

Investigator Facility Orientation Handbook
for
Building 35, Shared Animal Facility (SAF), John Edward
Porter Neuroscience Research Center (PNRC)
and
Building 10, 5th Floor Animal Facility, Ambulatory Care
Research Facility (ACRF)

NINDS



National Institute of Neurological
Disorders and Stroke

NIDCD



National Institute on Deafness and
Other Communication Disorders

NICHD



National Institute of Child Health
and Human Development



NIA



National Institute on Aging

NCI



National Cancer Institute

NEI



National Eye Institute



National Institute Mental Health



Office of Research Facilities
Development and Operations

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INTRODUCTION

Welcome to the Porter Neuroscience Research Center (PNRC) Shared Animal Facility (SAF). The John Edward Porter Neuroscience Research Center was conceived and developed as a research center to facilitate research in the neurosciences at the National Institutes of Health (NIH). Seven institutes (ICs) participated in this project and construction began in September 2001. The vision, consistent with the NIH Roadmap, is to accelerate the current pace of discovery in the neurosciences by facilitating and encouraging development of integrated teams of scientists working on similar research questions. Construction of Building 35 SAF was divided into two phases, with completion of Phase 1 construction in June 2004. At that time, over 100 Principal Investigators (PI's) representing the seven participating ICs began moving their labs into the PNRC. The Animal Health Care Section (AHCS) within the National Institute of Neurological Disorders and Stroke (NINDS) was selected to manage the research colonies housed within the Building 35 SAF ([Refer to PNRC 35 SAF Floor Plan](#)). In addition to the 35 SAF the AHCS within the NINDS oversees the Building 10, Ambulatory Care Research Facility (ACRF). This facility is located in on the 5th floor of Building 10 in room 5C127 ([Refer to ACRF 10/5C127 Floor Plan](#)).

The mission of the AHCS is to provide the best possible humane care for the animals under our charge. We take great pride in providing quality care for all animals maintained within NINDS-managed animal facilities. The following information is intended to acquaint Investigators with the policies and procedures of the 35 SAF and ACRF. We hope that you find this resource helpful. All contents of this orientation packet are the same for each building as the AHCS provides services to each individual animal facility.

AHCS PERSONNEL

The NINDS directs the care of animals housed in NINDS managed facilities through federal employees and the use of a contractor. AHCS activities are directed by the Animal Program Director with the assistance of an Animal Resource Administrator, five Clinical Veterinarians, and an Administrative Technician. Facility management, administrative support, and animal care staff are provided by a contractor under the Laboratory Animal Research Contract (LARC). The contract is under the supervision of the contract Project Manager. The NINDS managed animal facilities are fully staffed from 7:00 a.m. to 3:30 p.m., Monday through Friday. The facilities are staffed with a minimal number of animal caretakers and technicians on weekends and holidays from 7:00 a.m. to 11:00 a.m.

FACILITY ACCESS AND SECURITY

The 35 SAF and ACRF are limited-access areas. The 35 SAF is located in the basement of building 35, PNRC and the ACRF is located on the 10th floor at building 10. Both facilities are secured at all times; only authorized personnel on official business should be in the animal facility. Any suspicious person is to be reported immediately to the Facility Manager, Administrative Officer, Project Officer, or security. The non-emergency phone number for the NIH Police Security Office is 301-496-5685. If it is a true emergency, dial 911 from any NIH phone or dial 301-496-9911 from an outside line' i.e. cell phone.

The 35 SAF should be entered from the CD Pod elevators only. The pod AB Pod elevators, AB and CD Pod stairs, or loading dock should not be used. Entry procedures for investigators using the annex adjacent to the 35 SAF are provided as appropriate during orientation. The ACRF has one door for entry and exit on the 10th floor of building 10.

A cardkey is required to enter the 35 SAF and ACRF main corridors containing the animal holding rooms. Individuals will only be permitted access to areas related directly to their work within the 35 SAF and ACRF. All NIH employees receive an NIH identification card that can be programmed to authorize facility access. Animal holding rooms are equipped with biometric finger print readers. Access to animal holding rooms will only be granted to individuals' on an approved Animal Study Protocol (ASP) and are assigned space within the room. Individuals authorized access to animal holding rooms will be enrolled in the biometric security system upon completion of 35 SAF and ACRF Investigator Facility Orientation. Each employee must carry and use his/her own NIH ID card to gain access; card keys must not be loaned. It is the responsibility of all personnel entering the 35 SAF and ACRF to ensure that non-authorized people do not enter the facility with him/her. Your cardkey **must not be shared with anyone**. Use of a cardkey belonging to someone else will result in loss of facility access by both parties, and access will only be re-established following a written petition to and approval by the Building 35 User Committee for the 35 SAF or by the Animal Program Director (APD) at the ACRF.

Investigators requesting access to the animal facility must:

- Be listed on an approved Animal Study Proposal (ASP) with animals housed in the 35 SAF or ACRF. Your IC Animal Care and Use Committee (ACUC) Coordinator should be contacted for further information regarding how

to add additional personnel to your ASP and how to add the 35 SAF or ACRF as a housing location for your animals.

- Contact the 35 SAF Administrative Manager or Facility Manager to schedule the 35 SAF or ACRF Investigator Facility Orientation

Once Investigator Facility Orientation has been completed the Administrative Manager or Facility Manager then forwards the NIH cardkey information to the AHCS Animal Resource Coordinator who must verify IC ACUC clearance and seek NIH Security clearance for cardkey access prior to scheduling enrollment into the biometric system. If an ASP is inactivated or an individual is no longer listed on an ASP, access will be withdrawn. Loss of any card key should be immediately reported to the administrative office, the 35 SAF Facility Manager and the Division of Public Safety.

For additional information, please refer to NINDS SOP 110 Guidelines for Card Key Entry and Access of Research Staff to Animal Rooms.

VISITORS

NIH laboratory animal research facilities are closed to the public pursuant to Federal regulations. Visitors are prohibited from entering areas where animals are maintained or where experimental procedures are performed without prior approval of the Attending Veterinarian, APD or the Facility Manager. Children, including children of staff, are not permitted in the animal facility unless they are part of an organized tour with prior approval to enter. All visitors must report to the administrative area on arrival and must follow all policies and procedures while on site. All visitors must be accompanied by an authorized individual at all times and are the responsibility of the "escort" and must never be left alone. Visitors are not allowed to perform animal procedures within the 35 SAF and ACRF, and are not allowed to bring a camera into the 35 SAF and ACRF.

Requests for visits by members of the public, media, or animal welfare groups should be referred to the Office of Communications and the Attending Veterinarian or APD. Visits are scheduled as appropriate. Organized tours of the animal facility can be arranged with the approval of the Project Officer, APD and the Facility Manager.

Persons wishing to utilize photographic equipment in the animal facility must contact the Facility Manager to facilitate the process. Depending upon what is to be photographed, permission may be needed from the Attending Veterinarian, APD, Chief of the AHCS or the NIH Office of Communications.

The following requirements exist for any pictures taken:

- that no person's name or phone number is evident
- there is no indication that the pictures were taken in a NIH or an NINDS managed facility
- that proper procedures are being followed in regards to dress procedures, animal handling, animal restraint and animal manipulations, and procedures such as injections or housing
- that all procedures being photographed are listed on an approved ASP, and that all people being photographed are listed on an approved ASP

EMERGENCIES

Within the 35 SAF emergency exit stairs are located in the A Pod, A/B Pod, and C Pod of the vivarium. Please follow posted EXIT signs through the facility in the event of an emergency evacuation. In the event of emergency, personal protective clothing requirements are waived. Areas where street shoes have trafficked to hasten egress are sanitized immediately upon return.

Red emergency postings for the vivarium are located by the elevator at the basement level and throughout the facility. For emergencies related to the health and welfare of the animals please contact any of the Facility Veterinarians, the Facility Manager, or the Animal Resource Coordinator at the numbers posted. For Building and Maintenance Problems, notify NIH Building Maintenance Unit, 301-435-8000 and the Facility Manager.

Within the ACRF please follow posted EXIT signs within the facility and throughout building 10 to reach safety. Red emergency postings are located inside and outside of the main door of the vivarium.

If you find **any** abnormal conditions of the animals or the animal facility (no issue is too small), please call AHCS staff immediately (anytime – day or night).

CAGE ALLOCATIONS

Each User IC has been given a percentage of rat and/or mouse cage space in the 35 SAF or ACRF. In general, space equals cages, not racks; whenever possible institutes' colonies have been housed in the same animal holding room. Cage allocations are assigned by each Institute's Scientific Director (SD). A cage allocation is the assigned number of cages that are set aside for you and/or your laboratory within the 35 SAF or ACRF. Please know your cage allocation for the 35 SAF or ACRF and plan your colony and animal use accordingly. The AHCS staff will use the cage allocation space provided by each IC when approving animal orders. If you are unsure of your cage allocation please contact your Animal Program Director (APD) and/or SD to find out your allocation. The AHCS staff performs a census of all cages in each room in the vivarium and a summary of the data is provided to each Institute's Director monthly.

The data is also reported to the Executive Steering Committee. If assigned space is not used by an IC; space cannot be "leased" (an IC cannot give space to another IC) unless approved by the Executive Steering Committee. Similarly an IC cannot change their allocated percentage of rat vs. mouse cage space unless approved by the Executive Steering Committee.

ORDERING/TRANSFERRING ANIMALS

All animal orders/imports/exports/transfers must be approved in advance. The Institute Approving Official (IAO) checks the ASP to ensure that: the ASP is active; the ordering investigator is listed on the ASP; the species/strain(if necessary)/age is listed on the ASP; the number of animals requested are available under the ASP; and the 35 SAF and ACRF is listed as an animal holding location on the ASP.

All animals ordered through the Computerized Animal Procurement System (CAPS) are from NIH approved vendors. All NIH approved vendors are approved by the 35 SAF and ACRF Facility Veterinarians.

For animals ordered through CAPS, after approval by the IAO, the Facility Manager or designee reviews the request to determine if space is available to receive and house the animals. If sufficient space is not available to house the requested animals, the animal order will be denied or placed on hold until space can be made to house the requested animals.

Animals that are not acquired through CAPS are generated through in-house production, transfer or import. Transfers generally involve the transfer of animals from one NIH IC approved ASP to another, the transfer of animals from one NIH animal facility to another, or both. Imports generally involve the receipt of animals from collaborators at other research institutions or from vendors that are not listed as NIH approved vendors. Transfers require completion of an Animal Transfer Form. Imports require that the investigator, the IAO, and the IC veterinarian complete the Application for Permit to Introduce Rodents or Rodent Products (Refer to NINDS SOP 2000 Importation/Exportation of Rodents and Rodent Products), visit the website (<http://ahcs.ninds.nih.gov/>) for more information. For transfers and imports, the health status of the sending facility must be reviewed by the Facility Veterinarian and the Facility Manager/Import, Export Coordinator must review for space availability prior to approval. To protect the 35 SAF and ACRF resident animal colony, transfers or imports that arrive prior to approval from the Facility Veterinarian are not permitted to enter the 35 SAF and ACRF animal facilities.

Procedures for transferring animals from one ASP to another differ between ICs. All transfers from one ASP to another ASP must have IAO approval before the transfer can occur. Some ICs require that an Animal Transfer Form be completed and submitted to the IAO in order for the animals to be counted against the ASP. Please check with the Facility Manager/Import, Export Coordinator or your APD prior to transferring animals. New cage cards must be generated to reflect the new Principal Investigator (PI) and ASP number.

For further information regarding importing, exporting and transferring animals and the forms need for NINDS managed animal facilities please visit the website at <http://ahcs.ninds.nih.gov/>.

CAGE CARDS

All cages within NINDS managed facilities containing animals must have a 35 SAF or ACRF cage card that lists complete and correct information. Cage cards are generated at the time of order placement by an investigator or in response to a completed Cage Card Request Form submitted by an investigator. Alternatively, investigators may request pre-made cage card labels to use for weaning animals or separating adults. All cage cards and pre-made cage card labels are generated by the Building 35 NINDS Animal Ordering Clerk.

Cage Card Request Forms are available at each animal holding room. These cards must be filled out completely and accurately with a ball point pen and firm pressure applied to ensure that all copies of the request are legible. All blanks on the form must be completed to ensure that animal use is recorded accurately. When separating litters, the 'number of

animals per cage' will be multiplied by the 'number of cards needed' to determine the total number of animals to be reported as used on the ASP. When separating adults, it is assumed that the adults have already been reported as used on the ASP. If the separated adults are to be used on a different ASP number (Protocol #) than the cage of origin, an Animal Transfer Form must be submitted concurrently. Once the Cage Card Request Form has been completed, please leave the two yellow copies in the cage card holder(s) on the new cage(s). Place the white and pink copies in the designated location upon exiting the facility. Cage card requests are usually fulfilled within two business days. Should a request be delayed or misplaced, AHCS staff will resubmit the request using one of the two remaining yellow copies of the Cage Card Request Form remaining in the cage card holder.

Cage card labels may be desirable when multiple cage cards will be required. Upon request, labels are generated and delivered to the animal room for use as needed along with a recording sheet for recording activation of the cage cards. To request labels, please send an email to the Animal Ordering Clerk that includes the Principal Investigator's (PI) name, Ordering Investigator's (OI) name, ASP Number (Protocol #), IC, Point of Contact (POC) telephone number, Animal Holding Location (building and room number), and Species. Blank cage cards are available at each animal holding room. Labels are applied to the upper left hand corner of the blank cards as necessary and placed into the cage card holders of the new cages.

When new cages are created and a label used, an entry must be made on the List of Cage Cards Separating Weanlings/Adults sheet. The entry must include the Activation Date (date the cage card was made or label is first used), the number animals and the sex of the animal(s) (females and/or males) that have been placed in the cage. There are differences between the adult and weanling cage card labels, be sure that the correct labels are being used. Investigators must monitor their supply of cage card labels, anticipate their needs, and request additional labels as necessary to ensure availability prior to need. Requests for cage card labels are usually fulfilled within two business days.

All cage cards must be turned in to the 35 SAF and ACRF when no longer needed for use on the cage (i.e. the cage is emptied by either pooling animals for breeding or other reasons, or if animals are removed and will not be returning, animals are euthanized). Cage card(s) from cages that no longer contain animals should be placed in the designated box or bin upon exiting the facility. If you need a copy of the cage card, please make a copy before the original is turned in.

TRAFFIC PATTERNS

Every animal facility has a different infectious disease status. The 35 SAF and ACRF are "clean conventional" facilities. Mouse Norovirus, Mouse Parvovirus, and *Helicobacter sp.* are present as endemic infections within some 35 SAF and ACRF resident breeding/research colonies. It is extremely important that you are aware of the traffic patterns/health status between buildings on campus. Traffic patterns between facilities must be followed. Facilities with a more restricted health status are entered first followed by entry of facilities with a less stringent health status. Ideally, individuals should enter only one animal facility within any 24 hour period. If one must enter the 35 SAF or ACRF after being in another animal facility, he/she must have the permission of the Facility Manager or Attending Veterinarian and completely cover his/her street clothing with disposable protective clothing or shower and change clothing.

Within every animal facility there are "cleaner" areas and "dirtier" areas. Therefore, a traffic pattern must also be followed with the facility. The 35 SAF and ACRF operate as a single corridor system. Airflow, equipment and personnel should move in a direction from areas of least contamination to areas of greater contamination.

In 35 SAF the "clean" corridor, which is entered from the Pod C elevators through the gowning area, is considered the cleanest area; clean side cage wash exits into this corridor. The "dirty" corridor, located in Pod A and entered through the North Animal Holding corridor, is considered the dirtiest area; dirty side cage wash and the Isolation/Quarantine Suite exit into this corridor.

The ACRF vestibule operates as a clean and dirty corridor and all rooms and the dirty elevator attach to this area.

The wheels of all carts and equipment entering into the 35 SAF and ACRF facility must be sprayed with the disinfectant provided at the gowning station prior to entry.

The order in which individual animal rooms should be entered is established based on species, health status, and immune status of the animal residents. Therefore the traffic pattern posted at the entrance to the 35 SAF and ACRF should be followed. Animals may leave the facility in appropriate containers and, depending upon destination, may return to the facility. Excessive or unnecessary traffic through animal rooms or between animal holding rooms and cagewash areas is prohibited. The order of entry is as follows: "SPF clean" animal holding rooms → Mouse → Rat → Isolation → Quarantine. There are signs posted on the doors of the animal holding rooms that have special situations (i.e. SPF, Isolation, or Quarantine). If there are special entry/exit requirements for a specific room, the room will be posted. Please follow any Personal Protective Equipment (PPE) requirements or other special procedures listed on the door posting.

Pet ownership by personnel entering the 35 SAF and ACRF is a concern when there is a potential for transmission of viruses or bacteria from pets to the animals held at NIH. Personnel who own, care for, or have frequent contact with

rodents, rabbits, or animals that feed on rodents other than those housed in NINDS managed facilities must notify the Facility Manager or the Facility Veterinarian. Personal pets **are not allowed** in NINDS managed facilities. Experimental animals **may not** be removed from the animal facility for personal use.

One way to control transmission of diseases is by maintaining good personal hygiene. Generally, showering is not a requirement for entering or leaving NINDS managed animal holding facilities. However, it may be required if the person needs to enter the 35 SAF or ACRF after having been in another animal facility or area, or working with animals from another animal facility in their lab. Hand washing is a very important part of personal hygiene. Hands should **ALWAYS** be washed before and after handling animals and related equipment. Hand sinks are available in each animal holding room, procedure rooms, and the corridors. As in all research animal holding facilities, eating, drinking, smoking, application of cosmetics and handling of contact lenses are prohibited in the vivarium.

DRESS PROCEDURES

Personal Protective Equipment (PPE) includes lab coats, shoe covers, and gloves that are worn over your personal clothing for your protection as well as the protection of the animals within the vivarium. Proper use of these items will help reduce the chance of contaminants entering and exiting the vivarium. Disposable lab coats and shoe covers are stocked in the gowning area and must be donned before entering the vivarium. Hair covers and masks are available for individuals that desire to wear them.

At a minimum, all people intending to enter the 35 SAF and ACRF must wear shoe covers and a disposable lab coat over their street shoes and clothes. In addition, gloves must be worn when handling animals. Gloves should be donned before handling any animal, equipment or materials. Gloves are available inside animal holding rooms, support/supply rooms, and procedure rooms. Please dispose of the gloves in the room where they were used prior to exiting the room. Upon exiting the facility, remove and dispose of all disposable PPE in the trashcan outside of the vivarium in the gowning area. Do not re-use shoe covers or lab coats. **DO NOT** re-enter the facility with used PPE.

NINDS AHCS personnel wear facility dedicated uniforms and boots/shoes. Shoe covers and a lab coat are worn over their uniform when they must exit the animal facility in their uniform.

ANIMAL TRANSPORTATION

All animal movement and transfer must follow the NIH Guidelines for animal transport. Animals leaving the 35 SAF and ACRF must be transported in properly sealed NIH-approved disposable transport boxes with filter paper covering all openings/air vents. These boxes are located in the support room (BBC-810) in the vivarium at 35 SAF and on the rack within the ACRF vestibule. Disposable containers are also available for short term use to transport neonatal rodents and individual mice. Labels with the words: "Live Animals" must be affixed to the containers and are provided with the stores of the containers.

Animals may be removed from the vivarium and taken to the adjacent annex, a lab in the PNR, NMRC/PET, and/or Building 10 ACRF for experimental manipulation, and returned to the facility. Animals may **NOT** stay in individual labs for more than 12 hours at any given time unless approved in advance by the IC ACUC. If animals will be taken to the NMRC/PET and need to be returned to the 35 SAF, they should be housed in the cubicle designated for that purpose on their return to the 35 SAF. The ACRF has special permission to return animals into the facility from the NMRC/PET (MIF), please speak to the facility manager and the facility veterinarian for further details. For all other destinations, please consult with the Facility Veterinarian in advance to ensure appropriate precautions are employed on return.

If animals will be returned to the facility, keep the cage card with the animals. If the animals will not be returning to the facility place the cage card(s) in the designated box or bin prior to exiting the facility. Each cage card represents one Request for Animal Delivery and is unique. Cage cards should not be re-used. To do so will generate error reports within the facility inventory.

Return all used cages to the dirty cage rack provided for 35 SAF in the clean corridor between the North and South animal holding suite within the vivarium, for the ACRF on the dirty cage rack in the vestibule next to the elevator. All cages placed on the dirty cage rack must be checked carefully to ensure that no animals remain in the cages. Animals left on the dirty cage rack without food or water constitutes a significant animal care and use program deficiency.

AHCS ANIMAL FACILITY INFORMATION

- Animal health checks and observations are performed twice daily, Monday through Friday and once on the weekends and holidays
 - ❖ Health checks include observing the general health and condition of the animals; checking for clinical signs of disease, animal births, and animal deaths
 - ❖ Observations of the conditions within the cage include checking food and water levels, condition and cleanliness of the bedding, environmental enrichment, supplements, and any special husbandry requirements
- Macroenvironment = temperature, humidity, ACH and lighting
 - ❖ Temperature and humidity are checked twice daily
 - Animal Holding room temperature = 70-74°F
 - Animal Holding room humidity = 35-60%
 - ❖ Air Changes per Hour (ACH)
 - Animal Holding Rooms are at approximately 10 to 20 ACH
 - Cages are at a minimum of 60 ACH
 - ❖ Lighting / Light Cycles
 - Animal Holding Rooms are set to 12:12 Light:Dark; lights on at 6:00 am and off at 6:00 pm
 - Animal holding rooms are equipped with a switch/timer that can be activated during the dark phase (these light are red at the PNRC and white at the ACRF)
- Microenvironment / Rodent caging/housing
 - ❖ Racks = Individually Ventilated Cage (IVC) racks with polycarbonate or polysulfone cage bottoms, stainless steel wirebar lids/feeders, and polycarbonate or polysulfone filter tops
 - PNRC = Tecniplast racks / caging and are changed weekly
 - ACRF = Tecniplast racks / caging and are changed twice weekly
 - Thoren Heated rack / caging and changed twice weekly
 - ❖ Cages
 - PNRC = hardwood chip bedding plus a Nestlet, cardboard tube, and Enviro-Dri
 - ACRF = CareFRESH® bedding (100% virgin short fiber wood pulp (not recycled) paper product) plus a Nestlet and cardboard tube
 - ❖ Feed
 - Provided ad lib via stainless steel feeders integral with the wirebar lid
 - NIH-07 Rodent Chow
 - Lactating or breeding female rodents may be provided higher fat content chow if requested by the PI
 - ❖ Water
 - Provided ad lib
 - PNRC = RO water provided via polycarbonate or polysulfone water bottle
 - ACRF = House water provided via polycarbonate or polysulfone water bottle
- AHCS Staffing
 - ❖ From approximately 7:00 am to 3:30 pm, Monday through Friday.
 - ❖ Weekends and holidays from approximately 7:00 am to 11:00 am (limited to Caretakers and Technicians)

ANIMAL HOLDING ROOMS AND SUPPLIES

There are eleven mouse rooms, three rat rooms, two cubicle suites, and one isolation/quarantine area located inside the 35 SAF vivarium. The two cubicle suites consist of six cubicles each and are used to house special studies (e.g. light studies, ABSL2 studies, animals rendered immune incompetent by irradiation, etc). Cubicle use is on a first come first serve basis and is coordinated through the 35 SAF Facility Veterinarian. Investigators requesting use of cubicles for short term housing should contact the 35 SAF Facility Veterinarian.

There is one mouse room, one rat room, and one isolation area located inside the ACRF vivarium.

Supplies, such as cages, wire bar lids, water bottles, cage card holders, transport boxes, feed, etc., may be found in the marshalling areas in both the North and South corridors in the 35 SAF and located on the supply rack in the ACRF vestibule. The AHCS provides basic supplies for the rooms, but it is the investigator's responsibility to provide supplies that are needed for their experiments and/or surgeries and to restore the room to order upon completion. There is no space available for storage of protocol specific drugs, supplies, or equipment in the animal holding rooms or the procedure rooms. Lockers are available for this purpose and are located at the entrance to the vivarium only at the 35 SAF. Please contact the Facility Manager for information on locker use.

CAGING AND HUSBANDRY

The 35 SAF and ACRF utilize Individual Ventilated Caging (IVC) systems manufactured by Tecniplast. The motors are separate from the racks, which minimize the vibration of the racks and cages. The ACRF has one Thoren IVC system which is heated for housing critical care animals. The supply motors of the IVC racks pull room air through a HEPA filter and then sends the HEPA filtered air to the cages on the racks; the exhaust motor pulls air from the cage, passes it through a HEPA filter, then exhausts the HEPA filtered air to the room point exhaust system, thus ventilating the cage and providing the needed air changes per hour at the cage level.

Cages consist of a cage bottom, wire bar lid, filtered top, water bottle with sipper tube and a cage card holder. The bottles are easy to access from the outside of the cage with the exception to the Thoren cages as the water bottle is inside the cage. RO water for PNRN and filtered house water for ACRF with NIH 07 Rodent Diet is provided to the animals as the standard of care. Other diet may be provided, e.g. Hi-Fat Breeding Chow, if requested and in accordance with an approved ASP. Cages are provided with hardwood chip bedding at PNRN and Carefresh bedding at ACRF with enrichment devices such as cardboard tubes, crinkled paper strips, and a Nestlet. If your study requires an exception to this standard of care, please contact the Facility/Husbandry Manager before ordering animals or starting your study. All requests for non-standard husbandry must be described in an approved ASP, e.g. Section M. of the ASP.

Husbandry includes twice daily animal health observations and environmental and quality assurance monitoring of animals, animal holding rooms, and cage wash equipment. The cage change schedule is as follows: cage bottoms, water, water bottles and feed – weekly at PNRN and twice weekly at ACRF, wire bar lids and filter tops - every two weeks; racks - twice annually

For special feeders, bottles, or equipment that is specific to the ASP/study, investigators must purchase their own equipment (e.g. powder feeders, opaque water bottles) and maintain their own inventory. When wanting to put animals on study with special equipment in the cage, place the equipment inside the cage and label the cage with a 'Special Husbandry' flag ([Refer to Cage Flags and Their Uses](#)) indicating what the special equipment is within the cage, any instructions and investigator contact information. Typically, the investigator is responsible for checking, replacing or refreshing the food or water, and changing out and sanitizing the equipment. If desired, after the investigator changes the feeder or bottle, they may leave it for AHCS personnel to wash and after the equipment has been processed through cage wash, AHCS personnel will notify them where the items have been placed (typically in the marshalling area) so they are available for investigator pick up. Such arrangements are best made in advance with the AHCS staff prior to the start of a study to ensure that cages are appropriately labeled and all equipment handling details are clarified, e.g. whom to contact or other plan of action should special feed or water be found to be low or whether feeders or bottles may be handled by AHCS personnel without disruption to data collection.

Note: Should investigators fail to respond to notification of that food or water is low and the cage runs out of food or water with no signage posted indicating that the cage is supposed to be NPO, regular food or water will be provided as appropriate and the investigator subsequently notified.

CAGE SPACE STANDARDS

All animals housed within the 35 SAF and ACRF are housed according to the recommendations set forth in the *Guide for the Care and Use of Laboratory Animals* (The Guide) and NINDS SOP 230 Rodent Breeding Policy. Exceptions to the Guide and/or NINDS SOP 230 Rodent Breeding Policy must be approved in advance by the IC ACUC and included in the ACUC approved ASP.

The recommendations of the *Guide for the Care and Use of Laboratory Animals* have been applied to the caging currently in use to generate the NINDS SOP 201 Space Requirements for Laboratory Rodents. The resulting chart is based on the dimensions of the cage and the weight of the animal (Measurements taken at inside the bottom of the cage).

Tecniplast Rat cage – 120 square inches of floor space

Tecniplast Mouse cage – 65 square inches of floor space

Thoren Mouse cage – 60 square inches of floor space

The AHCS staff checks cages daily and examines them for overcrowding/cages needing separation. The following are examples of overcrowding or cages needing separation:

- ❑ Cages with litters 21 days old, ready to be weaned
- ❑ Cages with multiple animals overcrowded by weight per chart
- ❑ Cages with more than one nursing female
- ❑ Timed-pregnant mice \geq E16 or timed-pregnant rats \geq E14 housed >1 to a cage

When a cage is determined to need separation, an “Overcrowded Cage” label is dated, initialed, and placed on the cage and the investigator is notified and given a timeframe in which the cage needing separation must be resolved. If the cage is not resolved within the allotted time by the investigator, AHCS staff will separate the animals and notify the Investigator, the Facility Manager, Facility Veterinarian and the NINDS APD. Every effort should be made to separate these cages prior to week end. “Overcrowded” cages that are as a result of multiple litters, or pregnancies of more than one female that may result in multiple litters, must be resolved by close of business the day of notification. All other “Overcrowded” cages must be resolved within 3 days of notification. In the event that day 3 falls on a weekend or holiday, the cage must be resolved the last full business day prior to the weekend or holiday. For example, litters REACHING DAY 21 on Wednesdays or Thursdays, for which day 24 falls on the weekend must be resolved by the close of business Friday. For the occasional Monday holiday, cages due to be weaned on the holiday must be resolved the following business day. For litters that will reach day 21 on a Saturday or Sunday, weaning must be performed on the following Tuesday or Wednesday, respectively.

HANDLING ANIMALS

Animals are protected from the environment as long as the filter top remains in place on the cage. You may change or open the animal cages either within an animal transfer station or biological safety cabinet or on a cart or counter top. It is recommended that mouse procedures be performed in the animal transfer stations provided. The animal transfer stations are not Class II biological safety cabinets and should not be used as such. Class II biological safety cabinets are available in procedure rooms Procedure Room North (PRN) 2 and Procedure Room South (PRS) 2 at the 35 SAF. Work surfaces of carts or cabinets should be cleaned before use and covered with Chix wipes saturated with Clidox. The floor is NOT an acceptable work surface and equipment should never be placed on the floor.

The following basic procedures for preparing the work surface are recommended:

- spray the inside surface with disinfectant **before** starting and allow proper contact time (10 minutes)
- line the work surface with absorbent pads or Chix wipes

In addition, if using an animal transfer station or biological safety cabinet:

- turn the unit on
- make sure you DO NOT block any grates or air diffusers
- do not lift the sash (glass or plastic front)
- work slowly to avoid disturbing the air flow
- clean up and disinfect the surface when finished
- ask for a demonstration, if unsure of the proper steps

When handling the animals and their caging, you must wear gloves that are sprayed with or dipped in Clidox before handling. This will help prevent any contamination between cages. While handling multiple cages please have only one

cage open at any given time. Gloves should be changed and new gloves donned if the gloves become worn or torn, or if handling animals from different racks.

To ensure proper ventilation when returning cages to the rack, please ensure that the filter top is properly seated on the cage and that the cage is properly seated on the rack. If the cage is not readily seating on the rack, feed may have become lodged between the wire bar and the cage lid. If so, the cage will need to be opened, and the stray pieces of feed returned to the depression in the wire bar to allow it to be properly seated on the rack.

ESCAPED RODENTS

Rodents that escape their cage, jump or are dropped during handling and touch the floor are considered "escaped" rodents. Rodents that are left in soiled cages on the dirty cage rack are also considered to be "escaped". **Escaped rodents are to be euthanized and must not be placed back into their home cage.** Contamination from the floor can be spread to the cage/colony level if the animal is placed back into the home cage. Animals that have been left on the dirty cage rack cannot be positively identified and jeopardize the integrity of research results. Escaped rodents that cannot be euthanized may be quarantined if space is available. Contact the Facility Veterinarian for guidance. Refer also to NINDS SOP 203 Disposition of Escaped Rodents in Building 35 SAF, Building 10 ACRF.

If this happens please notify the AHCS immediately to inform them of the incident. You may notify the AHCS staff via phone or email. Please see the phone lists throughout the facility located by the telephones. When notifying by email please send the email to the Facility Manager, Facility Veterinarian, APD, Technical Supervisor and Husbandry Manager.

ANIMAL CARCASSES

Animal carcasses from animals euthanized or found dead within the vivarium are placed in orange biohazard bags available in the procedure rooms and animal holding rooms. The bagged carcasses are then deposited in the refrigerator provided in the clean corridor between the North and South animal holding suite within the 35 SAF vivarium and the carcass refrigerator outside of the ACRF vivarium.

Carcasses 'saved for the investigator' are placed in a container within the refrigerator labeled as such. Any carcass 'saved for the investigator' that are not collected by the investigator are discarded as Medical Pathological Waste (MPW) after 48 hours. This information may be added to the ASP's disposition form if desired for the carcasses to be saved.

The carcasses of animals euthanized outside of 35 SAF e.g. in a laboratory or another vivarium must **not** be brought to the 35 SAF for disposal. They should be disposed of as for other MPW generated by your laboratory.

CAGE SIGNAGE

The 35 SAF and ACRF utilize many types of cage signage; the AHCS staff and the investigators use this signage to mark cages with information specific for that cage. Cage signage/flags may be found in the animal holding room. The following are examples of the types of cage signage you will typically see placed in the cage card holder.

- ❑ Orange "**Watch**" Card - placed on the cage to alert staff that an animal is in need of veterinary care, is under special observation or treatment, or is receiving treatment/post-operative care. If an animal that is on 'watch' is moved to another cage, please ensure that the watch card is moved with the affected animal and that the Clinical (blue card) or Surgery/Anesthesia Record (yellow card) is annotated with the new rack/cage card number.
- ❑ Pink "**Watch**" Card - placed on the cage to alert staff that an animal is receiving treatment or observation on a less than daily basis. These cages are checked at least weekly by an AHCS technician and daily by the AHCS caretakers. If an animal that is on 'watch' is moved to another cage, please ensure that the watch card is moved with the affected animal and that the Clinical or Surgery/Anesthesia Record is annotated with the new rack/cage card number.
- ❑ Yellow "Permanent Defect" Card - placed behind the cage card to document special phenotypes or imperfections that do not require veterinary care.

When using the flags please use permanent ink markers supplied in the room for writing on the flags and once the flags are removed from cage place them back onto the wire basket at the front of the animal holding room. Refer to [Cage Flags and Their Uses](#) for flags used inside the facilities, their uses and instructions for the use of the flags.

Flags are used to reflect the need of the animal or the animals' cage environment. All cages that are not identified by a flag will receive regular cage change, feed/water and observation on a daily basis.

Note: If cages are removed from the rack by the AHCS Staff for an extended length of time the staff will place one single colored clip (clothes pin) in the place of the cage on the supply or exhaust nozzle. This will ensure that the cage is returned to the proper and original location to where it was removed. The clips left in the cage space on the rack will have a number that will match to the individual cage that was removed. Please do not remove any clips that are left on the nozzles.

DISPOSITION FORMS

The AHCS is responsible for ensuring animals (live or dead) are disposed of in a manner that facilitates the needs of the Principal Investigator (PI) of the study to which the animals are assigned. To help us achieve this goal, NINDS/NIDCD Investigators complete a Disposition Form (DF) as part of their ASP which provides specific instructions for disposition of sick or dead animals on study. Other IC investigators using the 35 SAF are encouraged to submit a DF with each ASP. A separate DF is recommended for each species and/or for each strain or situation where disposition instructions may vary. Copies of the instructions are kept in animal holding room to serve as a quick reference when sick, injured, or dead animals are found. Appropriate telephone and pager numbers for notifying the PI, or his/her Point of Contact (POC), as well as specific instructions on the DF help ensure the research requirements are fulfilled. For additional information, please refer to NINDS SOP 70 Disposition Instructions for Animals Housed in NINDS-Managed Facilities.

CLINICAL RECORDS (Blue Cards)

When a sick or injured animal is identified, either by the caretaker, technician, or investigator, an orange “watch” card is placed in the cage card holder **in front of the cage card**. The technician will initiate and complete the information section of the [Clinical Record \(blue card\)](#) and note the health status of animal. Alternatively, the investigator may use the clinical record to report non-surgical procedures that may require post-procedural monitoring, e.g. endotracheal intubation. Once the animal has been evaluated by an AHCS technician, the orange watch card is placed behind the cage card and will stay on the cage for the duration of the animals’ need to be on watch and/or treatment.

The veterinarian will assess new cases and prepare a plan for treatment if indicated. The technician is responsible for daily treatments and presenting cases for recheck per veterinary instructions.

ASEPTIC SURGICAL TRAINING

The NINDS/NIDCD ACUC has established a policy regarding the training of investigators in aseptic surgical techniques. All NINDS/NIDCD investigators named in the ASP that includes survival surgical procedure(s) are required to complete the [Aseptic Surgical Training](#) course on aseptic techniques. The course addresses the legal basis for the requirement for use of aseptic technique, procedure room set up, sterile instrument preparation, animal preparation, and surgeon’s attire and gloving. This course is open to investigators of other ICs who desire training in these areas, but is not required.

LAB ANIMAL SURGICAL/ANESTHESIA RECORDS (Yellow Cards)

The surgery to be performed must be described in an ACUC approved ASP. Unless an exception is approved by the Facility Veterinarian in advance, NINDS/NIDCD Investigators must limit survival rodent surgeries to Monday through Wednesday in order to allow sufficient post-operative assessment and care during the first 72 hours, which are critical. Other IC investigators using the 35 SAF and ACRF are encouraged to limit survival rodent surgeries to Monday through Wednesday. **Investigators that must conduct survival surgery on days other than Monday through Wednesday must also ensure that they will be available to provide post-operative assessment and care on weekend days or holidays that occur during the first 72 hours post-op.**

All post-operative animals must have an accompanying [Lab Animal Surgery/Anesthesia Record \(yellow surgery card\)](#). The top section of the yellow surgery card is to be completed by the investigator and the yellow card placed in the wall desk adjacent to the animal holding room. The completed record must include the animal holding room number, rack and cage number, animal number (ear tag, punch or tail marking for each animal), **pre-operative body weight** (for each animal), surgical procedure performed, anesthesia used, route of administration, **analgesic used and amount administered, time of completion**, and all other field values in the top section of the record. Please be sure to include appropriate contact information; if a medical emergency arises and the AHCS staff needs investigator input on the most appropriate course of treatment, the point of contact (POC) and phone number(s) is critical. All yellow surgery cards should have clear post-operative instructions entered to include the post-operative analgesic, if any, and its dose, frequency and duration of administration.

To save writing when multiple surgeries will be performed, custom made yellow surgery cards or custom made labels with post-operative instructions may be readily generated in advance of surgery and made available at the animal holding room for use. The yellow surgery card is an Excel spread sheet that can be edited as necessary. Once the top section is edited to reflect all information pertinent to the surgery to be performed, the file can be sent as an attachment to NINDS AHCS Techs at nindsahcstechs@ninds.gov. AHCS staff will then review the file with the Facility Veterinarian to ensure that it is complete and accurate. The investigator will then be notified when hard copies will be available at the animal room for use. Once custom made yellow surgery cards are available, the investigator must monitor their supply and notify NINDS AHCS Techs when more are required well in advance of actual need.

An orange "Watch" card is placed in the cage card holder **in front of the cage card** by the investigator returning post-operative animals. The time anesthesia was terminated and any post-operative medications administered should be recorded on the record. Each day, the AHCS technician will assess the animal(s) and assign a Pain/Assessment score when using the [NINDS AHCS Rodent Post-operative Assessment Chart](#). If there is more than one post-operative animal in the cage, it is critical that the animals' identification correlate with the pre-operative body weight. Once the animal has been evaluated by an AHCS technician, the orange "Watch" card is placed behind the cage card. All pertinent information, including weight, is entered on the record and initialed by the technician. Pain/assessment scores are typically computed for postoperative days 1-3. Animals are typically weighed prior to evaluation by the Facility Veterinarian on postoperative days 1, 2, 3, 7, and 10. Animals are observed each day until cases are resolved. Nutritional supplements are typically offered in the immediate post-op period or until the animal returns to its pre-surgical body weight. The investigator's postoperative care instructions may preclude the use of certain types of nutritional supplements, most often Jell-O. Sutures or staples are typically removed on or before day 10 and cases are usually resolved shortly thereafter. Cases are closed at the discretion of the Facility Veterinarian. Investigators are requested to annotate surgery records if they euthanize animals before the case is closed. **Investigators performing weekend or holiday care are required to annotate medical records daily**; e.g. record date, post-operative medication administration, animal health observations (body weight as appropriate), and initials. If animals are used before the case is closed, it is very helpful to annotate the record accordingly, e.g. '#4 will not return'. Cases for which pertinent cages are missing from the room for three days in a row are closed.

SHARED PROCEDURE ROOMS

There are five procedure rooms located inside the 35 SAF vivarium and one procedure room located within the ACRF vivarium available for use on a sign-up basis (first come first serve). Isoflurane anesthesia units, downdraft tables, and chemical waste disposal is available in each procedure room. Two of the procedure rooms within the 35 SAF, one in the North Corridor (PRN2) and one in the South Corridor (PRS2), are equipped with Class II Biological Safety Cabinets. The AHCS provides basic equipment and supplies for procedure rooms. The investigator is responsible to: 1) provide supplies that are needed for their experiments and/or surgeries, 2) Comply with the NINDS Animal Care and Use Committee Policy on Use and Maintenance of Guillotines if the guillotine is used, and, 3) clean and reorganize the room when finished to minimize the potential of cross-contamination. Space is not available for storage in the procedure rooms. Therefore, no drugs, supplies, equipment, or any other materials should be left in the procedure rooms. AHCS staff will remove trash, MPW boxes, sanitize the room, and restock on a regular basis. If animals are left in an incubator in the procedure room, please place an orange "Watch" card in the pocket provided for this purpose on the procedure room door. This will ensure that AHCS personnel are aware that animals are being housed in the incubator and can monitor them appropriately. If you note any broken equipment, or depletion of items normally stocked in the procedure rooms, please notify the Facility Manager.

In addition, there are down draft sinks in each procedure room within the 35 SAF and ACRF vivarium. When working over the down draft sinks please read and following all instructions located in each procedure for operation, instruction and cleaning.

TECHNICAL SERVICES

AHCS Veterinary Technicians implement and oversee the Quality Health Assurance Sentinel Animal Program, provide animal health assessment and clinical care, and husbandry support services. Quality Assurance services are provided in accordance with NINDS SOP 610, NINDS Animal Health Surveillance Program. Animal health assessment is provided in accordance with NINDS SOP 840, Rodent Surgery and Clinical Records. All other services are provided in response to a [Request for Technical Services \(Technical Requests\)](#). Technical Requests must be submitted at least 48 hours in advance by emailing to nindsahcstechs@ninds.gov, or faxing to the number provided at the top of the form. Requests for breeding assistance must be submitted at least 72 hours in advance in accordance with NINDS SOP 230, Rodent Breeding Policy. For this service a [Request for Weaning Services \(Weaning Requests\)](#) is to be submitted as stated above. **Technical services in response to Request for Technical / Weaning Services are provided on a first come first serve basis. Services responsive to the Animal Health Surveillance Program and Rodent Surgery and**

Clinical Records will be given precedence. If the AHCS is unable to fulfill a Technical / Weaning Request as desired, you will be notified as soon as possible. If a desired service is not specifically listed on the Technical Request Form, e.g. a request for training, please feel free to contact any of the AHCS personnel at any of the e-mail addresses or phone numbers listed on the Form. A number of additional technical services (e.g. rodent phenotyping) are available through the Division of Veterinary Resources at <http://dvrnet.ors.od.nih.gov/>.

EUTHANASIA REQUESTS

Cages of animals to be euthanized are identified by an orange euthanasia sticker placed on the cage card (not on the cage or the cage card holder). The sticker is initialed and dated by the investigator. If the sticker does not have the Investigator's initials and the date, the AHCS staff will not euthanize the cage. **All** animals in the cage marked for euthanasia will be euthanized; the staff will not separate out individual animals in a cage marked with a euthanasia sticker.

AHCS staff performs euthanasia daily, usually before 2:00 PM; therefore cages marked for euthanasia later in the day may be left on the racks in the animal holding rooms overnight. In addition, some cages of animals marked for euthanasia may be subsequently identified as cull animals for use in the Quality Assurance Sentinel Health Program and therefore euthanasia may be delayed. Please **do not** pull cages marked with euthanasia stickers out of the rack or leave them without food and/or water. Please **do not** pool animals so that they are overcrowded or will fight before euthanasia can occur. Please **do not** leave pups or litters less than 21 days old in the cage without the mother. Please **do not** leave sick animals. For pups and sick animals you want euthanized immediately, please find a Supervisor, Veterinarian or Technician and inform them that the animals must be euthanized immediately or euthanize the animals yourself. Metal lids connected to the house CO2 supply and instructions for use are present in each procedure room. If you are not familiar with euthanizing animals with CO2, please ask a staff member for a demonstration.

NONCOMPLIANCE

Policies that impact on personnel or animals in NINDS Managed animal facilities should be adhered to so as to ensure the health and well being of the animals and the safety of all individuals in the 35 SAF and ACRF vivarium. Questions concerning these policies should be directed to the Facility Manager.

Frequently Used Acronyms

The following acronyms are frequently used in NINDS managed animal facilities:

AAALAC	Association for Assessment and Accreditation of Laboratory Animal Care	NHP	Nonhuman Primate
AALAS	American Association for Laboratory Animal Science	NIA	National Institute on Aging
ABSL	Animal Bio-Safety Level	NICHD	National Institute of Child Health and Human Development
AHCS	Animal Health and Care System	NIDCD	National Institute on Deafness and Other Communication Disorders
ACRF	Ambulatory Care Research Facility	NIH	The National Institutes of Health
ACUC	Animal Care and Use Committee	NIHAC	The National Institutes of Health Animal Center (Poolesville, MD)
ALAT	Assistant Laboratory Animal Technician (AALAS Certified)	NIMH	National Institute Mental Health
APD	Animal Program Director	NINDS	National Institute of Neurological Disorders and Stroke
ARAC	Animal Research Advisory Committee	OACU	Office of Animal Care and Use
ASP	Animal Study Proposal	OI	Ordering Investigator
BSL	Bio-Safety Level	ORF	Office of Research Facilities
CAN	Common Accounting Number	ORS	Office of Research Services
CAPS	Computerized Animal Procurement System	OSD	Office of the Scientific Director
CDC	Centers for Disease Control	OSHA	Occupational Safety and Health Administration
CRL	Charles River Laboratories	PI	Principal Investigator
DCT	Division of Cancer Treatment (part of the National Cancer Institute)	PNRC	Porter Neuroscience Research Center
DHHS	Department of Health and Human Services	PPE	Personal Protective Equipment
DIR	Division of Intramural Research	POTS	Purchase Online Tracking System
DS	Division of Safety	QA	Quality Assurance
DRSB	Diagnostic Request Submission Branch	RALAT	Registered Assistant Laboratory Animal Technician
DVR	Division of Veterinary Resources	RLAT	Registered Laboratory Animal Technician
FCRDC	Frederick Cancer Research and Development Center	RLATG	Registered Laboratory Animal Technologist
FDA	Food and Drug Administration	SAF	Shared Animal Facility
FY	Fiscal Year	SOP	Standard Operating Procedure
GDC	Gaithersburg Distribution Center	TAC	Taconic Farms
GLP	Good Laboratory Practices	TAO	Topical Antibiotic Ointment
HEPA	High Efficiency Particulate Air	TMS	Trimethoprim Sulfamethoxazole
HSD	Harlan Sprague Dawley	USAMRIID	United States Army Medical Research Institute of Infectious Diseases
IAO	Institute Approving Official	USDA	U.S. Department of Agriculture
IBC	Institutional Biosafety Committee	USUHS	Uniformed Services University of the Health Sciences
IC	Institute or Center	WRAIR	Walter Reed Army Institute for Research
ICD	Institute, Center, or Division		
IPM	Integrated Pest Management		
JAX	The Jackson Laboratory		
LATG	Laboratory Animal Technologist (AALAS Certified)		
MSDS	Material Safety Data Sheet		
NCAB	National Capital Area Branch of AALAS		
NCI	National Cancer Institute		
NCRR	National Center for Research Resources		
NEI	National Eye Institute		