  
Office of Research Integrity  
Institutional Animal Care and Use Committee  
SOP #9**

**Tracking Animal Use**

**Effective Date: 12/19/2012**

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**Version: 4**

**PURPOSE**

This SOP outlines the procedures for tracking animal use to ensure that the number of animals used in a protocol does not exceed the number approved by the Institutional Animal Care and Use Committee (IACUC). The Animal Welfare Regulations and PHS Policy require that all animals generated or obtained for research, testing, or teaching must be counted against an approved protocol. The species should be appropriate for the experimental aims and the protocol must justify the number of animals needed. Accurately tracking animal numbers is therefore central to the IACUC mission.

**A. DEFINITIONS OF ANIMAL AGE**

While no definition will be completely accurate for all species or circumstances, working definitions for the University of Colorado Boulder Animal Care Program include the following:

- **Embryonic is defined as:**
  - During normal gestation/Fetal stages (mammals);
  - No swimming motion and no evidence of absorbing the yolk sac (aquatics, some avian);
  - Prior to hatching from egg (avian, reptile species)
  - Embryonic animals are not counted before they hatch
- **Neonate is defined as:**
  - After birth (mammals);
  - Has swimming motion and is absorbing the yolk sac (aquatics); E.g: 3 days post-fertilization (dpf) for Zebra fish.
  - After hatching from egg (avian, reptile species)
- **Adult is defined as:**
  - Those animals which are 'mature';
  - Have aged beyond the weaning date (for the species); Are able to reproduce;
  - Free swimming and no longer dependent upon the yolk sac (aquatics)

**B. GUIDANCE FOR JUSTIFYING ANIMAL NUMBERS**

1. The protocol must clearly state the proposed number of animals to be used along with the method of determining the quantity needed, such as:
  - The number needed to achieve statistically significant results calculated with a power analysis (cite tests used or statisticians consulted)
  - Scientific literature, past experience, results of a pilot study, requirements of the FDA or other federal agency (cite relevant references, federal code, regulation or standard)
  - International testing requirements (cite code, regulation, or standards);
  - The number of students and/or animal and procedures needed to learn.
2. Breeding Protocols. To assist the IACUC in reviewing breeding colony protocols, the following information should be included:
  - Estimated number of breeders needed to produce desired numbers;
  - Estimated number of replacement breeders held (i.e., for rodents, this is usually 2 to 3 x number of breeders used at one time);
  - Estimated number of animals needed for manipulations.
3. Embryonic Animals.
  - Embryonated Eggs: Research conducted only on embryonated eggs does not need to be described in an IACUC protocol but please contact the Office of Animal Resources (OAR) and

the IACUC Office so they are aware of this research being conducted on campus in case any of the eggs do hatch.

- Embryonic mammals: While not “reportable” in the same sense as adults or neonates, the number of embryonic mammals needed for a project is approximated on the protocol application in order to estimate the number of pregnant females and breeding males required to produce the necessary number of embryonic animals for research purposes.

#### 4. General Procedures

- a. Justify the number of animals needed for a protocol.
- b. Once a protocol is approved, the animal use will be tracked to ensure that the number of approved animals is not exceeded.
- c. Before purchasing, breeding, capturing, or transferring animals, the PI or designee will check the number of animals needed against the approved number of animals remaining.
- d. The PI or designee will submit an amendment for IACUC review and approval before exceeding the number of animals approved on a protocol.
- e. When a protocol is re-written after three years and given a new approval date, the number of animals that are housed under the old protocol number must be transferred from the old protocol number to the new protocol number and deducted from the new protocol; the PI should therefore include those numbers in their animal numbers justification.

### C. TRACKING ANIMAL USAGE

All animals generated or obtained for research, testing, or teaching must be counted against an approved protocol once weaned, ordered, or wild-caught. The IACUC may request a review of a protocol's animal tracking records at any time. The IACUC keeps track of animal use centrally and places updates from the investigators into the central tracking tool, either an electronic document or database.

#### 1. Ordering/Purchasing Animals from a commercial vendor

- a. Animals that need to be ordered for CU Boulder are centrally ordered by the Office of Animal Resources (OAR). The PI or designee should use the Animal Order Form in Topaz.
- b. Once an animal order is placed in Topaz, the animals ordered will be deducted from the total number of animals approved on a protocol.
- c. When ordered animals arrive, OAR staff will create a receipt in Topaz verifying the actual number of animals received. Any extra animals in an order may be utilized by the PI if that doesn't exceed the approved number of animals on the protocol. If the PI does not wish to utilize the extras, they may be transferred to a central holding protocol, an OAR training protocol, or another experimental protocol.

#### 2. Importing Animals from a non-commercial source

- a. An Import Request Form must be sent to OAR or entered in Topaz to start the import process.
- b. The import source and species of animal the PI or designee intends to import must be described in the animal use protocol. If the species is not described, the IACUC must review and approve an amendment adding such information. Changes in animal source, strain, or variety are administrative changes to a protocol except in cases where a strain or variety has a known potential for a negative health effect on the animals. Such cases need to be reviewed by the IACUC.
- c. When the Import Request Form is approved, the number of animals will be deducted from the number of approved animals remaining on the protocol.
- d. If an import request is disapproved or is unsuccessful at any step during the process, the animal numbers will revert to the total available prior to submission of the Import Request Form.

#### 3. Transferring Animals between protocols, facilities, or as a release from quarantine

- a. The IACUC discourages the multiple uses of animals on more than one IACUC protocol. In some cases, however, it may be appropriate to transfer an animal for use on a second

- protocol as deemed appropriate in accordance with IACUC standard operating procedures. USDA approval is required for USDA-covered animal transfers to use an animal under two projects with different scopes.
- b. There are several types of transfers, all of which require the use of an [Animal Transfer Request Form](#). See SOP #32 on Transfer of Animals for further details about this process.
  - c. When the IACUC office receives a request to transfer animals, between protocols, the number of animals to be transferred to the RECEIVING protocol is deducted from the protocol in the Topaz. Animals will have already been counted against the DONOR protocol via the ordering, breeding, import, or transfer mechanism.
  - d. If an animal transfer is disapproved at any step along the process, the transfer will not be entered into the Topaz system and animal numbers will not be affected.
4. Breeding Animals in an OAR managed facility
- a. The PI must include a description of breeding methods, whether monogamous, trio, harem, or other, in their protocol for IACUC review and approval.
  - b. The PI or designee will request new cage cards for weaned cages in order to initiate deduction of the number of animals from the protocol. All cages weaned will be entered in the Topaz system's Weaning Form by OAR to apply the number of weaned animals to the animal usage of the protocol.
  - c. All rodents are counted when weaned. The exception would be if the rodents are used for research and euthanized before weaning (e.g. genotyping, experiments), at which time they will be counted. Animals that are not the correct genotype for the research must still be deducted from the number of animals approved. In this case the researchers will notify the [OAR office](#) of the number of rodents used and euthanized prior to weaning that would not otherwise get counted at weaning. For reporting animal usage: <http://www.colorado.edu/vcr/oar/oar-forms/animal-usage-report>
  - d. Animals bred but not used for genotyping or experiments (i.e. only the pregnant Dam is needed): The research protocol should include an explicit statement in the protocol that animals bred and not needed for experiments will be euthanized prior to weaning or transferred to another protocol, when possible, in accordance with SOP 32.
5. Breeding animals in a satellite facility
- a. The PI must include a description of breeding methods, whether monogamous, trio, harem, or another method, in their protocol for IACUC review and approval.
  - b. All animals are counted when born (see definitions above for neonates). **The PI will report the number of animals born in Topaz at least monthly.**
6. Tracking Animals Used in Field Research
- a. Unless otherwise stated in the protocol, animals should be counted at point of capture whether they are the specific animal needed for that field assessment or not.
  - b. The PI or designee of a field research protocol must keep track of the number of animals used during the field season and report the number in Topaz. **The researcher will submit an amendment to the IACUC for review and approval before exceeding the total approved number of animals per species.**
  - c. PIs or their designees must receive prior approval before housing animals captured in the field.
7. Tracking Animals Captured in the Field and Transported to Campus
- a. Principal investigators who intend to bring animals on campus from the field must alert the IACUC Office and the Attending Veterinarian by email with the species and numbers of animals at the time of transport to campus. The IACUC Office and Veterinarian should be notified of the transport of eggs or other embryos onto campus, but the animals will not be counted until they are hatched.
  - b. Breeding/hatching on campus: **For labs hatching eggs or breeding wild captured animals, at least monthly, the researcher will update of the number of animals born, since transferred to the campus, in Topaz.**

8. Tracking USDA-covered species  
USDA-covered species exclude fish, birds, reptiles, amphibians, and rats and mice of the genus *Rattus* and *Mus* bred for research. USDA-covered species must be tracked by the highest pain category of procedures conducted on them for research. The annual report to the USDA includes the number of animals used under each pain category and should be reported to the IACUC Office in October of each year.
  - a. All animals should be tracked for inventory purposes (acquisitions, births, deaths, euthanasia, sales, transfers), but the only animals that are required to be reported on the annual report are those used or held for use (column b) in research activities.
  - b. Stillborn animals, unless this is study related, are not reportable to the USDA on the annual report.
  - c. Those animals that die "spontaneously of natural causes after birth" also will not need to be reported unless it is study related, and then the death is listed under USDA Pain Category C.
  - d. If breeding or manipulation for research purposes of pregnant females or their fetuses or offspring is being done on covered animals, then stillbirths or spontaneous deaths will need to be reported.
  - e. Incidents of USDA-covered species that die in transport are reported immediately to the USDA through the VMO, not on the USDA annual report, so that transportation can be evaluated; these animals would not be counted on the protocol.
9. Counting multiple uses of animals
  - a. The IACUC must review all procedures including multiple procedures on a single animal.
  - b. Multiple survival surgeries must be scientifically justified and approved by the IACUC before implementation. Animals with previous survival surgery on one protocol cannot be used for survival surgery on a second protocol unless approved by the IACUC. USDA approval is required before USDA-covered animals can be transferred for use on two different projects.
  - c. Animals must be counted once against each protocol in which they are used.
  - d. If a terminal procedure is conducted under one protocol, however, and tissue is taken for use on another protocol, the animal is only counted against the first protocol.

There is additional Animal Tracking information on the [FAQ page](#) of our website.

#### **REFERENCES**

United States Department of Agriculture, 9 CFR Parts 1, 2, and 3.  
PHS Policy on the Care and Use of Laboratory Animals, OPRR, 1996.  
8th Edition: The Guide for the Care & Use of Laboratory Animals  
OLAW Web Site: <http://grants.nih.gov/grants/olaw/>