Southern Illinois University Edwardsville
IACUC Disaster Plan
Facility specific information in Appendix 1

INTRODUCTION:  The Guide to the Care and Use of Laboratory Animals (Guide), the Public Health Service Policy on Humane Care and Use of Laboratory Animals, and the USDA Animal Welfare Act Regulations all require that animal housing facilities have a disaster plan to deal with “unexpected conditions that result in the catastrophic failure of critical systems or significant personnel absenteeism, or other unexpected events that severely compromise ongoing animal care and well-being” (Guide, p. 35). Southern Illinois University Edwardsville has in place an Emergency Management Plan (EMP) intended to provide administrative guidelines for coping with most campus emergencies, to protect human life and protect property. The purpose of this plan is to establish an operational framework for dealing with emergencies and disasters in accord with the EMP and to assist animal care units in preparing for such contingencies.

This plan must be approved by the Institutional Animal Care and Use Committee (IACUC), and the Institutional Official for Animal Care (IO, Dean of the Graduate School). This document shall be reviewed by the IACUC at least semi-annually, in April and November of each year, and any modifications submitted to the above-mentioned bodies for approval and retained in their records.

PURPOSE:  To provide a planned, coordinated response for potential disasters affecting the animal housing facilities at Southern Illinois University Edwardsville. Specifically, this plan defines actions that can be taken to prepare for emergencies, and also describes actions that will be taken to minimize animal discomfort and death that can occur due to loss of cooling, heating, or fresh water. Procedures for relocation of animals, or, if necessary, euthanasia are also described.

APPLICATION:  This plan covers all animals housed for purposes of research or teaching in Southern Illinois University Edwardsville. Each animal facility shall implement a plan to ensure that personnel are trained to respond appropriately in the event of an emergency. To ensure the safety of animals and personnel, it is important that good communication be maintained, and efforts coordinated among users of the facility, with different facilities, emergency personnel, and institutional officials. The approved Disaster Plan for Animal Care Facilities (DPACP) is an integrated part of the University-wide EMP.

SITUATIONS AND ASSUMPTIONS:  When will the DCACP be enacted? The SIUE EMP lists over 20 different possible disasters. In all cases, animal users must first comply with emergency responders, and receive approval prior to entering the facility.

The most probable emergencies at SIUE animal care facilities sustained loss of power, water, or ventilation (cooling/heating), fire, flooding (from building water supply, if not natural flooding), hazardous spill, and personnel shortage due to severe inclement weather or pandemics, such as influenza or other infectious diseases. Other contingencies are listed below.

The DCACP may be enacted by senior University officials depending on whether the situation is a Disaster, Major Emergency, or Minor Emergency, as defined in the EMP. The facility director or other
senior personnel responsible for each facility will be notified via text messaging or phone, and should be on site to inform first responders regarding floor plans, species housed, PPE requirements for entering facility, hazards/decontamination procedures, etc. (See Appendix 1 for Notification and Coordinated Responses.)

**NOTIFICATION AND COORDINATED RESPONSES:** Each animal housing facility must have a sign at each entrance prominently labeled with personnel to contact in case of emergency of disaster (facility directors and principal investigators). Similarly, each individual room housing animals should have this information. The sign should direct emergency personnel to contact Campus Police for phone numbers and email information for contact personnel. This information is to be updated monthly, and with researcher changes. A representative sample of such signs are provided in Appendix 3.

If a facility director or researcher should be the first on the scene of an emergency situation, he or she should get to a safe distance immediately and then call SIUE Police at 911 or the non-emergency SIUE Police number (618-650-3324) as the situation dictates. In the event of loss of power, HVAC, water, or steam, contact facilities immediately. Facilities and Management can be reached at 618-650-3711 during regular business hours. Other times, call the non-emergency SIUE Police number (618-650-3324) to report a building problem. In all cases involving research or teaching animals, the facility director should also be contacted. If the emergency causes distress, harm, or death to the animals, or in other ways affects animal care and research, the IACUC should also be contacted. This should be put on a sign in a visible location and is also included in Appendix 1.

If an emergency or disaster event should occur, it is important that responders be alerted to the animal facilities and ensure that facility directors or a representative principal investigator is informed of any emergency that might affect research or teaching animals. In the event a disaster has been declared or is ongoing, facility directors and researchers should follow directions of first responders and only enter the facility after given clearance.

**Disaster Plan Components**

**DESCRIPTION OF FACILITIES:** A description of each facility is in Appendix 1, and a map of each facility is in Appendix.

A current copy of this document is to be placed the IACUC Teams site, and in a clearly marked binder at each facility.

1) **Potential disasters, emergencies, or other incidents that may disrupt animal care**

   a) **Power/HVAC/water/steam failure.** Loss of utilities services is a major disruption of an animal care facility, whether it involves something as drastic as the loss of heating and cooling systems, or the inability to provide clean primary enclosures. Short-term power failures are not uncommon at the SIUE campus. However, the lights and HVAC in the area backed up by emergency generator. The autoclave and cage washer do not function on backup power, though normally the 110 V outlets should function. Environmental monitoring systems may not be
operational if the server has lost power, however, so it will be vital for researchers to closely monitor environmental conditions in each room. Steam outages are also not uncommon, preventing the use of the autoclave, if present. Water outages are infrequent. Contact Facilities Management (618-650-3711) to restore utilities.

b) **Winter storms.** Winter storms are responsible for occasional closures of the SIUE campus. A winter storm may prevent essential personnel from safely traveling to the University and disrupt animal care. Additionally, winter storms may adversely affect utilities. However, typically there is advance notice of winter storms; adequate preparation (see Section 2 below) can significantly limit disruptions.

c) **Fire.** Fire is always a possibility in a science building. All personnel should be aware of the locations of fire alarms and fire extinguishers, as well as evacuation plans and safe exit routes. In the event of a fire, activate the fire alarm, exit the building and get to a safe distance from the building (at least 500 feet). Phone 911 from a safe phone immediately. Note- fire alarm is a constant buzz.

d) **Hazardous material spill.** Although there are not many hazardous materials used in the vivarium, a spill in another part of the building may require an evacuation. In the event of a spill, close off the area, and call Environmental Health and Safety (618-650-3584).

e) **Tornado.** Although rare, tornadoes can cause severe structural damage. During tornado alarm (rising and falling alarm), go to the closest tornado shelter and await further instruction.

f) **Shooter/bomb threat.**

i) **Shooter.** If safe to leave, exit building immediately, inform others. Call 911. If not safe to leave, go to the nearest room, lock or barricade door. Turn off lights, silence phones and keep quiet. Do not answer door. Call 911.

ii) **Bomb threat.** Obtain as much information as possible, keeping line open for as long as possible. Don’t hang up! Don’t use cell phone, open drawers, cabinet, or turn lights on/off. Use another line to call 911. Prepare to evacuate upon police direction.

g) **Flooding.** Flooding due to natural causes is unlikely at the SIUE animal facility. If flooding occurs due to a burst pipe, call Facilities and Maintenance at 618-650-3711 during regular business hours or the non-emergency SIUE Police number (618-650-3324) at other times. Some holding rooms also have many electrical cords for aquaria, chillers, etc. Alert facilities personnel of this additional hazard.

h) **Absenteeism due to disease outbreak.** Pandemic contagious disease like that brought on by COVID-19 in 2020 may result in large scale absenteeism, severely disrupting animal care operations. The vivarium director and PIs should follow the directions of the SIUE administration in taking care of animals.
i) **Earthquake.** Get under table or sturdy furniture or kneel against inside corner of wall and cover head. Call 911 if someone is injured or there is significant building damage. Evacuate building when safe.

2) **Preventative measures and preparations.** The primary concern of the animal care facility is to provide continuity of care to research animals in the event of any disaster/emergency, while ensuring the safety of personnel. All preventative measures must be consistent with the University’s Emergency Management Plan.

a) **Notification of emergencies and disasters:** The vivarium and aquaria rooms must have a sign at each entrance prominently labeled with personnel to contact in case of emergency or disaster (facility directors and principal investigators [PIs]). Similarly, each individual room housing animals should have this information. The sign should direct emergency personnel to contact Campus Police for phone numbers and email information for contact personnel. This information is to be updated monthly if the information changes.

b) **Critical Incident Response Team (CIRT).** A CIRT will be defined for each facility, and specified in Appendix 1, including their emergency contact information. These individuals should be considered Official Responders capable of providing emergency animal care and be provided access to the facility once conditions are deemed safe by authorities. The building manager, Office of Environmental Health and Safety, and SIUE police shall be kept informed of the composition of the CIRT.

i) **The command center for the facilities** will be the corridor of outside the vivarium. This will be where the CIRT first meets and conducts operations after a major emergency, once admittance to the building has been granted by first responders. A corkboard/whiteboard shall be installed for posting messages. Be aware that cell phone service may be limited in some regions.

c) **Communication.** The Facility Director is on the text-messaging list to receive alerts about malfunctions in the environmental monitoring system, and e-lert will provide information about weather or other emergencies. E-lert will also inform about clearance to return after major emergencies. In the event of an emergency, a phone tree, shall be initiated, in the order of the names/numbers listed for the CIRT above, so that additional messages may be relayed. (The facility director will contact the IACUC chair, consulting veterinarian, institutional official, and the Senior Compliance Specialist. At this time, the facility director will establish a schedule for providing updates to these individuals, as well as the building manager and representatives from EMS.) It may not always be necessary or prudent for the entire CIRT to rush to the facility after an emergency. The Facility Director will always endeavor to be the first on the scene following an emergency to assess the situation and inform the remaining PIs of conditions on site. Additionally, all PIs are encouraged to sign up for e-Lert text messages to alert the University community about dangerous situations. Keep in mind also that during disasters cell phone bandwidth may be overwhelmed, and text messages may get through when phone calls won’t.
d) **Power/HVAC/water/steam failure, and emergency supplies.** The backup generator should supply power and HVAC in the event of an emergency. A flashlight, emergency radio, and extra set of batteries will be kept in a region indicated in Appendix 1, and clearly specified on the entry door, should the emergency backup power not be available. Batteries will be replaced every April and November. During a prolonged outage, the card key system (if present) may fail; reliance on a master key will require that users be mindful of returning the key to proper location. Ensure that all responding personnel have hard key access, in the event that the card key system fails.

i) Develop an SOP for appropriate animal conditions and care for your animal room and store in the room’s binder. This SOP shall include a plan for daily room (and if necessary, aquarium temperature checks), frequency of manual temperature checks, location of the thermometer used to monitor the temperature, as well as an acceptable temperature range for the species housed in the room. Feed and watering requirements, PPE requirements, lighting needs, waste disposal, and other daily housing needs should be included in this SOP. A plan for responding and reporting deviances from normal conditions should also be included.

ii) PIs can mitigate problems arising from utility outages by keeping a two-week supply of food, drinking water, treated water necessary for aquaria, and clean/sterile and cages/aquaria on hand. It is each PI’s responsibility to ensure that supplies are rotated periodically so that they are fresh. When there is advance warning of a potential crises (winter storm, pandemic flu) larger amounts should be stockpiled. The location of stored food, water, as well as feeding and cage/aquarium schedule shall be included in the binder in each room where daily observations and other records are stored.

iii) A sufficient number of space heaters will be on hand in the event of loss of heat, and all facility personnel should be notified of their location. PIs should have portable lights, fans, and extension cords on hand to assist with lighting and evaporative cooling if the heating or light fails. In addition, portable lights, a fan, extension cords and a first-aid kit all be available.

iv) Other preparations. If advanced warning is provided, the following procedures should be considered where appropriate:
   1. PI (or other authorized person) should arrange with EMS (618-650-3324) to pick up animals from the morgue freezer and set it at the lowest setting.
   2. Ensure that fridge/freezer units in vivarium are plugged in and at lowest settings, and stock with any perishables that may be necessary (perishable food, medications, euthanasia supplies, etc.).
   3. Ensure that feed, bedding/substrate and other supplies, as well as hazardous waste, are protected from contact with water.
   4. Copy records (preferably, store electronically on a backup server.).
   5. Unplug any unnecessary electrical equipment (unneeded lights, cagewasher, autoclave, etc.).
   6. Identify priority equipment and make effort to protect from damage.
(7) Ensure that heavy equipment is secured (gas tanks; cage racks may be positioned to protect from falling).

e) Animal census. A census for animals in each room in the vivarium, along with PI contact information and protocol information, will be stored in a clearly marked binder. In addition, a sign or dry erase board will be placed outside each room housing animals, indicating the number of each species housed in the room. This census will be updated each Monday by the researcher.

f) Evacuation plans.
   i) Small-scale incidents, involving just one room: In this case, animals may be moved to another available room in the facility, conditions permitting. Animals of different taxa should not be housed in the same room if at all possible to maintain biosecurity, but if they are it is essential that they be housed in filter-top or otherwise bio-secure cages. Infected animals should be clearly marked and housed in a separate room from uninfected animals.

   ii) Medium scale incidents, involving larger parts of the facility. This might involve short-term removal of animals to hallways, or other building, conditions permitting. This would only be a short-term measure to prevent imminent death, but would not be acceptable for more than a few hours due to inadequate HVAC, temperature controls, etc. This is not acceptable for infected or barrier animals.

      (1) No need has been determined nor approval obtained for relocation of animals to another building on campus. Non-infected animals may be moved to other parts of the building for short periods of time by transporting on racks.

   iii) Large scale incident involving entire building, campus etc.- requires removal to alternate animal care facility where adequate care may be maintained

      (1) No need has been determined nor approval obtained for relocation of animals to another building on campus.

g) Euthanasia criteria, plan, and supplies. When animals have escaped, animals are suffering, or conditions have deteriorated such that caretakers are unable to feed, water, or control the environment, animals must be euthanized humanely. Each PI has been provided the opportunity to identify animals that are irreplaceable; none were deemed to be so at this time. If in the future a PI has irreplaceable animals and has approval to evacuate to another animal care facility capable of housing them in compliance with federal guidelines, he or she is to identify such animals as Priority Laboratory Animals (PLA) by using red cage/tank colored cage cards to identify them as irreplaceable. A large-scale incident plan will also need to be formulated.

   i) Guidelines: “Animals that cannot be relocated or protected from the consequences of the disaster must be humanely euthanized.” (p. 35 “The Guide”).

   ii) It is important for PIs to understand that euthanasia may be the only management option available to alleviate pain or distress in the aftermath of an animal facility disaster. During a disaster, the need to relieve animal distress or pain or provide for human safety may outweigh experimental needs.
iii) Euthanasia decisions following a disaster or emergency will only be made in close consultation with the PI responsible for the animal’s care, the consulting veterinarian, and an IACUC representative.

iv) All PIs are to maintain euthanasia supplies and a euthanasia SOP clearly identified in the binder in their animal room. Euthanasia protocols should be species appropriate. However, the AVMA Guidelines on Euthanasia include exceptions for disaster-related instances where deviations from standard euthanasia methods may be necessary: “Under unusual conditions, such as disease eradication and natural disasters, euthanasia options may be limited. In these situations, the most appropriate technique that minimizes human and animal health concerns must be used.” Such alternate methods will only be used upon consultation with the consulting veterinarian.

v) **Develop response and recovery actions.** “Response” refers to the actions occurring immediately following the event or disaster, whereas “recovery” begins after the initial response has concluded. The response phase involves mutual notification of first responders and animal care personnel, and the assurance that facilities are safe, or return of the facilities to conditions safe for animal personnel to work. Animal care personnel are to follow all instructions of first responders, and are not to enter the facility until approval is given to do so. Recovery includes assessment of the impact to the animal care facilities and animals, provision of care, and restoring the program to normal function after the disaster or emergency. After operations have returned to normal, necessary reporting to the IACUC of any serious disruption of animal care, animal deaths/euthanasia, and possibly future, improved preparation/mitigation based on lessons learned are vital components of a recovery plan. Response and recovery are covered together in the following section.

3. **Disaster Response and Recovery; Emergency Care**  Note: All response and recovery procedures by animal care staff must be consistent with protocols detailed in the SIUE Emergency Management Plan. This section focuses on animal care once animal care personnel have been granted access to facility.

**If you are on scene when a disaster hits, whom do you call?**

**911:** Call 911 for fire, crime in progress, medical emergencies, large chemical or biological spills. Call 911 for weather-related events or earthquakes only if emergency assistance is required.

**Environmental Health and Safety:** call EMS (618-650-3584) for small chemical or biological spills.

**Facilities Management:** Call Facilities Management (618-650-3711) for loss of power, water, HVAC, steam, and burst pipes.

a) When returning to the site following a disaster/emergency: **Always be safe and follow instructions of emergency personnel.** Under all circumstances, human safety should always be placed first! Once cleared to enter the facility, the first animal care facility representative (director, PI) should evaluate the situation. Assess in the particular the following:
i) Are there any hazards to personnel or animals? (This could include loss of ventilation in biohazard/barrier room, escaped animals, standing water in possible contact with electrical wires/appliances, etc.) Can operations proceed safely? To do so for any significant period of time will normally require most or all of the following:

1. Uninterrupted supply of food, water, and bedding, for at least 2 weeks.
2. Maintenance of normal temperatures and light cycles, using existing air circulation system and light system (with backup power, if necessary).
3. Electricity for animals requiring circulated air or water (aquaria, ventilated cages).
4. Ability to clean, sanitize, and sterilize tanks and cages per normal protocols. This will require fresh water for washing, appropriate cleaners for washing cages in the cagewasher if power allows, or by hand. Cages from biohazard rooms must be autoclaved for 20 minutes prior to washing. Mouse cages, metal feed tops, bottles, and sipper tubes may be washed by hand using hot water and low residue soap (Alconox, Contrad) followed by several rinses in water. Aquaria and feed bowls can be cleaned with non-toxic cleaners such as a mixture of vinegar and water or Simple Green.
5. Ability to clean the facility normally, including access to water for mopping, removing garbage. The normal schedule of housekeeping should be followed, involving sweeping corridors and mopping with Quatricide-treated water (or similar product). Door handles and carts are also sprayed with Quatricide once weekly, and carts after every use. Wipe down with paper towels (keep large supply). Each researcher should clean his/her own room following the normal protocol. Keep in mind that the facility may require a major clean up and disinfection depending on emergency (e.g. flood, tornado).
6. Appropriate methods of euthanasia and carcass storage/removal (including electricity for freezer). See euthanasia planning above, and details below.
7. Containment of any rooms with potential biohazards or barrier rooms, including PPE, methods for containment, removal, and sterilization of wastes.
8. If most of the above listed provisions can be met, the integrity of all studies affected and wellbeing of affected animals can be safely maintained. If these conditions cannot be met, and there is an alternate location in the building, evaluate the second location. Proceed with small- or medium-scale evacuation plan (Section 2f above), if feasible, after assembling CIRT.

ii) Is the disruption likely to last more than 72 hours? If not, generally it is best to shelter in place. If the emergency is likely to last longer than 72 hours, moving animals to an alternate animal facility may be necessary, and enact animal large-scale evacuation plan (Section 2f above), if feasible, after assembly of CIRT, consultation with facility director, consulting veterinarian, and Institutional Official. Some situations may allow sheltering in place longer than 72 hours, as long as appropriate conditions are met. Animals deemed to be irreplaceable (Priority Laboratory Animals) should always be marked red cage/tank colored cage cards, and have a large-scale evacuation plan in place.

b) Assemble CIRT. Contact all PIs for the facility. (Initiate calling tree.) Contact other facility directors for assistance if necessary or to coordinate efforts, in the case of a campus/system-wide emergency. Determine method and frequency of updates/status reports. Post also in command center.
c) Immediate steps to take after assembling CIRT (depending on severity/conditions):
   i) Determine animal numbers, species, and location. Have any animals escaped?
   ii) Assess health status. Triage animals based on health status and exposure. Euthanize animals that are beyond rescue.
   iii) Dispose of dead animals. Post this information in the command center.
   iv) Determine need for food, water, bedding, and other supplies based on animal census. (This can also be done if prior warning.)
   v) The CIRT must ensure that all PIs are able to care for their respective animals, or arrange a schedule for care.
   vi) Feed and water all animals as necessary according to SOPs. Fill available containers with water. Hydrogel packs may be used in place of drinking water if stored on site.
   vii) For aquatic animals, ensure water levels are adequate. Fill extra tanks/containers with dechlorinated water if available.
   viii) For animals in ventilated cages; ensure that cage racks are connected to backup power outlets, if available.
   ix) If ventilation fails, and conditions allow and are secure, open room doors to adjacent rooms/hallway to stabilize temperatures. Do not open doors to biohazard/barrier rooms.

d) Small- or medium-scale evacuations. Continue to provide routine daily care, using modifications as described in Section 2f. No research should be performed during this temporary housing situation.

e) Sheltering in place: If the criteria below are met, animals may be sheltered in place by continuing routine daily care. The following are minimal conditions that must be met for sheltering in place. If these needs cannot be met, animals in biohazard/barrier rooms should be euthanatized immediately:
   i) Uninterrupted supply of food, water, and bedding is essential. Plan for at least two weeks excess, and rotate stock frequently.
   ii) Maintenance of normal temperatures and light cycles. These may be supplied by external sources backed up by portable generators, if necessary.
   iii) Electricity for animals requiring circulated air or water (aquaria, ventilated cages). Some aquarium species may have needs met by more frequent water changes if aeration is not possible.
   iv) Ability to clean, sanitize, and sterilize (if necessary) tanks and cages for adequate housing needs. When water supplies are low, water may be conserved by more frequent changing of bedding, thus decreasing the frequency of cage washes.
   v) Ability to clean facility normally, including access to water for mopping, removing garbage.
   vi) Appropriate methods of euthanasia and carcass storage/removal (including electricity for freezer).
   vii) Containment of any rooms with potential biohazards/barrier rooms, including methods for containment, removal, and sterilization of wastes.
f) If providing for the integrity of all studies and corresponding animals is not possible, either due to inability to evacuate to an alternate location, poor environmental control, lack of supplies or care personnel, or if animals cannot be protected from distress and suffering, animals that cannot be provided for must be humanely euthanized following the euthanasia plans described in Section 2 g. If there is a select group of animals that are deemed irreplaceable or otherwise extremely high priority (Priority Laboratory Animals marked red cage/tank colored cage cards), they should be evacuated following large-scale evacuation plans described in Section 2 f iii.

g) **Recordkeeping.** Maintain records of actions taken during the disaster, including animals euthanized- make up sheet of which animals euthanized (or missing), reason for euthanasia, consultation with PI and/or consulting veterinarian, and method of disposal. Method of disposal should normally be the morgue freezer. If power in vivarium but not other locations, can plug in refrigerator/freezer unit and store there temporarily.

h) **Develop recovery actions.** This includes restoring the program to normal function, necessary reporting to the IACUC of any serious disruption of animal care, and possibly future, improved preparation/mitigation based on lessons learned. Note, disinfection of the facility/rooms may be necessary prior to return of any evacuated animals if any disruption of the microbiological climate has occurred (e.g. flooding, open doors, foot traffic, etc.)
References:

- Office of Lab Animal Welfare-Disaster Planning and Response Resources Page: [https://grants.nih.gov/grants/olaw/disaster_planning.htm](https://grants.nih.gov/grants/olaw/disaster_planning.htm) (lead to some of other sites listed here)
- Checklist of Disaster Planning Expectations in the Guides and Animal Welfare Regulations. [https://www.aalas.org/media/9f2d1ea0-7d9c-40fa-8143-5c6c9962d27d/1601577593/IACUC/Disaster%20planning%20checklist.pdf](https://www.aalas.org/media/9f2d1ea0-7d9c-40fa-8143-5c6c9962d27d/1601577593/IACUC/Disaster%20planning%20checklist.pdf)
- USDA Disaster Planning. [https://awic.nal.usda.gov/research-animals/disaster-planning](https://awic.nal.usda.gov/research-animals/disaster-planning)
- Animal Welfare Disaster Contingency Plan, Indiana State University. [http://www2.instate.edu/research/Files/IACUC_EmergencyResponsePlan.pdf](http://www2.instate.edu/research/Files/IACUC_EmergencyResponsePlan.pdf)
- Animal Care Unit Disaster and Emergency Preparedness Plan, Western University of Health Sciences www.westernu.edu/bin/research/iacuc_emergency_action_plan.pdf
Southern Illinois University Edwardsville
IACUC Disaster Plan Acceptance and Approval by Institutional Official

By: [Signature]

Jerry B. Weinberg, Institutional Official,
Associate Provost for Research and Dean of the Graduate School

Date: 03/01/2024