



***Laboratory Animal Resources***

**Investigator  
& Research Staff  
Handbook**



Laboratory Animal Resources  
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On behalf of the Office of the Vice President for Research at Colorado State University, welcome to Laboratory Animal Resources.

Our mission is *"To use our expertise to provide the highest standard of care for laboratory animals in support of the Colorado State University research community"* and everyone in our organization is involved in fulfilling the research mission of the University. The employees of Laboratory Animal Resources, known as LAR, are dedicated to providing quality animal care and contributing to the success of your research. While LAR is primarily known for providing animal care, LAR is also available for other services for investigators including animal acquisition, colony management and research support.

We operate based on our Standard Operating Procedures (SOPs), which have been developed over the years and are constantly under review as improvements become available. It is extremely important that you familiarize yourself with our SOPs as they are designed to protect your research, as well as others on campus. Should you require deviation from our SOPs, it is important to clearly communicate this with the staff so everyone understands the expectations. Our success relies on open and clear communication.

If there is anything LAR can do for you, please feel free to contact one of us by electronic mail or at 970-491-7364.

We look forward to assisting in your research endeavors.

Laboratory Animal Resources (LAR) oversees the care and management of animals used in research and teaching at Colorado State University, principally serving the College of Veterinary Medicine and Biomedical Sciences, College of Natural Sciences, College of Applied Human Sciences, and the College of Agricultural Sciences at five AAALAC-accredited facilities located on main campus, the Foothills campus, and the South Campus.

LAR provides a full-spectrum of animal care and related services including daily husbandry, veterinary medical care, animal acquisition and disposition, consulting, colony management, training, and research support.

## **Facilities**

### ***Animal Holding Facilities***

LAR manages over 52,000 square feet of indoor housing for both small and large animals. Painter Center and the IDRC, the two major LAR maintained areas, are both capable of housing animals at an Animal Biosafety Level 3, and have dedicated suites for this purpose. LAR personnel will assign the appropriate space based on research needs and animal health status.

Quarantine facilities are maintained at Painter Center for incoming rodents to minimize infectious disease within LAR managed facilities. Rodents that are obtained from non-commercial vendors are quarantined for a 6 week period and tested for adventitious rodent pathogens prior to placement within the facility.

Signs are posted at all LAR entry points specifying the Personal Protective Equipment (PPE) that is required for entry. These requirements are in place for the safety of personnel, and the biosecurity of our facilities. Consult specific signage for requirements to each area which may include:

- Lab coat or scrubs are provided for working with animals - long sleeved scrubs are reserved for BSL-3 areas only.
- Facility shoes are available on a limited basis, you may wear close-toed street shoes into the vivarium. In some areas, shoe covers are required and will be provided. -
- Gloves, hairnets, respirators and/or Tyvek suits as appropriate. LAR provides limited types of N95 masks based on departmental employee FIT testing. If you wear a mask that we do not carry, you will need to provide your own. Research personnel are also required to provide their own PAPR equipment, if needed.

### ***Keycard Access***

Personnel are granted keycard access after enrollment in the Occupational Health program, training for facility operations and entry/exit requirements, and ABSL3 training, if applicable. Keycard access will be given to the animal areas relevant to the research and will be issued by LAR, IDRC or VTH depending on the housing location. Some facilities use CSU ID cards (C-Cure Cards) programmed to allow access to appropriate areas of the building and some facilities require keys. Begin the process via the LAR website here <https://www.research.colostate.edu/lar/painter-center-access-for-new-users/>. For LAR Animal vivarium access, a facility tour in conjunction with SOP training specific to investigator use is required prior to keycard approval. To schedule a facility tour, please call the front desk at (970) 491-7364.

You should not use keycards assigned to other staff or investigators. Painter Center loaner keycards are available for persons who have lost, forgotten or are awaiting a keycard. Loaner cards are valid for internal use only (i.e. they will not open the facility entrance) and must be returned to an access card administrator or the receptionist before leaving the building. Loaner cards are NOT available for other areas (VTH, IDRC) and new cards would have to be purchased if yours is lost or stolen

Report lost or stolen keycards immediately for deactivation. The RamCard office issues replacement cards.

LAR offers the following private spaces to perform animal-related work. These can be reserved through Outlook calendars. Use the “New Meeting” option in your own calendar and then invite an LAR room to your meeting by placing it in the “To” line. You will receive acceptance of your reservation if there are no conflicts

### ***Procedure space (Painter D118, C113)***

Procedure space is available at most animal holding facilities for routine manipulations including injection techniques, dosing regimens, and sample collection. LAR staff disinfects the rooms periodically and investigators are expected to clean and disinfect the area before and after their procedures.

### ***Surgery Suites (Painter D122)***

The Painter Center and Physiology Building have surgery suites suitable for major survival surgery. Treatment, prep and recovery areas are adjacent to the suite and LAR owns anesthesia and surgical equipment which is available for a technical services fee. LAR staff can assist with anesthesia, minor procedures and post-procedural monitoring. LAR veterinarians are available for surgery consultations.

### ***Necropsy Rooms (Painter D104)***

Necropsy rooms are available at Painter Center, Pathology Building and IDRC. These rooms are equipped with necropsy tables, CO2 for euthanasia, some necropsy instruments and supplies.

## **Services**

### ***Husbandry Services***

LAR animal care technicians check every animal, every day including holidays and weekends, and report abnormalities to research and veterinary staff as needed. Animal cages and enclosures are cleaned on a regularly scheduled basis. The animal care technicians also routinely clean, disinfect, and stock supplies in animal rooms.

When animal care technicians make a clinical observation, they will write up a Morbidity Card and place it on the cage. Morbidities and mortalities are entered into an on-line Medical Records System which will generate notifications to the veterinary staff who will further evaluate the animal. Researchers are then notified with a suggested treatment plan. The primary contact listed on animal cage cards should be the person who can respond promptly to any such communications.

A red three-ring binder is present in every LAR animal room to facilitate LAR and research staff communication and is called the Room Red Book. There is a laminated Communication Log sheet for writing non-medical questions about animals/litters, non-urgent supply requests, minor

changes in care/husbandry, etc.; however, do not leave notes about urgent matters such as sick animals or immediate equipment needs. Anything requiring prompt attention should be communicated by e-mail, in person, or by phone to an LAR staff member.

### ***Cage wash***

Cage wash areas are located at Painter Center and IDRC (in the Regional Biocontainment Laboratory). Entry to these areas is generally restricted to LAR personnel. To return items to the dirty side of cage wash, there are dedicated drop off points. At Painter Center, there is an outside drop off point on the east side of the building, located near the dumpsters. You may also push dirty items into dirty side from the main vivarium entry, however, do not enter the cage wash area yourself. Be sure to read and follow the signage posted at these drop-off points indicating that cages should be broken down into individual components, and that autoclavable items should be properly bagged. At IDRC, dirty items are left in the animal rooms and removed by LAR staff. Entry to the clean side of cage wash is restricted to LAR personnel. Clean items are stored in areas outside of cage wash, If you need a larger quantity of caging supplies (more than 5-6 items) please request them via a work order on the LAR website <https://www.research.colostate.edu/lar/> under "LAR Services".

### ***Research Services***

LAR offers research services to animal users including:

- colony management of inbred, outbred and genetically modified rodents
- tissue collection for genotyping
- sample collection (blood, urine, post-mortem tissue, other)
- dosing (oral, intravenous, intraperitoneal, subcutaneous, other)
- food intake studies
- behavioral testing
- surgical support and bi methodology

Veterinary personnel are available to provide technical support for research projects, including assistance with surgical procedures, anesthetic support, post-operative care, and diagnostic testing.

LAR can collect serum or plasma, process blood samples, and has the capacity to perform some in house diagnostics services. These and other research services are available to investigators on a recharge basis. Please contact LAR Technical Services for assistance in your research needs.

### ***Veterinary Services***

LAR is staffed with veterinarians offering a full spectrum of veterinary services for campus research and teaching animals, including comprehensive preventative health programs, interventional care in cases of illness, emergency services, and supportive veterinary care required for various research or teaching protocols. LAR veterinarians are available for consultation regarding model selection, appropriate anesthetic and analgesic drugs, and protocol development.

### ***Biomethods Training***

Investigator and research personnel training on animal procedures such as handling and restraint, sample collections, sample administration, anesthesia, surgical technique, and euthanasia are available for all species housed at LAR. The training is offered on an as needed basis and during scheduled wet labs. More information about the wet labs is available at <https://www.research.colostate.edu/lar/education-and-training/>.

Sign up for classes on the EHS training database at <http://www.ehs.colostate.edu/wtrainreg/classsignup.aspx>. Individual training can be scheduled by contacting the LAR Training Coordinator at [lar\\_training@mail.colostate.edu](mailto:lar_training@mail.colostate.edu).

### **Animal Orders and Work Orders**

Animal Protocols must have IACUC approval before animal work can begin. Animal orders are placed online through Kual Research at <https://kprd.is.colostate.edu/kc-prd>. Animal orders can only be placed from vendors approved by LAR or with special arrangements made through the Director or Associate Director. Animal orders must be placed two weeks in advance and most animals are scheduled for Monday delivery.

Work orders are used to communicate between research staff, animal care staff, and technical staff. Work orders must be placed to facilitate special instructions to the animal care staff such as euthanizing animals, changing the light cycle or withholding feed. Work orders are placed on line at <https://rweb.research.colostate.edu/LARForms/>. Two business days' notice is required.

### **Animal Tracking and Cage Cards**

Cage cards are a regulatory requirement of the Animal Welfare Act and the Guide for the Care and Use of Laboratory Animals. They contain a variety of both required and optional information including, but not necessarily limited to, a unique cage card number, the name of the Principal Investigator (PI), and an IACUC approved protocol number.

At CSU, cage cards are integrated with the animal management software system as the primary means of tracking animal census, allowing accurate calculation of *per diem* charges and providing animal identification. All animals receive a unique cage card number assigned to either individual animals (larger species) or groups of animals (smaller species) The Animal Medical Records system also is designed to recognize **ONLY** cage card numbers. It is the Investigator's responsibility to reconcile any experimental unique identifiers with the official cage card number in their records for purposes of animal health reporting.

Cage cards for new, incoming animals are generated automatically by the animal management software system. Subsequently, additional cage cards (e.g., weaning, separations, etc.) can be ordered by either LAR or investigator staff by submitting a Cage Card Request Form found at <https://rweb.research.colostate.edu/LARForms/>

Investigators are responsible for notifying LAR when animals or cages of animals are terminated. Physically return terminated cage cards, indicating the date terminated on the bottom of the card, to designated collection points (Consult with Animal Care staff in your facility to identify your collection point) OR send cage card numbers and termination dates by campus mail or e-mail to [lar\\_animal\\_census@mail.colostate.edu](mailto:lar_animal_census@mail.colostate.edu). LAR staff will manually remove terminated cage card numbers from the animal management software system. Failure to do so in a timely manner will result in continuation of *per diem* charges beyond the actual date of termination.

LAR personnel conduct monthly cage card audits to reduce census and billing errors.

### **Rates and Billing**

LAR rates are developed following the guidelines set forth in the NIH Cost and Rate Setting Manual for Animal Facilities in compliance with OMB Circular 21-A. Rate methodology is reviewed by an advisory group at least every two years. Current rates are available online at <https://www.research.colostate.edu/lar/rates-fees/>. The monthly billing cycle for LAR begins on the 21<sup>st</sup> of the month.

## ***Animal Transportation***

Importing, exporting or transporting animals on campus must have approval from LAR prior to movement. To assure proper transportation please contact LAR Technical Services or complete the Animal Transfer Form available on line at <https://rsweb.research.colostate.edu/LARForms/>. Two business days' notice is required for animal transfers. There may be a charge associated with your transfer, please contact LAR if you have questions about transfers.

Transporting animals, particularly rodents, between the laboratory and the vivarium requires special attention to prevent allergen exposure and to prevent cross contamination. The microbiological status (health status) of rodent colonies can have a profound effect on research results and should therefore be carefully monitored and controlled. Rodents brought from the regular vivarium to a laboratory space are not allowed to return to regular vivarium housing. Please contact LAR and arrangements will be made to house those returning animals in the Transitional Holding Suite.

## **Collaborating Units at Colorado State University**

**Environmental Health Services (EHS).** EHS is the campus unit charged with responsibility for administering health and safety programs including accident prevention, industrial hygiene, radiation safety, and environmental sanitation.

<http://www.ehs.colostate.edu>

**Research Integrity and Compliance Review Office.** RICRO provides assistance to researchers, staff, and the faculty oversight committees in maintaining an ethical and compliant environment for activities involving animals and biohazardous agents.

<https://www.research.colostate.edu/ricro/>

**Institutional Animal Care and Use Committee.** The IACUC is a faculty-based committee charged with oversight and review of the animal care and use program at CSU. All animal use on campus must be approved by the IACUC prior to initiating a project.

<https://www.research.colostate.edu/ricro/iacuc/>

**Institutional Biosafety Committee.** The IBC is a faculty-based committee charged with ensuring activities with biological hazards is conducted safely and responsibly. All use of biohazardous materials on campus must be approved by the IBC prior to initiating a project.

<https://www.research.colostate.edu/ricro/irb/>