

Animal Export Requirements

Purpose:

To describe the minimum requirements for shipping animals from Loyola.

Procedure:

- 1) In order to meet all existing regulations, the ACF must initiate all animal exports from Loyola.
- 2) Commercial carriers are engaged for animal export. All carriers require an appropriate health certificate with accompanying documentation of the health status of the animal(s) signed by the attending veterinarian. Preparation of all appropriate health forms will be handled through the ACF.
- 3) Investigators must contact the ACF at least 15 days prior to expected shipment of the animals. This will allow sufficient time for the shipping arrangements and certification papers.
- 4) The following information must be provided when animals are shipped:
 - Investigator:
 - Species:
 - Strain/Description/Identification:
 - Number of Animals:
 - IACUC Number:
 - Research History:
 - Health History (to be completed by ACF Staff):
 - Destination (i.e. other institution, location):
 - Carrier (assigned or approved by ACF Director):
 - Consignee (with approval from his/her institution):
 - Contact Person:

Animal Room Sanitization consistent with a Non-Barrier Facility

Purpose:

To describe the method of routine sanitization of non-barrier animal areas.

Procedure:

- 1) A mop bucket with appropriate disinfectant, a mop, and sponge, are transported to the corridor adjacent to the animal room to be sanitized.
- 2) Clean, dry caging is secured and prepared with the appropriate bedding from the clean cage storage area. Animal-ready caging is transported to the corridor adjacent to the room.
- 3) Animals should be transferred from dirty to clean cages according to the SOP "Transferring Rodents to Clean Caging".
 - a) Dirty caging is removed from the room and transported to the dirty side of the cage wash facility.
 - b) The racks will be moved into the corridor if there is not room to move them from one side of the room to the next, during the sanitation procedure.
 - c) The hallway is mopped and cleaned; occupied caging is transferred to this area.
 - d) The room is sanitized as outlined below.
 - d) The clean, occupied caging is moved back into the sanitized room.
- 4) Animals will be held in the corridor only for the time necessary to sanitize the room, and returned promptly. Under no circumstances are animals to be left in the adjacent corridor unmonitored.

Rooms are sanitized monthly in the following manner and documentation maintained on the husbandry log:

- a) Moveable equipment, such as food/bedding/garbage containers, is removed to the adjacent corridor. Food and bedding containers will have the contents dumped. The outer surface of the liner will be sprayed with an appropriate disinfectant, and placed in a sanitized container. Trash bags will be removed. Trash containers will be wiped or sprayed with an appropriate disinfectant and the liner replaced. Other materials such as brooms, mops, and dustpans will be placed in the mop bucket containing appropriate disinfectant and allowed to soak at least 10 minutes.
 - b) All surfaces are sponge mopped, then hosed down. The floor is squeegeed, and mopped with disinfectant, including the ceiling and light covers, walls, sinks, exposed pipes, vent covers, exhaust filters, doors, door frames, and, lastly, the floor.
- 6) Dirty caging/racks and all plastic food/bedding containers are transported to the dirty cage wash area and cycled through the cage wash area.

Disposal of Animal Carcasses and Animal Waste

Purpose:

To identify requirements for disposal of non-contaminated animal carcasses and animal waste.

Procedure:

- 1) Animals or animal waste contaminated with isotopes, carcinogens, or infectious agents require special consideration. Such agents must be detailed in the IACUC application where specifics of carcass handling will be determined.
- 2) In the ACF, all soiled material is transported to the dirty cage wash area (037), soiled bedding and refuse is then dumped into a black can liner that is pre fitted into a 32 gallon Rubbermaid waste container. After the bags are filled to a manageable level, they are pulled out and placed inside an oversized tilt truck. When the tilt truck is filled with the filled can liners, it is transported to a dumpster that is located at the facility's dock area. The dumpster is emptied weekly.
- 3) Animal carcasses for disposal or necropsy should be handled with respect; major surgical intervention must be sutured prior to disposal. Federal law specifically requires that the Principal Investigator assure death of the animal. Rodent carcasses should then be placed in biohazard bags for incineration or disposal. Identification on the outside of the bag is required on all carcasses for necropsy.
- 4) The primary sites for the disposal of non-contaminated carcasses is a refrigerator in Room 026 for specimens waiting for necropsy, tissue removal, or disposal.
- 5) Every Monday morning the container is taken to the ACF's dock area. The red biohazard bag is then removed, and placed into a Steri-Cycle container and labeled with an appropriate identification sticker. On Tuesday morning, the outside contractor (Steri-Cycle) removes the loaded containers from the building.

Emergency Response Plan Overview

Purpose:

To describe the general procedures for emergency preparedness and the handling of experimental animals.

Procedure:

- 1) In the event of any situation that may potentially affect the health or well-being of animals housed in the ACF facilities, the following personnel must be contacted for instructions. Contact information is listed in the "ACF Emergency Response Guide". Individuals acknowledging the emergency situation should attempt to call the first person on the list, and proceed until someone has been successfully contacted.
 - a. James Robinson, ACF Manager
 - b. Dr. James Cheverud, ACF Director
 - c. Dr. Lee Cera, D.V.M., Veterinarian
- 2) Supervisory staff will notify other personnel included in the specific emergency situation.
- 3) Every attempt will be made to maintain environmental conditions required to keep animals in their housing locations. If necessary, animals may be temporarily relocated under supervision of the ACF staff. If conditions necessitate, animals may be relocated to affiliated institutions. Principal Investigators will be notified within 24 hours of animal relocation or as soon as possible thereafter.
- 4) In the event of any emergency that may have the potential to permanently alter the physiologic parameters of experimental animals, memoranda detailing the experimental complications will be prepared by the ACF Director and distributed to Principal Investigators, the IACUC, and the Institutional Official within 24 hours.

Necropsy Requirements

Purpose:

To describe the procedures to be followed when an animal is found dead by ACF staff.

Procedure:

- 1) When animals are found dead by ACF Staff, a necropsy will be performed at the discretion of the ACF Manager”.
- 2) A necropsy is REQUIRED under the following conditions:
 - a) For any unanticipated death of a USDA covered species
 - b) For any rodent death as part of disease surveillance including the sentinel program
 - c) For any pattern of mortality, morbidity, or clinical illness
 - d) For any animal deaths associated with an incident report
- 3) The ACF Staff will perform a gross prosection, collect samples for supportive studies, and document gross findings. Tissue samples will be preserved, stored, and maintained by the ACF Staff. If warranted, tissues will be submitted for histological processing. Slides may be submitted to a contracted veterinary pathologist for microscopic evaluation. Tissue blocks and microscope slides will be archived in the diagnostic laboratory.
- 4) The ACF Manager will collate all results into a final Pathology Report. Pathology records will be maintained in the laboratory, submitted to the animal file, and a copy given to the ACF Director and Principal Investigator (if applicable).

Occupational Health and Safety Program Overview

Purpose:

To summarize the Occupational Health and Safety program for staff having exposure to research animals in the ACF. Personnel responsible for monitoring the program include the ACF Director and the Department of Environmental Services, and the IACUC.

Procedure:

- 1) The Occupational Health and Safety Program (OHP) is operated by the Office of Environmental Services. It is designed to protect both the personnel and the laboratory animals. Personnel included in the program are those involved in the direct care of animals and their living quarters as well as those individuals who have direct contact with animals (live or dead), their viable tissues, body fluids, or wastes. This includes all ACF staff, Investigators, personnel in Facilities, Loyola Environmental Services, and Building Management Service.
- 2) Mandatory annual training for Research Service Employees also includes the following:
 - a) Safety Training (topics covered are Keeping Health Care Healthy, Shock Proof, Electrical Safety, and Protecting Yourself from AIDS)
 - b) Fire Safety
 - c) Research Safety
 - d) Hazardous Materials Safety Training
 - e) Electrical Safety
- 3) Additionally, for personnel working with or near radioactive materials, it is mandatory that they participate in the Radiation Safety Training Program.
- 4) Waste Anesthetic Gas training is required of all staff working within the ACF Surgical Units.
- 5) The OHP includes a medical examination, annual tuberculosis screening, opportunity for rabies, hepatitis, tetanus-diphtheria pre-exposure, and respiratory fit testing. *Toxoplasma* serum titer checks for all women of childbearing age are recommended to assess the risk of complications that could result from exposure to toxoplasmosis during pregnancy.
- 6) Special procedures are required for:
 - a) the use of protective clothing
 - b) occupational health and safety training
 - c) experiments involving radiation
 - d) experiments involving hazardous agents

Operation, Maintenance and Validation of the Cage/Rack Washer

Purpose:

To outline instructions for operation and preventative maintenance procedures of the rack washer.

Procedure:

- 1) Operation:
 - a) The cage washer has a master on/off switch. This switch is turned on in the morning, and off at the end of the work day. It also has a standby switch that serves as on/off in cases where the machine remains on.
 - b) The cage washer has one standard setting using a mix of alkaline detergent, an acid base, and a neutralizer.
 - c) At the final rinse cycle, a temperature of at least 180° must be reached to kill organisms. If the machine does not reach 180° ACF Manager contacts the Steris (manufacturer) Representative who then services the washer. The Steris Representative does a monthly Preventive Maintenance on the machine.
 - d) If temperature reaches 180° but equipment does not appear clean after a complete cycle, the operator will assess the problem and either return the load to the rack washer for prewash, or return to rack washer for repeat cleaning/sanitization.
 - e) Water and steam is operated by Steris or Facilities. They have one main setting. If is malfunctions, either Steris or Facilities will be contacted.

- 2) Validation:
 - a) Once daily, temperature-sensitive tape, such as temp-tape 180° will be affixed to two areas not receiving a direct spray from the washer nozzles.
 - b) Temperature sensitive tapes are examined immediately after the caging is removed from the washer. The color strip should be entirely black; if one or more strips are not entirely black, the process for that washer should be repeated. If after the second test, one or more strips are not entirely black, then the washer will have “failed” the validation test. The ACF Manager will contact the Steris technician who will service the ACF cage washer. The machine will not be used until the problem has been resolved.
 - c) The above checks will be documented on a rack washer validation log.

- 3) Preventive Maintenance:

The following is conducted quarterly by Steris:

 - (1) Inspect all spray jets/remove debris
 - (2) Remove debris on/under pump screen (sump screen)
 - (3) Check around door load seal and remove any debris
 - (4) Clean floor grating
 - (5) Check the Safety Cable Emergency Stop
 - (6) Visually inspect the header feeder hose and clamps
 - (7) Inspect temperature & water probes
 - (8) Clean spot / stain from exterior cabinet
 - (9) Check all water/air fitting for any leakage
 - (10) Check all steam line
 - (11) Check cable tension & roller
 - (12) Check supply hoses
 - (13) Clean interior debris filter
 - (14) Remove pipe plug on header, run pump manually or use quick wash cycle

- (15) Clean the screen exterior (filter screen)
- (16) Clean the probes
- (17) Verify and adjust header cable tension
- (18) Grease header slide

Policies Governing the Use of Controlled Substances in Research involving Laboratory Animals

Purpose:

To describe policies and procedures regarding the procurement, storage, dispensing, use and disposal of controlled substances used in research involving laboratory animals. This policy supplements the "Controlled Substances Policy & Procedures (Lakeside Campuses)", found at <http://www.luc.edu/ors/policyguidance/controlledsubstancespolicyprocedureslakesidecampuses/>.

Procedure:

- 1) Controlled substances for use in research must be ordered by each Principal Investigator or the departmental representative/designee. These orders should be reported to the Office of Research Services (ORS) via the CAP system.
- 2) Controlled substances may be kept in the Principal Investigator's assigned room in the ACF under appropriate double locked conditions.
- 3) No export of controlled substances is to be made from the ACF to any other non-ACF location.
- 4) Use of controlled substances will be appropriately recorded in each laboratory by the Principal Investigator. The record will include: bottle number, date used, amount administered, balance remaining (in multi-dose vials), and name of person administering the controlled substance.
- 5) All controlled substances and records will be made available as required for inspection by internal or external inspecting officials.
- 6) All outdated or excess controlled substances must be picked up by the institutionally approved agency.

Policies Regarding Management of Mouse/Rat Breeding Colonies

Purpose:

To describe the general procedures for managing a mouse/rat breeding colony.

Procedure:

- 1) The Principal Investigator must have an IACUC approved protocol describing the breeding project and its relationship to other research projects. This protocol must detail the responsible chain of command for all activities related to the mouse/rat breeding program.
- 2) The Animal Care Facility (ACF) staff monitors animal health daily but the Principal Investigator is responsible for management of mouse/rat breeding colonies. The investigator is responsible for checking all breeding cages for pregnancy, births, pup size and quantity (recommended minimum of 3 times per week during breeding).
- 3) For breeding purposes the standard mouse/rat cage is designed to accommodate one adult female mouse/rat, one adult male mouse/rat, and their litter. Harem breeding (one male and up to three females) is permitted with careful management. The pregnant females must be separated before they have delivered their litters; any exception must be justified in the mouse/rat breeding protocol. Only one litter is allowed in a cage at one time. Exceptions must be approved by the ACF Manager.
- 4) Weaning of litters must be performed at 21 days of age. The day of birth is counted as day zero. Weaning may be delayed up to 28 days of age for strains whose pups are smaller than normal, as long as there is only one litter in the cage. When weaning, up to four adult mice/rats of the same sex may be housed in a standard mouse/rat cage. Exceptions must be approved by the ACF Manager. Any deviation from this policy must be detailed and justified in the IACUC approved protocol.
- 5) Cages that are overcrowded will be tagged by the ACF staff with a red overcrowding card. Overcrowded cages must be separated by the Principal Investigator or his/her staff within 72 hours of the date written on the card. If the Principal Investigator does not correct the situation within 72 hours, then ACF staff will separate the animals. ACF has the right to separate animals immediately if animal welfare concerns exist.

Preparation and Use of Cage Cards

Purpose:

To describe the preparation of cage cards and their utility in identification of animals within primary enclosures.

Procedure:

- 1) Cage cards will be produced by the ACF staff on the day of animal arrival, weaning, or separation.
- 2) Cage cards for each primary enclosure will be prepared for rodents which are generally group-housed.
- 3) Each cage card will contain the following information:
 - a) Investigator
 - b) Date Produced
 - c) IACUC project number
 - d) Species
 - e) Strain (must match a strain listed in the IACUC approved protocol)
 - f) Description
 - g) Animal ID and Sex
- 4) In addition to the above, other information may be added to the cage card, such as research information, as long as the required information is not obscured.
- 5) When appropriate, cage cards will be maintained and archived as raw data.

Preparation and Use of Disinfectants

Purpose:

To identify the compounds and mixing directions of disinfectants utilized in the Animal Care Facility (ACF).

Procedure:

The following disinfectants/cleaners will be used for their specified purposes. Personnel will wear gloves and mask when handling the concentrated liquid forms. All containers will be labeled appropriately.

- 1) Quaternary ammonium compounds
 - a) We use the quaternary ammonium compound Coverage Plus NPD for all of the surface areas. The solution of 0.5 ounce per gallon, or for heavy duty use, 2 ounces per gallon) is the manufacturer's recommended solution for the best results.
 - b) A solution is made according to manufacturer's directions.
 - c) This solution will be used to mop all floors and wipe down all walls, ceilings, and equipment used in animal housing rooms, procedural laboratories, and operating suites.
 - d) This solution will be used as a spray to disinfect materials entering the Facility and other materials requiring disinfection that cannot be wiped down or sanitized via the rack washer.
 - e) After this solution is applied, surfaces will be allowed to remain wet for a minimum of 10 minutes.

- 2) Stainless Steel Cleaner
 - a) Stainless steel cleaner is used to clean and polish stainless steel surfaces.
 - b) Spray or wipe area until wet. When using spray, clean with one cloth and polish with a clean, dry cloth.

Comments:

Material Safety Data Sheets for all solutions will be maintained in the ACF and in the cage wash area.

Quarantine and Conditioning Procedures for Rodents

Purpose:

To describe the quarantine and conditioning procedures for *Mus musculus* (mice) and *Rattus norvegicus* (rats) or other rodent species.

Procedure:

- 1) Laboratory rodents are generally isolated in a specified quarantine area, room 015. Following the complete quarantine and acclimation period they can be relocated to the room that will serve for long-term housing.
- 2) Laboratory rodents supplied by approved vendors (see SOP "Approved Vendor Listing") will be placed on quarantine status for a three (3) day health monitoring and acclimation period prior to moving out of the designated quarantine room. Complete animal health records from the vendor will be requested with each animal shipment unless routine reports are provided by the vendor. These records will be reviewed upon arrival and will become a part of the colony records kept by the ACF Manager.
- 3) Animals from different vendors may be placed in the same room at the discretion of the ACF Director.
- 4) All animals from non-commercial sources will have a clean health history (i.e. animals suspected of being positive for pathogens [adventitious, MNV viruses, Helicobacter, parasites, etc.] may be rejected from the quarantine facility). However, all quarantine rodents should be considered pathogen-suspect.
 - a) Rodents from non-commercial sources will undergo a minimum 14-day quarantine/conditioning period which will include the following:
 - i) Baseline serological profiles and parasitology tests;
 - ii) Daily monitoring for evidence of infectious disease;
 - iii) Results reviewed by the ACF Director, or designee, prior to release of the animals;
 - iv) The Principal Investigator involved in such a quarantine/conditioning period is held responsible for all costs involved.
 - b) Access to the quarantine areas is limited to ACF personnel and official inspectors. Access for research staff may be granted by the ACF Director on a case-by-case basis.
- 5) The quarantine/conditioning period for commercial source rodents will consist of the following procedures:
 - a) Day 1
 - i) Animal(s) are received and examined according to SOP "Receipt of Incoming Animals"
 - ii) Animals are assigned to an approved animal protocol and room.
 - iii) Cage cards are created for groups of animals according to SOP "Preparation and Use of Cage Cards."
 - iv) ACF must be notified within 24 hours in order for diseased animals to be replaced by the vendor.
 - b) Day 2-7
Animals are continued to be observed carefully for signs of illness or discomfort; all concerns are directed to the ACF Manager.
- 6) If the quarantine period for commercial animals is uneventful and the health of the animal remains stable, the veterinary staff will release the animals at the end of 7 days.

Receipt of Incoming Animals

Purpose:

To describe the procedures for receipt and inspection of all animals before movement into quarantine or general husbandry areas.

Procedure:

- 1) Aquatic animals may be placed directly into general housing areas for quarantine. Animals from non-commercial sources will be diverted into appropriate quarantine areas.
- 2) All incoming animals will be received at the designated area. They will be visually inspected and checked in by the ACF staff.
- 3) If any of the following conditions are observed in animals not concealed within shipping crates, the affected animal(s) may be refused and returned to the vendor:
 - a) death
 - b) overtly diseased, including, but not limited to, the following signs:
 - 1) lethargy or weakness
 - 2) rough haircoat
 - 3) ocular or nasal discharge
 - 4) diarrhea
 - 5) sneezing, coughing, or labored breathing
 - 6) hunched posture
 - 7) physical injury that may potentially affect the well-being of the animal
- 4) Rodent shipping containers:
 - a) Shipping containers must arrive intact (no openings, punctures, etc.) to be acceptable.
 - b) Unacceptable containers will either be refused or routed through a species-specific quarantine/acclimation period identical to that of animals arriving from a non-approved vendor. These animals will not be permitted to enter into the ACF facility. Vendors will be expected to replace all animals arriving in unacceptable containers.
 - c) All appropriate documentation must accompany the shipment.
 - d) If dead or diseased animals are found upon receipt, the animal procurement individual must be contacted. If diseased/dead animals are found when a shipping crate is opened, the animal procurement individual will be contacted as soon as possible. The order may be accepted or refused (i.e. replacements requested) at the discretion of the ACF Manager in consultation with the Principal Investigator involved.
- 5) ACF personnel will promptly spray or wipe newly arrived animal containers with an appropriate disinfectant (see SOP "Preparation and Use of Disinfectants") and transport them directly to the ACF by routes which avoid contact with other personnel/animals. Disposable gloves will be worn by ACF personnel when handling these containers.
- 6) If the containers will be transported on carts or other conveyances, these are also to be thoroughly sprayed, wiped down, or obtained from the clean cage storage area.
- 7) All shipping containers are separately sprayed or wiped with disinfectant again in the outer corridor. Transport carts which are used outside the facility do not pass from the outer corridor into the ACF. Shipping containers are transferred to carts which have not left the ACF. Disposable gloves used during transport of the containers are discarded prior to entry into the ACF.

- 8) Shipping containers are opened within the animal room in a manner which minimizes contact of the animals with the outside of the container. The container is not allowed to touch surfaces in the animal room other than the receiving cart or floor.
- 9) The animal order "Special Instructions" section should be reviewed to ensure that they are identical to packing slip instructions. All complex orders including multiple strains, various ages and weights, sperm positive dates, or other varied animals require a member of the research staff be present for the uncrating. The ACF staff must call the contact person on the order before uncrating the order. The ACF representative and the research technician both sign off on the packing slip. If there is a delay of 2 hours or more the ACF staff will call the ACF Director for further instructions.
- 10) As they are being caged, the animals are inspected by the receiving caretaker. If any animal is dead, shows signs of disease, or other abnormalities, the animals are left in the container while the attending veterinarian is contacted for investigation.
- 11) Shipping containers are promptly removed to the dirty room or refuse area, and the receiving cart is sprayed with disinfectant or washed.
- 12) After receipt and housing of the animals, the packing papers and receiving reports are submitted to the ACF Director for processing with copies provided to the Principal Investigator.

Importing Rodents from Non-Commercial Sources

Purpose:

To describe the procedures for importing rodents from non-commercial sources; *Mus musculus* (mice), and *Rattus norvegicus* (rats).

Note: Rodents originating from non-commercial sources may be imported only under the following circumstances:

- If the source institution is able to supply suitable documentation indicating that the animals in question are free from all excluded agents, they will be quarantined in room 015 in the ACF.
- If the disease status of the source colony is uncertain or the source is known to harbor excluded agents, the animals may need to be re-derived at a commercial vendor prior to entering the ACF facilities.
- Rodents, regardless of health status, may be imported for acute use in quarantine. These animals will not be evaluated in quarantine. They may be used in the quarantine facility for tissue collection or acute experiments, where the animals are sacrificed immediately upon arrival at the ACF. Access to these animals is restricted. All acute use procedures must be discussed and coordinated with the ACF veterinarian prior to the animals' arrival and be specified in the IACUC protocol.

Procedure:

- 1) Submit a Request for Animals form including collaborator and institution animal facility contact information. The ACF will need to obtain the Animal Health Reports for the past year.
- 2) The ACF Staff will ensure the information is complete, obtain any additional information, and present the information to the Veterinarian.
- 3) If the ACF Veterinarian approves the shipment, notifications will be sent to the shipping institution and to the LUC PI or designee.
- 4) The ACF Staff will arrange shipment of the animals.
- 5) Mice will be housed in quarantine in room 015 of the ACF upon arrival. The mice are set up with a sentinel mouse cage. Upon completion of weekly exposures, for 14 days, to soiled bedding from quarantine mice, sentinel mice are tested for antibodies to MPV-1, MPV-2, MVM, NS-1, MHV, MNV, TMEV (GDVII), EDIM, SEND, PVM, REO, MPUL, LCMV, MAV, ECTRO, K, POLY, MCMV, HANT, ECUN, CARB, MTLV; and tested for pinworms, helicobacter and fur mites.
- 6) Rats will be housed in quarantine in room 015 of the ACF upon arrival. The rats are set up with a sentinel rat cage. Upon completion of weekly exposures, for 14 days, to soiled bedding from quarantine rats, sentinel rats are tested for antibodies to RPV, H-1, KRV, RMV, NS-1, SDAV, SEND, PVM, REO, MPUL, LCMV, MAV, RTV (GDVII), HANT, ECUN, CARB; and tested for pinworms, helicobacter and fur mites.
- 7) If the animals are negative for all agents at the end of quarantine, the animals may move to the assigned housing area.
- 9) If, during the quarantine, the animals are found to harbor excluded agents, the investigator will need to discuss potential options with the ACF veterinarian. Rederivation options will be based on the pathogen and genotype of the imported animals and may include treatment, burnout or embryo transfer.
- 10) Surveillance and isolation procedures will be instituted by ACF based on the identified pathogen.

General Staff Policies

Purpose:

To describe the general policies for all staff working within the ACF.

Procedure:

- 1) Food, including candy and gum, and/or beverages is prohibited in the ACF animal facilities. Food and beverages are permitted only in the staff office.
- 2) Loyola University's goal is to provide a smoke free environment on campus. Smoking is prohibited in all enclosed University facilities including the ACF. Violation of this policy will be addressed through the Human Resources progressive disciplinary policy.
- 3) Electronic devices are prohibited in all animal care or support areas unless used for animal enrichment. These devices are only allowed in offices, locker rooms and staff lounges. Permission to use these devices in operating rooms, procedural rooms, necropsy rooms, and other laboratories must be obtained from the ACF Manager.
- 4) If animal care staff become ill, they are required to report the illness to the ACF Manager. If this illness resulted from animal contact, Occupational Health must also be notified. Employees who report to work and are determined by the ACF Manager to be a health threat to the animal colonies will be immediately removed from duty.
- 5) Indiscriminate or negligent behavior by any LUC personnel which may threaten the health of any research animal is regarded as a serious infraction and will lead to disciplinary action. Negligent behavior by same personnel in protecting themselves (not wearing PPE) will also lead to disciplinary action.
- 6) To protect the health of the animals housed in the animal quarters, "non-research" animals are prohibited from all animal facilities. This prohibition includes "pets" of any species.
- 7) Children are generally not permitted in any animal housing, procedure areas or laboratories. Special permission may be granted on a case by case basis by the ACF Manager.

Animal Census

Purpose:

The primary function of the census system is to record all animal housing provided by the ACF. Accumulation of census data also provides the basis for generating reports for facility management.

Procedure:

- 1) Each animal cage is assigned a cage card when animal shipments are received and the cages are set up. The cage card will identify the sex, strain, and identifying information of each animal in the cage. The cage card identifies and is associated with an Institutional Animal Care and Use Committee (IACUC) Project Number.
- 2) Research staff is responsible for setting up new cages, such as mating cages, holding cages for weanlings, and cages for experimental animals. Any new cage set-up also must have a cage card with the identifying information listed above.
- 3) Animal technicians will perform a weekly census of all cages held in the facility by investigator and IACUC Project Number.

Animal Experiments Involving Biohazardous Materials

Purpose:

To describe the minimal precautions necessary when using animals in experiments involving biohazardous materials.

Procedure:

- 1) The university has facilities to handle agents up to BSL-2. Agents classified higher than BSL-2 are prohibited.
- 2) The IACUC protocol form contains a section requiring the Principal Investigator (PI) to identify the use of biohazardous materials. If such material is used, the PI needs to submit an application to the Institutional Biosafety Committee (IBC).
- 3) If the IBC determines that a special level of care is necessary to contain the biohazard, the PI will be required to complete an SOP which describes the appropriate handling of animals, cages, bedding and other waste materials.
- 4) Once the IBC approval is received and the SOP is completed and accepted, the IACUC review process can be completed.
- 5) The Occupational Health Program dictates that hands should be washed after handling biohazardous materials, infectious materials, animals, and after working in a laboratory. A biological safety cabinet is used when handling infectious materials. All work surfaces are cleaned and disinfected daily when hazardous agents are used, and biohazardous materials are decontaminated by autoclaving or chemical disinfection before they are washed, reused, or discarded. Full emergency care is provided to all employees under existing policies.

Animal Experiments Involving Chemicals

Purpose:

To describe the minimal precautions necessary when using animals in experiments involving chemical substances.

Procedure:

- 1) The IACUC protocol form contains a section requiring the Principal Investigator (PI) to identify the use of chemical substances. If such substances are used, the PI needs to submit an application to the Institutional Biosafety Committee (IBC).
- 2) If the IACUC determines that a special level of care is necessary to contain the chemicals, the PI will be required to complete an SOP which describes the appropriate handling of animals, cages, bedding and other waste materials.
- 3) The Occupational Health Program dictates that hands should be washed after handling chemicals. A fume hood is used when handling toxic chemicals.

Animal Experiments Involving Radiation

Purpose:

To describe the minimal precautions necessary when using animals in experiments involving radioactive substances.

Procedure:

- 1) If "Exposure to Radioactive Material" is indicated on the approved IACUC protocol, the indicated employees are instructed that it is mandatory to participate in the Radiation Safety Training Programs by the Radiation Safety Officer.
- 2) Included in the IACUC protocol form is a section that requires the investigator to check whether or not he/she will be using radioactive materials. If the investigator checks "yes", then the Radiation Safety Officer must be consulted.
- 3) All staff exposed, or potentially exposed, to sources of radiation are monitored by film badge. Monthly reports identify persons who are at increased risk; appropriate follow-up training and monitoring are provided by the Radiation Safety Officer.
- 4) Routine, unannounced inspections by the Nuclear Medicine Service and the Nuclear Regulatory Commission ensure compliance with regulations.
- 5) Animals euthanized after administration of radioactive materials may be considered hazardous by the Radiation Safety Officer and must be handled appropriately. Such carcasses are placed in thick plastic bags which are labeled as to contents. The Radiation Safety Officer determines the final disposition of the carcasses.
- 6) Appropriate precautions required when housing animals exposed to radioactive material, (such as handling of animals, bedding, and wastes); must be discussed on a case-by-case basis with the Radiation Safety Officer, Director, ACF and the Principal Investigator. Standard Operating Procedures must be in place prior to initiation of such studies.

Room decontamination after a viral outbreak

Purpose:

To identify procedures for decontamination of animal housing rooms and procedural laboratories after a viral outbreak.

Procedure:

- 1) Spray all equipment thoroughly with bleach or equivalent thoroughly before removing from the room. Make sure to use appropriate personal protective equipment (PPE) per manufacturer's label.
- 2) Disinfect all room surfaces, including the sinks, ceiling, pipes, ductwork, light covers, grill vents, and sprinklers with Quatricide PV or equivalent using a scrub brush taking care to remove all organic material from cracks and crevices.
- 3) Room must remain empty for 24 hours before proceeding to step 4.
- 4) Tape exhaust vents; rinse all surfaces, then wipe all surfaces including all those mentioned in #2 above with bleach or equivalent. Make sure to use appropriate PPE per manufacturer's label.
- 5) Change all air filters.
- 6) Room must remain empty for one week before repopulation.

Routing and Procurement of Research Animals and Related Supplies and Equipment

Purpose:

To define policies which guarantee that the purchase of animals, animal related equipment, food, and supplies are centralized, and that applicable city, state, federal, and institutional regulations pertaining to animal procurement, receiving and housing are met.

Procedure:

- 1) After IACUC protocol approval and receipt of appropriate funding, investigators should contact the IACUC Office for an IACUC number. This number serves as an authorization number for placing an animal order.
- 2) All animal orders must be submitted to the ACF Manager with an associated IACUC project number.
- 3) The ACF Manager or designee must approve space availability prior to the placement of the order.
- 4) For most species, a minimum of 3-7 working days is required for animal delivery. For species or strains that are difficult to obtain, delivery dates will vary with supply. Investigators must keep the ACF informed about delivery dates.
- 5) All acquisition of animals and related food and caging will be handled directly by the ACF for all investigators with the exception of controlled and hazardous agents. Acquisition of veterinary biologicals, animal care supplies and equipment related directly to the care of the animals will also be handled directly by the ACF through a standard purchasing system. Exceptions to this must be approved in the IACUC protocol. For purchase of controlled substances, refer to SOP "Policies Governing Research and Controlled Substances". Purchase of hazardous materials is the responsibility of the P.I. and such purchases must adhere to institutional policy.
- 7) Commercial vendors are able to provide complete and excellent animal health records with quality assurance, therefore animal orders are limited to these suppliers (approved on a case-by-case basis). All animal orders from non-commercial sources must comply with policies outlined in SOP "Importing Rodents from Non-Commercial Sources".
- 8) Wild and endangered species.
 - a. This category includes any animal that must be captured. Under existing laws, capture of an animal requires a special permit from the State of Illinois and USDA. The Principal Investigator will obtain such permits as the need arises. Any investigator wishing to use atypical laboratory species (e.g. raccoons, prairie dogs, opossums, mink) must discuss this with the veterinarian and ACF Manager. Investigators must allow a minimum of 90 days for institutional acquisition of applicable permits.
 - b. Endangered species are obtainable only under special conditions with a restricted permit from the federal government. Arrangements for these animals must be discussed with the veterinarian a minimum of 120 days prior to anticipated delivery of the animals to allow institutional acquisition of applicable permits.
- 9) Requirements for placing orders for timed-pregnant and surgically altered animals vary with species and vendor. However, commercial vendors generally require special arrangements well in advance of the anticipated delivery date. Commercial vendors do not always have animals available for specifically requested delivery dates. These orders are best handled when the

company can be notified well in advance and animals are actually bred for a specific research protocol. Although vendors vary with their guarantees on timed pregnant animals, investigators are advised to discuss this with the ACF staff as orders are placed.

Sanitization of cages, racks, and small equipment.

Purpose:

To describe the process for cleaning cages and racks and small equipment.

Procedure:

- 1) Dirty cages and other small equipment are transported to the dirty side of the cage wash area on trucks. Dirty racks are wheeled directly to the dirty side of the cage wash area.
- 2) Waste material from cages, litter pans and food bowls is dumped into lined garbage bins dedicated to the dirty cage wash area. Adhered material will be scraped off with a scraper to remove as much visible matter as possible. Caging and racks will be rinsed prior to being run through the cagewasher.
- 3) A respirator-type mask will be worn by personnel during the dumping/scraping of material from routine soiled caging.
- 4) Shoebox-type caging, filter top housing, wire-tops, feeders, and food bowls are placed on a rack designed to allow these items to be cycled through the rack washer.
- 5) Items smaller than mouse shoebox-type caging (such as cage card holders, water bottles, and sipper tubes) are placed into perforated crates that allow complete washing and rinsing.
- 6) Racks, trucks, and other large, wheeled caging (e.g. transport kennels) will be wheeled directly into the rack washer.
- 7) After washing, all items will be stored in the clean cage storage area(s).

Sanitization of Operating Rooms and Support Areas

Purpose:

To define the procedures for preparing operating areas for survival surgery on non-rodent mammals.

Procedure:

- 1) The entire surgical facility will be sanitized with an appropriate disinfectant (See SOP#02-18-4101, "Preparation and Use of Disinfectants"). This will occur by a wipedown of all walls, ceilings, floors, operating tables, support tables, Mayo stands, IV poles, electrocautery cabinets and stands, anesthesia machines, operating room lights and all other permanent support equipment located within the confines of the operating room. All non-essential equipment will be removed from the area for ease of cleaning.
- 2) Each entire OR room will be sanitized as above not less than weekly; except for ceilings which will be sanitized every other week.
- 3) The cleaning schedule below is to be followed on each day that an OR or the specified equipment is utilized.
 - a) Evening Schedule:

All debris will be removed from the operating room and the kick buckets will be emptied. Kick buckets are to be double lined with clear plastic disposal bags. Gross contamination will be removed with a routine sweeping and scrubbing. With the exception of the ceiling, the entire operating theater and all other permanent support equipment located within the confines of the operating room will then be sanitized with an appropriate disinfectant as above. The principle investigator will be responsible for cleaning the operating site.
 - b) Morning Schedule:

Every morning, before any cases begin, the operating sites will be sanitized as above.
 - c) Between Case Schedule:

All debris will be removed, the floor damp mopped and the operating field will be wiped down with an appropriate disinfectant. Kick buckets are to be emptied and relined with two clear plastic bags.
 - d) Anesthetic Supplies/Machines:

Anesthetic supply and return hoses and endotracheal tubes used for a case must be removed and sanitized before reuse. Sanitation will be by means of cleaning with an appropriate disinfectant. The vapor traps on the anesthesia machines are to be drained after each use and the carbon dioxide absorbent canister should be replaced whenever any indicator coloration (usually purple) is present.
- 4) Animal preparation areas, recovery rooms, and surgeon prep areas will be sanitized after each day of use.

Transferring Rodents to Clean Caging

Purpose:

To describe the procedures for changing rodent cages.

Procedure:

- 1) The technician changing cages must wear PPE as posted. Prior to the start of changing cages, the surface where the changing is to take place should be cleaned with an appropriate disinfectant (see SOP, "Preparation and Use of Disinfectants").
- 2) A clean cage containing bedding is placed on the changing surface. If wire tops and cage card holders are scheduled for changing, these are included with the clean cage.
- 3) A single dirty cage is removed from the rack and placed next to the clean cage on the changing surface. The wire top is open just enough to allow access to grasp the animals by hand and transfer them into the clean cage. The cage card is placed onto the clean cage. The dirty water bottle will be placed in a bottle rack and replaced with a clean bottle. The clean cage is returned to the rack.
- 4) If the wire top is replaced, the food from the dirty top is placed into the dirty cage. New food will be placed in the new wire top. A clean water bottle will be placed in the wire top of the clean cage.

Request for Euthanasia/Necropsy

Purpose:

To describe the process of requesting animal euthanasia/necropsy.

Procedure:

- 1) Research Staff may request animal euthanasia by clearly identifying the cage cards of the animal(s) to be euthanized by writing "Sacrifice" on the cage card. Individual animals that are group housed can only be euthanized by special arrangement with the ACF Manager. The euthanasia will be scheduled and performed by the ACF Staff.
- 2) A necropsy may be requested by the Research Staff by completing a request for necropsy form available in the ACF office. All requests will be submitted to the ACF Director who will initiate the necropsy.

Response to Environmental Monitoring Alarm

Purpose:

To outline the actions that must be taken in response to an alarm of the ACF environmental monitoring system both during normal working hours and off hours.

Procedure:

- 1) The environmental conditions in the ACF are monitored by ACF staff.
- 2-) If environmental conditions deviate from the accepted standards, the ACF staff will notify the engineering staff of the incident.
- 2) If it is determined that the problem cannot be corrected quickly enough to avoid potentially endangering the health and/or safety of the animals the personnel listed in the ACF emergency response guide will be contacted as soon as possible and briefed.
- 3) Engineering personnel will brief the appropriate ACF contacts as to the status of ongoing repairs as needed until the required work has been completed.
- 4-) Engineering personnel will notify the ACF contacts when the job has been completed and the environment is returned to an acceptable status.

Response to Natural Disasters

Purpose:

To identify key features of the Emergency Response Plan as it relates to natural disasters.

Procedure:

- 1) ACF administrative staff will periodically convene to assess the risk of inclement conditions that may affect the health and well-being of animal subjects. Such conditions include, but are not limited to, power failure, severe thunderstorm, winter storm, tornado, fire, earthquake, and drought.
- 2) In the event of an emergency situation, employees are the primary concern. Every attempt must be made to prevent distressful conditions for animals maintained within the ACF (see "Emergency Response Plan Overview").
- 3) During periods of natural disaster, research animals must receive basic care such as food, potable water, relief from temperature extremes (defined for these purposes as 45-85° F), and sanitation of enclosures. If these conditions are not possible to maintain, relief from the disaster is improbable, or conditions have rendered an animal inappropriate for experimental use, then the animal(s) affected must be moved to another facility or humanely euthanized as expediently as possible.
- 4) In the event that basic care cannot be provided for animal subjects within the ACF, evacuation to a suitable research animal facility may be attempted. During evacuation, rodents are to be transported in filter-topped cages. If evacuation is elected, and there remain some animals which cannot be easily transported due to illness or experimental condition, these animals must be euthanized.
- 5) During any natural disaster, every attempt should be made to remove the pressure regulators from gas cylinders.
- 6) Flashlights must be maintained in the Loyola surgical suites and the ACF main office.

Rodent Identification

Purpose:

To describe the procedures of individually identifying rodents.

Procedure:

- 1) Although individual rodent identification is not required, it is strongly recommended. Preferred methods of permanent identification include tattoo, ear punch and subcutaneous microchip implant. Toe clipping for individual identification is allowed on newborn pups in the first week of life, especially in cases where DNA is harvested from the material and requires explicit justification in an IACUC-approved protocol.
- 2) For rodents in which ear punch, tattoo, or subcutaneous microchip implantation is impractical or contraindicated, individual identification will be performed using an ink marker on the base of the tail.
- 3) Markers to be used are identified as "permanent," and "non-toxic". Ink color should be sufficiently dark to provide sufficient contrast with the skin color.
- 4) Identification codes are created at the discretion of the Principal Investigator/Study Director. Each code should be unique for a given animal.
- 5) Individual animal codes will be copied onto the appropriate place on the cage card affixed to the housing enclosure.
- 6) Animals identified with non-toxic, indelible ink will be observed by the PI/Study Director at least every three days for maintenance of readable codes. Identification code will be reapplied weekly or more often as needed.

Usage of Non-Pharmaceutical-Grade Chemical/Compounds in Laboratory Animals

Purpose:

To describe the procedures/guidelines for the use of non-pharmaceutical-grade chemical/compounds in laboratory animals

Notes:

- The use of pharmaceutical-grade chemicals/compounds in laboratory animals ensures that the chemicals/compounds administered meet the established documentable standards of purity (~97%) and composition established by the United States Pharmacopeia National Formulary (USP/NF) or the British Pharmacopoeia (BP).
 - The indiscriminant use of lower grade chemicals/compounds with higher levels of impurities or poorly formulated non-commercial preparations can introduce unwanted experimental variables or even toxic effects. Although pharmaceutical grade chemicals/compounds should be used in experimental animals whenever possible, the use of non-pharmaceutical-grade chemicals/compounds in experimental animals is an acceptable practice under certain circumstances.
 - The NIH Office of Laboratory Animal Welfare (OLAW) and the United States Department of Agriculture (USDA) both have determined that the use of non-pharmaceutical-grade products should be based on:
 - scientific necessity
 - non-availability of an acceptable veterinary or human pharmaceutical-grade compound
 - specific review and approval by the IACUC. *Cost savings alone is not considered an adequate justification for the use of non-pharmaceutical-grade reagents in laboratory animals.*
-

Procedures/Guidelines:

1. Consideration should be given to the grade/purity of the chemical/compound being proposed, as well as the formulation of the final product. Issues such as sterility, pyrogenicity, stability, pH, osmolality, site/route of administration, pharmacokinetics, physiological compatibility, and quality control should be considered when proposing the use of a non-pharmaceutical-grade agent.
2. When developing and reviewing a proposal to use non-pharmaceutical-grade agents the investigator and IACUC should also consider animal welfare and scientific issues related to the use of the agent, including potential for contamination, safety, efficacy, and the inadvertent introduction of confounding research variables.
3. Whereas, many of the above issues have been addressed in the commercial manufacturing and formulation of pharmaceutical-grade products, the same cannot be said for non-commercial formulations using non-pharmaceutical-grade reagents or those manufactured in the laboratory. Although the possible implications of the use of non-pharmaceutical-grade chemicals/compounds in non-survival studies appears less evident, OLAW has stated that the scientific issues remain the same and professional judgment, as outlined above, must still apply.
4. The use of non-pharmaceutical-grade agents in laboratory animals should be clearly delineated and justified in the IACUC application. Where possible the description should include the chemical grade of the agent(s) being used, source of the reagents, as well as a description of the appropriateness of the agent, its formulation and vehicle.
5. Formulations and vehicles may need to be adjusted depending on the route and site of administration, as well as the species under consideration.

Use of Protective Clothing

Purpose:

To describe minimal requirements for the use of protective clothing in areas housing experimental animals.

Procedure:

- 1) Animal care technicians must don clean scrubs and ACF - dedicated shoes daily. If non-ACF areas require entry, fully buttoned, full-length laboratory coats must be worn over scrubs.
- 2) Dedicated outerwear may be required to enter occupied animal rooms. Details on required outerwear will be posted outside the animal rooms.
- 3) Some areas may require additional procedures. These procedures will be posted on the entry door.

Visitors (Including Minors) in Animal Facilities and Research Areas

Purpose: To protect the research animals, research endeavors and the visitors themselves, while also preventing disruptions of research activities by unauthorized individuals.

- 1) Visitors may be permitted in animal facilities of Loyola University if approved in advance by the ACF. Appropriate safeguards must be in place to screen visitors for health issues related to animal exposure. The visitor is accompanied at all times by an authorized guide. Visitors are permitted to observe but not handle animals.
- 2) It is the responsibility of the faculty or facility guide to inform the visitor that animal facilities may pose health risks to individuals who have allergies to animals or animal dander, or those who are immunocompromised. Such persons should be advised to avoid entering animal facilities while animals are in residence or to take all appropriate precautions to avoid or limit exposure. If there is any question regarding a risk to the visitor's health, the visit must not occur until such time as the visitor is clearly informed of the risks involved. It is also the responsibility of the faculty or facility guide to discuss with the visitor the risks that he or she may pose to research animals. Persons who have active tuberculosis, influenza, or other respiratory diseases are not permitted to visit animal facilities.
- 3) Visitors must be under the direct supervision of a guide at all times during a tour or visit. In addition to IACUC-approved investigators, other individuals who may serve as guides include a member of ACF management (Director, Assistant Director, Operations Manager, Supervisor or Animal Health Care Technician).
- 4) Pets may not enter animal facilities.
- 5) Visitors shall not be permitted to take still or video photographs in the animal facility unless:
 - a. The visitor is serving as a photography vendor for the faculty and/or ACF guide.
 - b. The photographs are necessary or allowed for the documentation of work under an IACUC-approved protocol.

The original negatives or electronic media are retained as the property of Loyola University. The faculty member or guide should advise visitors concerning the prohibition of photography in conjunction with any request for a visit. Visitors requesting photographs may commission the University to provide such photographs.

Weekend and Holiday Care

Purpose:

To define the coverage for holiday and weekend care.

Procedure:

- 1) Weekend and holiday care is provided by full or part-time staff members.
- 2) Coverage is for 8 hours (unless exempted by the Operations Manager, ACF). Duties assigned for each non-regular work day consist of feeding, watering, scheduled cage cleaning, waste removal, administering treatments, basic animal observations, and occasional assistance to investigators.
- 3) The Director and the Manager of the ACF are always accessible by phone, see emergency contact information posted in the facility.

Zebrafish Care and Feeding

Purpose: To outline the proper procedures for the care and feeding of zebrafish

Procedure:

- 1) Receiving
 - a) Zebrafish are shipped/transported in sealed, water filled, plastic bags with oxygen added. Upon arrival, shipping bags are inspected for signs of damage and shipment accuracy.
 - b) Fish are inspected for any signs of stress, trauma, or mortality that may have occurred while in transit.
 - c) Fish from approved vendors are introduced into an appropriate size tank and isolated from resident fish until they are fully acclimated to the aquatic system.
 - d) Fish are acclimated to the aquatic system within 24 hours of arrival by placing the sealed bag into the housing tank. The bag with the fish is floated for a minimum of 30 minutes depending on water temperature to allow for the fish to slowly acclimate to the conditions.
 - e) Fish from unapproved vendors, or arriving with health concerns, or found sick, are isolated from healthy fish by placing them in their own tank. The designated lab personnel are notified as needed.
 - f) Individual shipments are identified by source, date of arrival, PI, IACUC #, and any other pertinent information.
 - g) Animal numbers are recorded on the census sheet at the time of arrival.

- 2) Housing

Recommended Maximum Housing Density:

Tank Size (Liters)	Holding	Breeding
10	100	60
3	30	18
1.5	10	6

A net is utilized for catching fish that must be removed from a tank.

Water conditions and quality for zebrafish are as follows:

Parameter	Range	Preferred	Frequency
Temperature	23-29°C	25-28°C	Daily
PH	7.0-8.0	7.5	Daily
Conductivity	3-500 µS	200 µS	Daily
Alkalinity	50-200 ppm	170 ppm	Biweekly
Hardness	4-8 dGH	6 dGH	Biweekly
Ammonia	0	0	Biweekly
Nitrite	0-25 ppm	0	Biweekly
Nitrate	0-40 ppm	10 ppm	Biweekly

Room light cycle, 14 hours light (e.g., 6 AM till 8 PM) /10 hours dark cycle. Housing access is limited to IACUC certified personnel only.

- 3) Feeding

- a) Zebrafish are fed commercial zebrafish diet (e.g., Hikari™ Tropical Micropellets or Zeiglar® Adult Zebrafish Complete Diet).
- b) Zebrafish should be fed twice daily by adding enough food to each tank so that food is available to all fish and nearly all food is eaten within 10 minutes.
- c) Feeding is recorded on the **Room Log Sheet**.

- 4) Daily Duties

- a) Health checks are conducted.
- b) Zebrafish are fed twice daily as outlined above.

- c) Tanks are inspected and the temperature, pH, and conductivity (use colemetric test kit, refractometer, thermometer) are recorded.
 - d) The system particulate filter is inspected and changed as needed. The charcoal filter is changed as needed. Additional maintenance schedules are conducted as needed.
 - e) All new arrivals are added to, and any animals sacrificed or found dead are deducted from the zebrafish census sheet.
 - f) Floor is swept as needed and trash is emptied.
- 5) Biweekly Duties
- a) Water chemical analyses are conducted twice weekly to determine water quality parameters by monitoring nitrite (NO₂), nitrate (NO₃), ammonia (NH₃), and water hardness levels with appropriate test bits.
- 6) Semi-annual Duties
- a) Tanks are disassembled and cleaned with tap water. Caution: Use of chemicals and/or detergents can be detrimental to fish.
- 7) Cleaning Patterns
- a) Floors of rooms and adjacent corridors will be swept daily.
 - b) Floors of rooms and adjacent corridors will be mopped with an appropriate disinfectant (see SOP "Preparation and Use of Disinfectants") at least twice weekly.
 - c) Sinks will be cleaned with disinfectant at least twice weekly.
 - d) Doors, door frames, and all other surfaces will be wiped weekly with disinfectant.
 - e) Rooms, including walls and ceilings, are sanitized monthly, as emptied of occupants, or more often as needed, using appropriate disinfectants (see SOP "Animal Room Sanitization").
 - f) Accidental spills and soiled wall surfaces will be cleaned as discovered or reported.
 - g) Soiled equipment left in animal or procedure rooms will be removed daily unless otherwise approved by the Operations Supervisor, CMF.
 - h) All towel dispensers will be checked daily and replenished as necessary.
 - i) Trash containers will be checked daily and removed as needed.
 - j) Room exhaust air filters are changed or cleaned monthly or more frequently if needed.
 - k) Light fixtures and tubes are checked daily. Any failures will be reported to the Operations Manager, CMF, who will then generate work orders for repair by Engineering Service personnel.
- 8) Reference
- a) Aquatic Habitats™ System Instruction Manual 2nd Edition.