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Standard Operating Procedure

1. Purpose

To outline the minimum standards of care for rodents based on the Public Health Service Policy and the ILAR *Guide for the Care and Use of Laboratory Animals*.

2. Scope

All units providing animal care for rodents must meet or exceed these minimum requirements.

3. Responsibilities

The Principal Investigator (PI) is responsible for ensuring that animal care units housing animals that are used in their Animal Care and Use Protocols (AUPs) are complying with this Standard Operating Procedure (SOP).

4. Procedure

Daily Tasks (365 days a year without exception):

- Provide nutritionally adequate ad libitum feed, unless otherwise approved in AUP. Food must be uncontaminated and fresh.
- Rodent chow must be used within 6 months of the milling date unless manufacturer guidelines document a shorter or longer expiration date.
- Provide sufficient potable water.
- Observe each animal and check for health concerns.
- Record and report sick or dead animals in accordance with Daily Observation SOP (AV 20-105).
- Change heavily soiled or flooded cages when discovered.
- Keep room clean and organized.
- Record minimum and maximum temperatures (ideal room temperature range for rodents is 68-79°F).
- Record completion of daily room tasks, initial and date.

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Weekly Tasks:

- Provide clean static micro-isolator cages at least weekly.
- Provide clean open, solid bottom cages at least weekly not to exceed 10 days.
- Provide clean drop pans with clean bedding for wired hanging cages at least once per week with additional changes as needed depending on the age, size and strain of rodent.
- Provide clean water bottles and sipper tubes at least with every cage change (7-14 days). Replace Hydropac water pouches as needed to insure animals always have adequate water supply (no maximum change interval required).
- Clean/disinfect cage change stations and check pre-filters.

Biweekly:

- Provide clean cages to individually housed mice (individually housed rats must follow group housed change schedule).
- Provide clean individually ventilated cages (IVC).
- Provide clean wire bottom cages and racks.
- Clean automatic water delivery valves during the primary enclosure cleaning.
- Housing rodents in wire hanging cages is subject to Institutional Animal Care and Use Committee (IACUC) approval and must be justified in the animal care and use protocol as a husbandry deviation.
- Disinfect racks with automatic watering systems.
- Provide clean feeders or wire lids.
- Provide clean or new environmental enrichment.

Monthly:

- Clean micro-isolator tops.
- Provide clean filters as needed.
- Disinfect shelf racks.

Quarterly:

- Disinfect the animal room (includes walls, floors and ceilings) at least quarterly or when species housed in room changes.
- Clean outside surface of IVC racks.

Infrequent or Intermittently Scheduled Tasks:

- Follow manufacturer's guidelines for complete breakdown of rack for cleaning.
- Filters must be changed following manufacturer guidelines.



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- Cage changing stations should have their airflow checked in accordance with manufacturer’s specifications/recommendations. It is recommended not to exceed every 3 years.

Facilities:

- Refer to Standard Operating Procedure for Facilities Maintenance (AV 50-102).
- If room temperature falls outside of the ideal range for longer than a brief period, Campus Services must be contacted.
- Minimum of 10-15 fresh room air exchanges.
- Floors should be moisture-resistant, nonabsorbent, impact-resistant, and relatively smooth.

Caging:

- Recommended floor space per rodent:
 - Mouse cage size requirements:

Weight of Animal (g)	Floor Area/Animal (in ²)	Height (inches)
<10	6	5
Up to 15	8	5
Up to 25	12	5
> 25	≥15	5
Female + litter	51	5

- Rat cage size requirements:

Weight of Animal (g)	Floor Area/Animal (in ²)	Height (inches)
<100	17	7
Up to 200	23	7
Up to 300	29	7
Up to 400	40	7
Up to 500	60	7
>500	≥70	7
Female + litter	124	7

- Larger animals may require more space to meet the performance standards.
- Facilities will have specific density guidelines that pertain to their caging.
- Cages must be in good condition and escape-proof.



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- Cages with cracks which may cause injury to the animals must be discarded.
- Caging and water bottles designed to be seen through should be transparent enough to allow for observation of the animal and/or water level. Caging/water bottles that are cloudy must be cleaned or discarded when they are no longer able to be seen through.

Identification:

- Rodents can be individually identified in addition to having an appropriately labeled cage card (see SOP for Identification of Animals, AV 20-106).

Mice	Ear tag, ear notch, tail/toe tattoo, microchip, non-toxic marker
Rats	Ear tag, ear notch, tail/toe tattoo, microchip, non-toxic marker

Environmental Enrichment:

- Refer to SOP for Environmental Enrichment (AV 30-102).
- Examples of rodent enrichments that promote species-typical behaviors include pair or group housing, shelters (tubes, tunnels, igloos, and houses), nesting materials, gnawing and foraging materials, and running wheels or other structures to increase locomotion.
- Rodents should be pair or group housed (maximum number of animals per cage is based on cage size and animal weight) unless protocol has IACUC approval for an exemption.
- Rodents that are approved to be singly housed must be provided with another form of enrichment.
- Devices used for environmental enrichment must be easily sanitized or disposed of when cages are changed.
- Devices must be checked regularly for wear and discarded if they pose a safety hazard or are no longer functional.

Euthanasia:

- Veterinary staff may euthanize sick animals following approved methods in the current *AVMA Guidelines on Euthanasia*.

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5. References

1. Institute of Laboratory Animal Resources: Guide for the Care and use of Laboratory Animals, National Academy Press, Eighth Edition (http://www.nap.edu/catalog.php?record_id=12910).
2. Animal Welfare Act and Animal Welfare Regulations. United States Department of Agriculture, 2013 (https://www.aphis.usda.gov/animal_welfare/downloads/Animal%20Care%20Blue%20Book%20-%202013%20-%20FINAL.pdf).
3. National Institutes of Health: Public Health Service Policy on Humane Care and Use of Laboratory Animals (<http://grants.nih.gov/grants/olaw/references/phspol.htm>).
4. The Federation of Animal Science Societies: Guide for the Care and Use of Agricultural Animals in Research and Teaching, 3rd Edition, 2010 (http://www.fass.org/docs/agguide3rd/Ag_Guide_3rd_ed.pdf).
5. AVMA Guidelines for the Euthanasia of Animals: 2013 Edition (<https://www.avma.org/KB/Policies/Documents/euthanasia.pdf>).

6. Definitions

1. AV – Attending Veterinarian – responsible for the health and well-being of all laboratory animals used at the institution
2. AVMA – American Veterinary Medical Association – a not-for-profit organization for advancing the science and practice of veterinary medicine to improve animal and human health
3. SOP – Standard Operating Procedure – established or prescribed methods to be followed routinely for the performance of designated operations or in designated situations
4. IACUC – Institutional Animal Care and Use Committee – responsible for assessment and oversight of the institution’s animal care program components and facilities
5. Chair – Chairperson of the IACUC
6. PI – Principal Investigator – a Central Oregon Community College employee having the background and training in scientific and administrative oversight necessary to conduct and manage the proposed study
7. AUP – Animal Care and Use Protocol – protocol created by the principal investigator of the proposed research, testing, or educational study
8. Protocol – Animal Care and Use Protocol – protocol created by the principal investigator of the proposed research, testing, or educational study
9. COCC – Central Oregon Community College
10. Guide – the *Guide for the Care and use of Laboratory Animals*



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- 11. AWA – Animal Welfare Act – requires that minimum standards of care and treatment be provided for certain animals bred for commercial sale, used in research, transported commercially, or exhibited to the public
- 12. PHS – Public Health Service – establishes guidelines for the proper care of animals to be used in research
- 13. Clinical veterinarian – the Attending Veterinarian or designee

Revision	Author	Revisions Made	Effective Date	Approval
1	Cindy Elston	<ul style="list-style-type: none"> • New SOP 	10/14/16	Cindy Elston (AV)
		<ul style="list-style-type: none"> • 		