

- Requirements for Working with Animals
- Important Contact Information
- Animal Care Issues
- Health Cases
- Handling and Restraint
- Injections
- Blood Collection
- Euthanasia
- Appendix

While working with your animals, it is important to be aware of the heavily regulated animal research environment and threats. There are federal regulations, state regulations, and UCLA- ARC (IACUC) policies. There is also pressure from the outside world and the animal rights movement. It is important to strive to employ the 3R's - Replacement, Reduction and Refinement.

DLAM is here to ensure proper care and treatment of your animals. This class will explain the biology of rats, the health issues that arise, and the health reporting system used by DLAM. The lab should be able to recognize and manage unhealthy animals. It is the responsibility of the lab to respond to all animal health issues. The lab should also be cognizant of the mistreatment of animals and know how this is handled at UCLA and by the ARC.

Training Requirements for Working with Animals at UCLA

Revised 5/13/13

1. ARC General Certification (<u>CITI</u> Program Training)

https://www.citiprogram.org/

All personnel listed on an ARC protocol (including all Principal Investigators and Faculty Sponsors, even if they will not have direct animal contact) must complete the online CITI "Animal Research" training course prior to approval to work with animals. In addition, all active animal users must be re-certified every three years.

<u>NEW animal users</u> must complete the <u>CITI</u> training prior to being approved to work with animals, and will need to be re-certified every three years thereafter.

As of September 1, 2009, all <u>**CURRENT** animal users</u> must be re-certified three years after the date of their previous certification. (For example, if you completed certification on July 1, 2008, your certification to work with animals will expire on July 1, 2011.)

Please note that, as of September 1, 2009, prior exemptions to the ARC Certification Test are no longer honored. However, certifications and exemptions for species-specific training and aseptic surgery will remain valid. For more information: <u>http://oaro.research.ucla.edu/certification-info</u>

2. Medical History Questionnaire (MHQ):

http://mhq.healthsciences.ucla.edu/

All UCLA staff and/or students who handle animals or animal tissue, or who have access to the vivarium, must complete this form each year. All questions are required.

3. Mouse Users Training:

https://portal.dlam2.ucla.edu/EducationTraining/DLAMTraining/Pages/default.aspx All mouse users must complete two phases of training:

- 1. Complete the online course entitled "Working with Mice in Research Settings", which is available via the DLAM website (see link above).
- 2. Once the online course has been completed, you will be able to print your certificate of completion and enroll in the next available session of the hands-on portion: Mice Users Wet Lab.

4. Rat Users Training:

https://portal.dlam2.ucla.edu/EducationTraining/DLAMTraining/Pages/default.aspx All rat users must complete two phases of training:

- 1. Complete the online course entitled "Working with Rats in Research Settings", which is available via the DLAM website (see link above).
- 2. Once the online course has been completed, you will be able to print your certificate of completion and enroll in the next available session of the hands-on portion: Rat Users Wet Lab.

5. Barrier Training (required for all mouse and rat users):

https://portal.dlam2.ucla.edu/EducationTraining/DLAMTraining/Pages/default.aspx All rodent users that will require barrier facility access will typically require two phases of training:

- 1. Complete the online course entitled "Working in a Barrier Facility", which is available via the DLAM website (see link above). *Note: A certificate from this online course is also a prerequisite for other barrier walkthroughs (CHS 6V Rat, Warren Hall and TLSB).*
- 2. Once the online course has been completed, you will be able to print your certificate of completion and enroll in the next available session of the CHS B-Floor Barrier Walkthrough.

For areas that do not currently have online enrollment, contact the area supervisor for a guided tour. The Division of Lab Animal Medicine (DLAM) maintains the following areas:

Lab Access Barriers:	DLAM Maintained Barriers (no lab access):
NRB-3/4/ floor (B09 suite)	BSRB - Arch (suites)
Gonda	4 th Floor- CHS
MRL	NRB-B Floor (B05 suite)
Warren Hall	5 rooms-CHS B Floor (BV366, 518, 613, 623, 625,
JSEI	service 1/2 B6:065)
CHS / PHB-B Floor	Tier 3
2V CHS	Rehab
6V CHS	ART Lab
BRI	
TLSB	

Facilities Run by DLAM:	Biocontainment Facilities:
Franz Hall	CNSI
Life sciences	NRB 3 rd floor (2 rooms)
Slichter Hall	3V CHS
Rehab	BSRB (specific area)
	AR-173

6. Aseptic Surgical Techniques (required if performing or assisting with survival surgery).

https://portal.dlam2.ucla.edu/EducationTraining/DLAMTraining/Pages/default.aspx Two phases of training are required:

- 1. Complete the online course entitled "Aseptic Surgical Techniques", which is available via the DLAM website (see link above).
- 2. Once the online course has been completed, you will be able to print your certificate of completion and enroll in the next available session of the hands-on portion: Aseptic Surgical Techniques (Wet Lab).

7. Suture Training for Beginners (optional training *only* for those that will be performing or assisting with surgery).

https://portal.dlam2.ucla.edu/EducationTraining/DLAMTraining/Pages/default.aspx Two phases of training are required:

- 1. Complete the online course entitled "Suture Training for Beginners", which is available via the DLAM website (see link above).
- Once the online course has been completed, you will be able to print your certificate of completion and enroll in the next available session of the hands-on portion: Suture Training for Beginners (Wet Lab). *Note: both the online and hands-on portions of Suture Training for Beginners must be complete in order to take the Advanced Suture Training Class (currently offered by appointment only).*
- 8. Biocontainment Training (required for access to all biocontainment facilities):

https://portal.dlam2.ucla.edu/EducationTraining/DLAMTraining/Pages/default.aspx Three phases of training are required:

- 1. Complete the online course entitled "Working in a Biocontainment Facility", which is available via the DLAM website (see link above).
- 2. Complete the required EH&S Classes: Biosafety A, B, Cs - Biosafety Level 2 (BSL2) Biosafety Level 2 with Biosafety Level 3 practices (BSL2+) Biological Safety Cabinet (BSC) Bloodborne Pathogens (BBP) Medical Waste Management (MWM) *Please contact EH&S to obtain a copy of your current transcript*: training@ehs.ucla.edu
- 3. Print your certificate of completion for the online DLAM course (step 1) and enroll in the next available session of the CHS 3V Biocontainment Barrier Walkthrough. *Note: the CNSI BSL2 Barrier Walkthrough requires a separate verification of requirements before enrollment is allowed.*

Note: You must bring the certificate of completion for the online course "Working in a Biocontainment Facility" and proof of completion (e.g. transcript) for all required EH&S courses. Walkthroughs will not be carried out if the requirements listed above are not met. Failure to provide proof of EH&S training will result in subsequent re-enrollment block and/or a \$50 recharge to your PI's account.

8. Species Specific Training/ Procedure Specific Training:

Contact DLAM Training: <u>dlamtraining@mednet.ucla.edu</u>

9. Your name must be listed on an active protocol:

An amendment to the protocol must be submitted to the ARC by the Principal Investigator. <u>http://oaro.research.ucla.edu/calendar</u>

10. Vivarium Access:

Go to the Bruin card website to set up an account and a pin number: <u>http://secure.bruincard.ucla.edu/bcw/web/Home.aspx</u> (Access is granted once you are on the active protocol.)

11. Environment, Health & Safety (EH&S) Training:

Additional training may be required specific to your protocol (hazards you may encounter during the course of performing your job duties.) http://www.ehs.ucla.edu (once there, go to the Training section - bottom right)

12. For more info, please contact: Gene Rukavina, DLAM Training Coordinator. Email: <u>dlamtraining@mednet.ucla.edu</u> Phone/voicemail: (310) 794-0282

13. Education & Training FAQs (Frequently Asked Questions): https://portal.dlam2.ucla.edu/EducationTraining/DLAMTraining/Pages/DLAMEducationFAQs.aspx

12. DLAM Class Directions (must be signed in to the DLAM website): https://portal.dlam2.ucla.edu/EducationTraining/DLAMTraining/Pages/DLAMClassDirections.aspx

13. View Session Calendar (must be signed in to the DLAM website): https://portal.dlam2.ucla.edu/EducationTraining/Lists/Sessions/AllItemsCal.aspx

Contact Information for UCLA- Department of Lab Animal Medicine



Veterinary Staff, Veterinary Technician Staff, Animal Supervisors Access Forms, Cage Card Forms, Animal Ordering, Training Pharmacy and Laboratory Services: https://portal.dlam2.ucla.edu/Pages/Default.aspx

Animal Research Committee, ARC Certification, and UCLA policies on animal care: <u>http://oaro.research.ucla.edu/</u>

Important DLAM Numbers

	Phone	Pager
Dr. Lisa Williams (Clinical Specialist)	794-2455	96667
Dr. Joanne Zahorsky-Reeves (Director of Rodent Medicine)	794-0255	95351
Tensie Palmer (main DLAM number to call)	794-2571	

Training

Gene Rukavina (Training Coordinator) dlamtraining@mednet.ucla.edu

DLAM Pharmacy

- To place an order for pick up, please use email: <u>dlampharmacy@mednet.ucla.edu</u>
- Provide the following: Principle Investigator Recharge ID Protocol

Special orders:

Email is the best way to contact: <u>dlampharmacy@mednet.ucla.edu</u> Pharmacy Request Form:

https://portal.dlam2.ucla.edu/TechOperations/Form Library/Pharmacy Request Form.pdf

Reference books:

<u>Guide for the Care and Use of Laboratory Animals Eighth Edition (2011)</u>: Includes guidelines followed by UCLA as required by AAALAC accreditation. See <u>http://www.nap.edu/catalog.php?record_id=12910</u> for information on ordering. <u>AALAS ALAT, LAT and LATG Training Manuals</u>: <u>www.aalas.org</u> The AVMA Guidelines for the Euthanasia of Animals: 2013 Edition: https://www.avma.org/KB/Policies/Documents/euthanasia-highres.pdf

Animal Care Specifics



Cage Occupancy Limits

Lab is responsible for weaning cages and separating over-crowded cages. Standard rat shoebox style cages (144 in.²) may house no more than the following number of rats per cage, depending upon weight:

#/cage	Weight
8	<100 grams
6	100-200 grams
4	201-300 grams
3	301-400 grams
2	401-500 grams
1	>500 grams

No more than one (1) adult and one (1) litter of rats may be housed in a standard (144 in.²) rat shoebox style cage. The allowable number of rats per "non-standard" cage will be calculated based upon the dimensions of the floor space of the cage and weight of the rats as per the following:

In.²/Animal	Wt. (grams.)
17	<100
23	up to 200
29	up to 300
40	up to 400
60	up to 500
>70	>500

Food/ Water- Rodents are given food and water ad lib unless the protocol specifies something different

Allergies- due to the high content of allergens in the rat fur, skin and urine, it is very important to follow PPE requirements. Allergies will develop if proper precautions are not taken.

Dress code- In addition to proper PPE, long pants and closed-toed shoes are required to enter the Vivarium.

Other information- Do not open cages outside of laminar flow hood. Fan and light must be turned on and the surfaces sprayed generously with supplied disinfectant before cages can be opened.

*These are standard requirements. Always check your protocol for any changes to these rules.

Injury and Disease



Degloving – shearing of the skin from the tail usually caused by trauma or injury. Never grab the rat by the middle or end of the tail.

Facial Dermatitis – This is often an acute to chronic skin disease that may be caused by coagulase positive *Staphylococcus aureus* and affects primarily the skin of cheeks and upper neck in rats. Antibiotic treatment usually corrects this condition within 1-2 weeks.

Chromodacryorrhea – Excessive secretion of porphyrin causing red staining and crusts around the eyes and nose; exhibited by aged, stressed, painful, or sick rats

Mammary Tumors – Up to 50% of SD rats may get mammary tumors. They are usually benign fibroadenomas; they move freely under the skin, are well encapsulated, and do not metastasize. Surgical removal is feasible in consultation with DLAM staff. Recovery is favorable, but reoccurrence is likely.

Health Cases



What happens if an animal gets sick?

1) The animal technician will notify the veterinary technician of a sick animal by placing a blue health check post-it on the cage. You may also do this if you find a sick animal and want it to be seen by the DLAM staff.

2) The veterinary technician and/or the veterinarian will assess the animal's condition and decide on treatment options.

2) You will be contacted about the case. Usually that contact is in the form of an email; for more urgent cases, a veterinarian will call the lab and follow-up with an email. Each email contains information on the location of the animal, a description of its health issue(s), a prescribed course of treatment, information on that treatment (such as how to dilute antibiotics for the drinking water) and a deadline for action.

4) Please note that the ARC policy on "Notification of Investigators with Sick or Injured Animals" stipulates that failure to respond to notifications of health reports before the stated deadline constitutes a serious violation reportable to the NIH Office of Laboratory Animal Welfare (OLAW).

If at any time you have any questions, please contact one of the veterinarians whose contact information appears in the email.

Prescription Medical Treatment

1) Please do not begin treatment before getting instructions from the veterinary staff; these will be in the health case email.

2) The DLAM Pharmacy can provide you will all medications, etc, that are prescribed. Send requests to: <u>dlampharmacy@mednet.ucla.edu</u>. Place the order before going to the pharmacy so it can be ready for you.

3) Treatments and Observations must be accurately documented - it is a medical record. Enter treatments on the orange treatment card on the cage, and initial.
4) You should receive an email informing you the treatment has been successful and can be stopped, or the treatment card will be removed by DLAM AHT staff. To stop medical treatment, consult a facility veterinarian.

Dead animals: Animals found dead in the cages by technicians will be placed in bags, labeled and stored in the fridge of the facility. Lab will be immediately notified by email. Carcasses may be stored up to 3 days before disposal. Animals should be disposed of properly (bagged and placed in fridge or freezer). Bodies, including pups, should not be thrown into the trash.

Handling and Restraint





To remove a rat from its cage or enclosure, grasp the rat at the base of the tail. Never grab the rat by the middle or end of the tail as the skin may be pulled off resulting in a severe degloving injury!



To bodily restrain a rat, place it on a wire cage top or other surface that it can grasp. Gently pull back on the rat at the base of the tail with one hand, and place the other hand over the back and rib cage of the rat with the thumb and forefingers placed directly behind the rat's elbows to push the legs forward so that they cross under the chin of the rat.



An alternate method of restraint involves the same initial steps, but in this case the index and middle fingers are placed immediately behind the jaws of the rat, while the thumb and small finger are placed under the arms on both sides of the chest. The free hand can then be used to provide additional support for the lower part of the rat's body.





Rat "Burritos" can also facilitate restraint without the need for sedation.



A number of commercial restraining devices made of rigid plastic are available for working with rats and can ordered to correspond with the size/weight.







Clear plastic restraint bags are also available through the DLAM Pharmacy or can be made out of a freezer-type bag. These bags are in the shape of a cone and have an opening in one corner that the rat's muzzle extends through. These bags are useful for individuals working alone, and injections may be administered through the bag. Animals should be restrained in such bags for short periods of time only as rats are prone to overheating.





Injections

Subcutaneous Needle size: 23-25g Amount: 5-10ml, 2ml/100g max Where: scruff, dorsolateral thorax







Intramuscular Needle size: 25g Amount: 0.1ml, 0.3ml/site Where: quadriceps, posterior thigh

Intraperitoneal Needle size: 25g Amount: 5-10ml, 2ml/100g Where: lower right quadrant





Intravenous Needle size: 22-25g Amount: 0.5ml/100g max Where: lateral tail vein, retroorbital plexus, saphenous vein





Blood Collection

Total Blood Volume: 20-40ml

Exsanguination: 8-12ml

Amount: 1.25ml/100g every 2 weeks max, unless ARC approval

Where:

Retroorbital plexus

- Requires anesthesia
- Microhematocrit tubes are recommended
- Insert slightly dorsal to the medial canthus

Tail vein or Saphenous vein

- Restraint necessary, sedation optional
- Needle and syringe
- Needle hub and capillary tube
- 23g butterfly with tubing cut off and collection tube





Terminal collection from heart

- Anesthesia required
- On back just lateral to xiphoid process (midline)
- On side just caudal to elbow



See Appendix 1 for detailed instructions on blood collection.

Euthanasia

Euthanasia is defined as a gentle death that is regarded as an act of humane killing with the minimum of pain, fear and distress. It requires proper knowledge of euthanasia concepts, proficient training in methods, and proper animal handling skills

Approved Procedures – Rodents

- Never euthanize animals in the same room where other live animals are present.
- Avoid mixing unfamiliar animals when possible.
- Use caution if you must combine cages. Cage occupancy limits still apply! (Please refer to page 4 of this document.) Pay close attention to ALL combined cages.
- Separate all neonates from larger animals.
- Bag all cages for transport to the CO2 chambers, disinfect bags
- Do not leave animals unattended while euthanizing
- Check tank pressure. Ensure that connections are secure before beginning.
- CO2 flow must be regulated. NO DRY ICE!
- Do *NOT* pre-charge the chamber. Sudden exposure to CO2 at concentrations ≥ 70% causes distress.
- Place cage in CO2 chamber, open the plastic bag and remove the cage top
- Close and lock the chamber lid before turning on CO2 gas



- Confirmation of death: absence of heartbeat must be confirmed!
 - Absence of movement, heart beat, breath, and corneal reflex; blanching/graying of the eyes
- If still alive (heartbeat present), repeat CO2 exposure.
- Non- Biohazardous carcasses- Place in a black, trash bag and secure. Biohazardous carcasses- Place into a red, biohazard bag. Secure. Label with medical waste tag.
- Place into a freezer

Pups (1-14 days) must be separated from adults as they can take up to 20 minutes to expire. <u>AVMA Guidelines for the Euthanasia of Animals</u>: After the pups have been deeply anesthetized with CO2 exposure, decapitate them with a pair of very sharp, large scissors for instantaneous death.

Also See ARC Policy: Euthanasia of Fetuses and Neonates - Mice and Rats

Cervical Dislocation and Decapitation without Anesthesia

- This method is not permitted without ARC (protocol) approval
- Requires training and great skill: improper technique can cause unnecessary distress and prolonged death
- Proper use can cause instantaneous loss of consciousness, a painless death and is considered to be humane
- Does not contaminate tissues