

UNC SATELLITE FACILITY DISASTER PLAN
September 2012

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DISASTER PLANNING FOR RESEARCH ANIMALS AND SATELLITE FACILITIES AT THE UNIVERSITY OF NORTH CAROLINA

A. Purpose and Background

The Guide for the Care and Use of Laboratory Animals (8th edition) states that animal facilities **must** have a disaster plan. It is important that the University have emergency preparedness plans in place for its animal facilities, including investigator maintained satellite facilities, both for the safety of the research and animal care staff and the welfare of the animals. Most of these animals are dependent on commercial food and water and are vulnerable to significant changes in their environment. A small number of these animals pose a health risk to personnel. There is a slim chance that animals could escape from a facility during a major catastrophe, compounding an already difficult situation for the public. This plan outlines how the investigator and the University will coordinate their response to emergency situations, what disasters are likely, and what steps the investigator and the University have taken to prepare for potential disasters.

B. Coordinating Response to Emergencies in a Satellite Facility

Emergencies will occur unexpectedly both during and outside of normal work hours. Clear lines of communication are critical for a coordinated response to such emergencies. The following describes communication guidelines during an emergency.

1. Notification of an Emergency Situation

UNC Public Safety, UNC EHS or UNC Facilities Services personnel will usually contact the OACU and/or DLAM Operations Director should an emergency occur that involves research animals. For emergencies, officials should call the Principal Investigator's 24 hour contact telephone number. This number should be clearly posted in an obvious location upon entering the satellite facility.

In instances where a satellite operator discovers a potential emergency he or she should immediately contact UNC Public Safety at 962-8100 or 911 when out of harm's way. If the emergency endangers the lives of animals or significantly compromises animal care, the Principal Investigator should also contact the main Division of Laboratory Animal Medicine telephone (843-7992, after hours pager: 919-216-6434) or the Operations Director (843-0737) for immediate assistance with animals, as well as the Institutional Animal Care and Use Committee (966-5569).

Environment, Health and Safety should also be contacted in the event of any DLAM or animal emergency (Mary Beth Koza at 919-883-7027 or Cathy Brennan at 919-730-3983). The IACUC and Institutional Official shall decide whether the emergency should be reported to NIH's Office of Laboratory Animal Welfare (OLAW), the US Department of Agriculture's Animal Care Regional Office (USDA) or the Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC).

2. Entering a Potentially Damaged Animal Facility During a Disaster

Fire, explosion or other type of disasters may damage the interior of an animal facility. In such instances the research staff should not enter the facility until permitted by first responders on scene or UNC Public Safety. Fire and other emergency officials will assess the safety of the facility before granting personnel access. Once cleared for entry the investigator or designated research staff should evaluate conditions inside the facility and develop a response to any problems in accordance with guidelines in this document.

Only after being cleared for entry, the investigator shall assess the situation and respond as follows:

- a. evaluate hazards to personnel, impairments to animal support systems, and available support staff;
- b. determine current animal census and location by rooms;
- c. prioritize needed equipment and supplies;
- d. tailor response to meet most urgent needs;
- e. determine what additional help may be needed and make the appropriate contacts;
- f. choose method of communication and determine frequency for update of reports;
- g. delegate tasks to available personnel;
- h. decide whether the emergency warrants contacting senior administrative officials (see above).

3. Communicating and Coordinating Response during Adverse Conditions

Winter storms, tornadoes, hurricanes, etc. may prevent staff from coming to work or disrupt telephone lines. Staff unable to travel to work due to adverse conditions should call the investigator and leave a message regarding their situation. **The investigator should institute a telephone crisis tree** for all staff involved in animal care so that individuals can readily be contacted. Individuals who are able to make it to the work site should check with other members of the staff to determine staffing.

IACUC maintains keys for each satellite facility. Investigators are responsible for ensuring that IACUC has a current key or access code should they change after satellite facility approval.

C. Potential Disasters and Their Probability

1. Fire

Fire is a distinct possibility in an animal facility, as well as other adjacent locations in a research building. In accordance with the UNC Emergency Planning and Evacuation policy **each staff member should be oriented to the locations of fire alarms, fire extinguishers, evacuation plans and emergency exits in their respective building.** Should a fire occur, a fire alarm should be activated and/or 911 called, all personnel should evacuate the building and meet at a pre-arranged location outside the building.

2. Hazardous Materials Spill

Should a hazardous materials spill occur staff should leave the area immediately, seal off the room and call EHS (962-5507) during working hours or 911.

3. Winter Storms

Winter storms, though infrequent, can cause significant disruption to animal care routines, limiting staff's ability to travel to the work site. Winters storm could also damage utility services. Usually there is advance warning with a winter storm, so staff has time to prepare, making sure all animals are attended to prior to the event and sufficient supplies are present. Check Alert Carolina for status updates.

4. Hurricanes

Hurricanes, as demonstrated by Hurricane Fran in 1996, can significantly disrupt animal care routines and damage utility services. Response would be similar to that described in 'Winter Storm' above.

5. Tornadoes

Tornadoes are more powerful than a hurricane but damage less area. There may be some limited utility outage and the possibility of damage to roof exhaust fans. Outside structures could be severely harmed if hit by a tornado.

If a Tornado WARNING (event is occurring) is issued, or you have any indication that a tornado may be approaching, TAKE COVER IMMEDIATELY. The safest place is an interior room on the lowest level away from windows. If employees in research buildings can't get to the lowest level of the building, they should take shelter in interior hallways, away from windows. The Principal Investigator/Lab Manager is responsible during working hours for assuring that all personnel, including administrative staff, receive warnings and know the proper response.

6. Flood in the Laboratory
Immediately contact Public Safety or place a work request through Facilities Services (962-3456) to shut off water.
7. Power Failure
The laboratory ventilation system, lighting, and outlets are on emergency power and should be maintained in the event of a power failure. Contact Facilities Services (962-3456) and place a work request if power is not restored. Maintain flashlights in an accessible location.
8. Animal Rights Activism, Bomb Threats, Active Shooter
Animal Rights Activists can cause major disruptions within animal research facilities, as evidenced by the April 2002 People for the Ethical Treatment of Animals (PETA) infiltration of DLAM. It is important that all research staff be on alert for possible demonstrations or suspicious people within the facilities, as well as potential sabotage of research activities.
9. Disasters with unlikely chance of happening.
Most animal facilities, with the exception of the CHYDARU aviary and the Institute of Marine Science are away from open water, streams, ponds, etc. and are located on high ground, minimizing the chance of significant flooding outside of a burst water pipe or flash flooding. The North Carolina Piedmont is not an area where earthquakes are frequent or damaging. All animal facilities are located some distance from forests and would not be damaged by a forest fire.

D. Preparations for Emergencies

1. Electrical Power Loss
The loss of electrical power from a winter storm, hurricane, tornado, etc. would disable lighting, refrigerators, freezers, reverse osmosis watering systems, cage washers, autoclaves and most importantly, supply and exhaust fans, limiting cooling and heating capabilities. Fortunately the University's electrical infrastructure is such that the chance of complete electrical power loss for an extended period of time is minimized. Three electrical substations provide redundancy, with the ability to transfer the power load to the other stations should one substation go down. In addition, supply lines from Carolina Power and Light are underground, limiting possible disruption. The Co-generation Facility on Cameron Avenue, used primarily for steam also has the ability to generate 50% of the electrical needs of the campus. These systems worked well during Hurricane Fran when UNC lost power for less than an hour while the surrounding community was without for days. Chances are any electrical outages would be of short duration.

All animal facilities should have emergency generators providing power for critical needs building exhaust and supply fans as well as some building lighting, unless there is an IACUC approved justification for not having one.

2. Water Supply Loss

The University's water tower on Manning Drive provides a ready supply of water and proved invaluable during Hurricane Fran. Flooding and inadequate back-up systems caused Orange Water and Sewer Authority (OWASA) to lose its processing and pumping capabilities. The community lost water services for several days, while the University maintained a steady supply. OWASA, with the help of the University has worked to make its systems more redundant. For extra insurance **each facility should first sanitize then fill a requisite number of plastic barrels with water when there is advance warning of impending severe weather.**

3. Chilled Water Loss

The loss of chilled water, the source of cooling for animal facilities, during warm weather could raise temperatures to an intolerable level for most research animals. As in the case of the University's electrical infrastructure there is significant redundancy within the chilled water system to minimize extended periods of complete loss. Three separate chiller plants have the ability to service the needs of the campus should one plant become inoperable. Multiple electrical circuits service each plant so that problems in one area of the electrical distribution system will not shut a plant down. If chilled water capacity drops below 50% an emergency plan will divert chilled water to the most critical buildings and areas, of which animal facilities and health care areas are top priority. Valves have been added to the distribution system so that a break in the chilled water piping could be localized to one or two buildings, and that piping repaired quickly.

4. Steam Loss

The loss of steam, the source of heating for most UNC animal facilities, during cool weather could lower temperatures to an uncomfortable level for most research animals. Although most animals may handle abnormally cool temperatures better than abnormally warm ones an extended period of temperatures in the low 60s or below can cause significant problems. The University's Co-generation facility has three boilers with built-in redundancy and the plant has configured its operation so that no single component failure (i.e. boiler, compressor, mills, etc.) can take down the system. Redundancy is built into most steam distribution lines with more than one route available to each building. In addition to steam generation the Co-generation Plant can produce over 50% of the University's daily electrical requirements if needed.

5. Injuries Requiring Emergency Medical Assistance:

During normal working hours (8:30-4:30), if a worker is injured and requires medical assistance and they are able, he/she should immediately call out of the facility to notify someone that they need help. After business hours 911 should be called. If able to safely exit the lab, the injured person will exit the lab as usual, contact the PI and go to the University Employee Occupational Health Clinic during normal working hours or the Emergency Room after hours. If a major medical emergency occurs after business hours, 911 should be called for medical assistance.

6. Transportation & Relocation of Animals

Principal Investigators should ensure adequate transport of animals for relocation. DLAM has several climate-controlled vehicles which **may** be available for transportation of animals:

- an international truck with a lift gate and an enclosed body having 8' x 16' of interior space heated and cooled by a Thermo-King unit; 2 regular size cargo vans with climate control (1 van has an insulated cargo area); 2 minivans used for single or double cage transportations; and 5 sports utility vehicles with 4 wheel drive capability. In addition, there is a pick-up with a lift gate and bed cover. The large international truck can fit up to six 34" by 37" transport cages for dogs, cats, etc. in the rear of truck. Please contact the DLAM Operations Director or Assistant Operations Director (919-843-0737 OR 919-216-6434) to check for availability.
7. Feed, Bedding and Other Husbandry Supplies for Extended Emergencies
Each animal facility should have sufficient supplies of feed and bedding for one to two weeks.
 8. Preparations for Extended Staff Stays
Each facility should have a supply of flashlights and usable batteries, as well as a basic first aid kit. Staff who respond to emergencies that may require extended stays are encouraged to bring an "Emergency Kit" with them, including bedding, non-perishable food, water, flashlight, etc.
 9. Medical Supplies and Triage of Animals in Distress
DLAM has a small veterinary pharmacy located in the Berryhill Experimental Surgery Suite and has a complete range of veterinary supplies including bandages, syringes, instruments, medications, euthanasia solutions, etc. Drugs are kept under lock and the Veterinary staff has access. All animal facilities are equipped with carbon dioxide euthanasia chambers and carbon dioxide tanks, and there is tricaine available for euthanasia of aquatic species in the Berryhill Experimental Surgery Suite. Should these services be needed, contact DLAM veterinary services at pager #216-1235 or office #966-2906.
 10. Capture and Restraint of Loose Animals
Loose animals from on-campus animal facilities are unlikely, as these buildings should withstand significant damage from severe weather or other likely disasters. However, investigator staff should be trained and capable of handling and restraining the species under their care.
 11. Sanitation, Disposing Waste and Carcasses
If conditions make washing unfeasible it is acceptable to dump dirty cage substrate or bedding and replace it with fresh substrate. Dirty bedding can be stored in bags until it can be removed according to normal procedure. Animals being held will be euthanized if circumstances warrant such action. In the event of an emergency situation when there is no advance warning, i.e. explosion in the building or earthquake, approved laboratory personnel should enter the facility when it has been cleared by the authorities and determine how to deal with the animals that are present. Animal carcasses should be bagged and removed to DLAM freezers according to normal procedure.
 12. Animal Rights Activism
Animal rights activism can manifest itself in many ways: picketing outside an animal facility or research lab, infiltration of animal facility or research staff, sabotage of research activities, etc. If a peaceful demonstration is underway on the campus of UNC-CH (e.g., sidewalks, streets, etc.), avoid confrontation by walking a different route to your destination. If unable to avoid the disturbance remain calm, be courteous, and steer clear of provoking an incident. If a demonstration is going on inside a building, stay in your office or work area and request an escort, if needed, to leave the building.

Evidence of suspicious persons, activity, sabotage, etc. should be reported immediately to Campus Police at 962-6565 or 911. Do not attempt to confront, detain or physically restrain suspicious individuals!

Report any demonstrations, suspicious persons or actions immediately to Campus Police at 962-6565 or 911. When speaking with Police provide them with the nature of the disturbance, location, estimate of number of people involved, possible threat to personal safety and specific facility target. The investigator should also contact the Institutional Animal Care and Use Committee (966-5569), Institutional Official and Vice Chancellor for Research (962-1319) to report the incident. These senior administrative officials shall decide whether the emergency should be reported to OLAW, USDA Animal Care Regional Office, or AAALAC International.

E. APPENDICES

1. APPENDIX A

a. Division of Laboratory Animal Medicine

- i. Emergency and Off-Hours Contacts as of 4/2011
- ii. Weekends and Holidays: The Weekend Veterinary Supervisor, AOD, and OD carry pagers and are on call from 5:00 PM Friday to 7:00 AM Monday. They can be reached via pager (see number below) or at home.
- iii. Weekend/Holiday AOD/OD Pager 216-6434 (on call 24 hours/day)
- iv. Weekend/Holiday Veterinary Pager 216-1235
- v. EHS After Hours Emergency Contacts: Mary Beth Koza (919-883-7027) or Cathy Brennan (919-730-3983)
- vi. Division Phone Numbers:
- vii. Administrative Offices 843-7992
- viii. Veterinary Pager 216-1235

b. University Phone Numbers

- i. Institutional Animal Care and Use Committee 966-5569
- ii. Public Safety 962-6565 or 911
- iii. Vice Chancellor for Research 962-1319
- iv. News Services 962-2091
- v. Medical School Public Relations 966-3366
- vi. Facilities Services Main # 962-3456
- vii. Chilled Water 962-9053
- viii. Co-Generation Plant (Steam) 962-1167
- ix. Electrical Distribution 962-8394
- x. Generator Maintenance 962-1431
- xi. Environment, Health and Safety Office 962-5507
- xii. Heating, Ventilation and Air Conditioning 962-1088
- xiii. Plumbing Shop 962-5086
- xiv. Small Jobs Shop 962-1434/1660

c. Outside Emergency Agencies

- i. Office of Lab Animal Welfare, NIH 301-496-7163
- ii. Association for the Assessment and 301-231-5353
- iii. Accreditation of Laboratory Animal Care (AAALAC)
- iv. US Department of Agriculture – Animal Care 301-734-7833
- v. (National Office)
- vi. US Department of Agriculture – Animal Care 716-5532
- vii. (Regional Office - Raleigh)

- viii. University Storerooms (various supplies) 966-5671
- ix. NC State Vet School –Lab Animal Resources. 513-6280
- x. USDA –Animal Care Regional Office - Raleigh 716-5532

2. APPENDIX B

SATELLITE FACILITY INFORMATIONAL CHECKLIST

(all members of the facility who care for animals should be aware of these responsibilities)

A. Items To Address When Preparing For An Impending Disaster:

1. Hazardous Materials

- a. Make sure all hazardous materials are labeled - if they do get washed away or strewn about your local clean-up crews will know what they are dealing with.
- b. Attach all outside storage cylinders to the building (attach at top and bottom); if attached at only one place, cylinders can be battered against the building and possibly break valves. Remember, nothing is too heavy to worry about!
- c. If small quantities of hazardous materials are stored on open shelves, make sure the shelves have adequate lips to keep materials on the shelves. Make sure cupboards are fitted with positive latches.
- d. Separate all incompatible chemicals!
- e. Keep up-dated inventories of all hazardous materials - store this in a safe place off premises or take it with you upon evacuation.
- f. Shut down the valves on all tanks before leaving.

2. Records

- a. If possible, put vital records on electronic storage to be taken along when leaving, or electronically transfer all important records to a location outside the expected disaster area.
- b. If records are not computer compatible, place them inside plastic bags and then pack in boxes.

3. Other:

- a. Ensure that all satellite facility personnel are aware of all exits and methods of egress. Personnel should also be aware of safe areas within the facility for protection during a hurricane or tornado.
- b. Ensure that an alternate source of suitable animal feed is identified should regularly scheduled delivery be interrupted or supply is damaged.
- c. Empty freezer of any dead carcasses and dispose of properly. Turn freezer on as cold as possible for holding of dead animal bodies immediately after the disaster.
- d. Provide employees' with appropriate identification showing employment or relationship to the satellite facility so that they will be able to return after the disaster.

- e. Unplug all equipment and turn off electricity at breakers before leaving - including air conditioning, water heaters, gas and water (this helps prevent contamination).
- f. Recheck valves on hazardous materials tanks to make sure they are fully closed.
- g. Move important inside equipment to the center of the room as high as possible (upstairs if available) and wrap it with waterproof tarps or plastic. Secure with a rope or tape.
- h. Anchor downstairs furniture.
Contact DLAM veterinary and/or transport services to arrange medical and animal transport procedures prior to the disaster if possible.
- i. Identify the most expensive or irreplaceable items/equipment and create plans to preserve and protect them.
- j. If possible, put vital animal records on electronic storage to be taken along when leaving, or electronically transfer all important records to a location outside the expected disaster area.
- k. Identify what items are most necessary to get the facility operating again. (i.e. records, equipment, etc.)
- l. Movable inventory (i.e. boats, transport vehicles, etc.) - make arrangements now for a safe location where these items can be moved well in advance of the storm. Make sure your vehicles are not moved to a location where they can be immobilized, such as by falling trees, flying debris, or flood waters. tie them down if appropriate.
- m. Provide regular training for all employees in CPR, first aid (for humans and animals) and disaster preparations, particularly in tornado, earthquake, and fire response (use of fire extinguishers and their locations in the facility).
- n. If the lab/satellite has any refrigerated inventory (drugs, medicines, etc.) immediately set all refrigerators to the lowest setting. However be aware that once the power is off refrigerated items generally will stay cold for approximately 48 hours.

B. Item to Address Immediately Following A Disaster

- 1. For all staff while at work:
 - a. Report any emergencies to Campus Police via 911
 - b. Evacuate facility if necessary
 - c. Meet at pre-arranged site outside of facility
 - d. Wait for clearance to return to building
- 2. While at Home:
 - a. Listen to radio or television for announcements- Check Alert Carolina for updates (alertcarolina.unc.edu)
 - b. Call University Adverse Weather Hotline (685-8100) for additional information
 - c. Call your facility to see what is happening, and if you are needed
 - d. Respond to any telephone calls from Campus officials
 - e. Listen to radio or television for announcements

- f. Call University Adverse Weather Hotline (685-8100) for additional information
- g. Call your facility to see what is happening, if anyone has arrived
- h. If no one is at your facility, call your supervisor's cell phone to let him/her know whether or not you will be coming to work
- i. Assess the situation and respond as follows:
 - 1. Evaluate hazards to personnel, impairments to animal support systems, available support staff
 - 2. Determine current animal census and location by room
 - 3. Prioritize needed equipment and supplies
 - 4. Tailor response to meet most urgent needs
 - 5. Determine what additional help may be needed and make the appropriate contacts
 - 6. Choose method of communication and determine frequency for update of reports
 - 7. Delegate tasks to available personnel

F. SATELLITE SPECIFICS TO BE SUBMITTED FOR IACUC FILE

Note to Satellite PIs and LACs: Information requested in this section of the disaster plan must be provided to the IACUC via the OACU Training and Compliance Team. This information should be updated annually and reviewed by all satellite personnel. Compliance with this requirement will be assessed during regularly scheduled satellite inspections. Please contact OACU Training and Compliance team with any questions or concerns at 919-966-5569.

Satellite Facility Specifics (Each satellite must provide the following information to the OACU Training and Compliance Team to be held on file for the IACUC)

1. Investigator Name:
2. Emergency Phone:
3. PI Cell Phone:
4. List of essential satellite personnel (names, phone numbers, email):
5. Location on or off campus: (e.g., 20 miles due north of campus on Hwy 54; or located on south campus at 120 Raleigh Road 1000 feet northwest of Berryhill Hall):
6. Satellite specifics (e.g., includes 3 animal holding rooms. The majority of the animal rooms house spadefoot toads. Room 42 serves as storage space):
7. Provide estimate of daily animal inventory within the satellite (e.g. 50 mice):
8. Square footage (in net square feet):
9. Confirm that you have performed a check for exposed, overloaded, or old electrical wiring that could start a fire and contacted EHS and/or facilities with any concerns (e.g. (yes or no).
10. Does the facility have a number of fire extinguishers, and are they in convenient locations? Are personnel trained to operate them?
11. Please describe the backup power plan for your satellite facility (contact your facilities representative if you are uncertain of building power plan).
12. After ensuring personal safety, animal safety is the top priority. Describe plan for providing continuous animal care during and after a disaster (e.g., we will contact DLAM to see if there is temporary space to house the animals, if we are unable to drive to campus, we will notify DLAM and/or the IACUC for assistance in feeding, we have identified space in Building x where we could temporarily move the fish tanks).

13. Develop a telephone tree of employees to notify them of disasters or pending disasters. (Make provisions for communication in case telephone lines are down. Pre-arrange meeting sites in case communication is impossible. It is possible that those employees who make a commitment to assist before or after a disaster may not be able, for reasons beyond their control. Cross train employees in disaster duties.) Provide the specifics of your telephone tree and the personnel who will provide emergency care for the animals:
14. Provide details of your euthanasia plan for animals you may need to euthanize in the event of an emergency and/or post-disaster.