Title: Husbandry Care for Salamanders

I. Purpose:

The purpose of this policy is to outline the minimum standards of care for Salamanders.

II. Policy:

All departments providing care for salamanders must meet or exceed these minimum requirements which are based on the Public Health Service Policy, and the ILAR Guide for the Care and Use of Laboratory Animals.

III. Procedure:

All facilities housing Tiger Salamanders, must follow the conditions specified in the UCD’s California Department of Fish and Game Permit to import, transport, or possess Research Detrimental Species (Permit # 537) For example water being drained from tanks housing tiger salamanders must be screened or treated to prevent escape of tiger salamanders and release of reproductive material. A copy of this permit must be posted near or on the Vivarium door.

Daily: (365 days a year without exception)
Rinse tanks or as needed based on cleanliness. Check room temperature 65-70°F (18-21°C), (this may be adjusted as needed to emulate natural seasonal temperature variations) Observe each animal and check for health issues. Signs to look for include red (or other) discoloration of the skin, failure to feed properly (or weight loss), open cuts or abrasions, bloating, and lethargy. Contact Campus Veterinary Services to report sick salamanders. Check that each tank has individual identification and the total salamander count, and adjust posted salamander count as needed. Record deaths and euthanasia on the room log sheet. Document room activities on room log sheet.

Weekly: Feed should be based on manufacturer’s recommendations. This can range from daily to 2 times per week, depending on the type of food offered. Wash tanks/containers weekly (or more frequently as needed).

Biweekly: Sweep/squeegee floors to remove dust, dirt, and excess water. Wipe down shelves used for housing when containers are removed for washing. Follow the UCD Housekeeping Policy.
Monthly:
Disinfect and sanitize shelves/racks and scrub brushes, sponges, enrichment devices, holding containers, and tank specific nets. Disinfect floors

Identification: Each tank or holding container should be individually identified and have total salamander count.

Environmental Enrichment: All salamanders should be provided with a refuge or wetpad as an environmental enrichment. Other forms of enrichment are acceptable as long as they are non-porous, do not harm the salamanders, and can be cleaned and disinfected.

Euthanasia: 2013AVMA Guidelines on Euthanasia

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<th>Acceptable Methods</th>
<th>Conditional Methods</th>
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<td>As appropriate by species, barbiturates, dissociative agents and anesthetics as specified, Pharmaceutical grade buffered tricaine methanesulfonate(MS 222), benzocaine hydrochloride</td>
<td>As appropriate by species, inhaled anesthetics as specified, CO2, penetrating captive bolt or firearm, manually applied flint force trauma to the head, rapid freezing</td>
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Facilities:
Floors should be moisture-resistant, nonabsorbent, impact-resistant, and relatively smooth. Illumination schedules should be limited to a duration that will not compromise the well-being of the species being housed. UV lighting is not required, but a regular light-dark cycle mimicking that of the salamanders’ native geographic area should be maintained using incandescent lighting, preferably controlled by a timer. Regular monitoring of the HVAC system is important and is best performed at the room level. Heating and air in salamander rooms should be controlled in a manner that supports species specific needs. Room temperatures should typical be maintained between 65-70° F (18-21° C), but the temperature may vary when mimicking seasonal variation is required, for example for breeding.

Caging:
Holding containers or tanks should be constructed of non-porous material that can be cleaned and disinfected regularly. Holding containers or tanks should provide a safe environment and not be constructed of materials that may cause injury to the salamanders. Primary enclosures should meet the general needs of individually or group housed amphibians based on species needs, behavior, and goals of the study. The volume of water provided should be based on the size of the larva. Post hatching larva should be kept in approximately 3oz of water for the first 2 weeks, and then moved to adult size containers. Filtration is not required if water changes are frequent enough to limit the accumulation of ammonia. The cages of tiger salamanders require more frequent cleaning because of the amount of waste produced. Water offered should be Dechlorinated and chloramine free water, or charcoal filtered modified Holtfreter’s solution. Adult size and older salamanders should not be housed with smaller salamanders.

Feeding:
Tiger salamanders have a healthy appetite, and should not be overfed as they will become obese. Larva can be fed aquatic invertebrates such as Daphnia and brine shrimp, insects, small fish, and worms. Adults can be fed a selection of feeder insects such as crickets, earthworms,
and wax worms, a selection of wild caught insects as long as the area from which these are collected is not sprayed with pesticides.

**OLAW References:**


