WORKING WITH WILD RODENTS

1. PURPOSE

1.1. The purpose of this Animal Care and Use Procedure (ACUP) is to outline precautions for anyone handling or exposed to wild rodents. This ACUP is approved by the Cornell Institutional Animal Care and Use Committee (IACUC). Any deviation must be approved by the IACUC prior to its application.

2. SCOPE

2.1. This ACUP is intended for use by all Cornell University personnel (e.g., faculty, support staff, students, and visitors) who will be working with wild rodents.

3. INTRODUCTION

3.1. Wild rodents, or their parasites, can harbor zoonotic pathogens (i.e., those that can infect humans). Risk for infection is dependent on the species of rodent, the geographic location of the rodent, rodent handling practices, disease prevalence, and the immunologic status of the persons working with the rodents. Contact Center for Animal Resources and Education (CARE) at Cornell University by emailing care@cornell.edu for more information or for assistance.

4. MATERIALS AND EQUIPMENT

4.1. Personal protective equipment (PPE) as applicable (e.g., thick rubber or leather gloves, powered air purifying respirator [PAPR], safety glasses).
4.2. Soap and water for hand washing or an alcohol based hand sanitizer.
4.3. Disinfectant (e.g., 1:10 dilution of household bleach, 70% alcohol) and method of application (e.g., sprayer or dunk tank).
4.4. Animal transport isolation container, as applicable.

5. PROCEDURES

5.1. Guidelines for Fieldwork that Involves Wild-caught Rodents:

5.1.1. General Requirements
5.1.1.1. Personnel who perform rodent trapping or handle rodents should familiarize themselves with the regional risks for zoonosis (see section 6 of this document, References). Zoonotic diseases of concern include, but are not limited to the following:

5.1.1.1.1. Hantavirus
5.1.1.1.2. Tularemia (*Francisella tularensis*)
5.1.1.1.3. Plague (*Yersinia pestis*)
5.1.1.1.4. Leptospirosis
5.1.1.1.5. Salmonellosis
5.1.1.1.6. Lymphocytic choriomeningitis virus (LCMV)
5.1.1.1.7. Rabies
5.1.1.1.8. Rat Bite Fever (*Streptobacillus moniliformis*)

5.1.1.2. All staff must be enrolled in Cornell’s Occupational Health Program.

5.1.1.3. Personnel who will use respirators must obtain medical clearance and be enrolled in the respiratory protection program through Cornell’s Environmental Health & Safety (EH&S). The use of respiratory protection is based on a risk assessment.

5.1.2. General Precautions for all Work with Wild Rodents:


5.1.2.2. Wear the appropriate PPE when performing tasks that increase the risk of exposure. For more information, see Appendix 9.1 Specific Zoonosis Information.

5.1.2.3. Practice good personal hygiene:

5.1.2.3.1. Avoid contact of mucous membranes with contaminated hands or materials.

5.1.2.3.2. Wash hands thoroughly with soap and water as soon as feasible. Alcohol-based disinfectants may be used if water is unavailable. If hands are soiled, use “baby wipes” or similar materials to remove dirt before using a sanitizer.

5.1.2.4. Wear disposable protective clothing, coveralls, or an apron when handling captured rodents, potentially contaminated traps, or disturbing nests or burrows. Slowly and carefully turn clothing inside out upon removal. Contain soiled clothing when tasks are completed (e.g., place in a plastic bag).

5.1.2.5. Wear sturdy rubber or leather gloves when handling rodents or cleaning out traps or holding cages.

5.1.2.6. Remove all organic debris from potentially contaminated equipment. Then follow with a suitable disinfectant (e.g., 1:10 dilution of household bleach). Avoid stirring up dry, dusty materials, thereby minimizing the generation of potentially hazardous aerosol particles.
5.1.3. When Using Traps:

5.1.3.1. After rodent use, remove any organic debris with a moist towelette to avoid aerosolization. Next, disinfect traps by submerging them in a suitable disinfectant and allowing them to sit for 15 to 30 minutes. Rinse with water and let dry in the sun. If traps cannot be sanitized in the field, place them in a sealed transport container (e.g., a plastic bag) for transport to an appropriate location for later sanitization.

5.2. Transporting Live Animals Back to Campus:

5.2.1. An approved IACUC protocol is required before transporting live animals.
5.2.2. Avoid contamination of the passenger compartment of vehicles. Refer to ACUP 547 Animal Transport Outside Animal Facilities, and ACUP 532 Cleaning and Sanitizing Department Vehicles Used in the Shipping of Animals for proper transport and vehicle decontamination.
5.2.3. Transfer live animals to micro-isolator cages, or transport animals in their traps in an air-flow restrictive, secondary container (e.g., a loosely tied plastic bag). Ensure that the animal has enough air for transport within the secondary container. Use appropriate respiratory and personal protective equipment when performing these tasks.

6. PERSONNEL SAFETY

6.1. Medical Emergencies: CALL 911.
6.2. Conducting animal work in the field setting presents unique safety hazards. Review applicable details in ACUP 718 Safety Guidelines for Fieldwork.
6.3. When working with animals wear appropriate PPE, observe proper hygiene, and be aware of allergy, zoonosis, and injury risks. Refer to the CARE Occupational Health and Safety webpage for more information.

7. ANIMAL RELATED CONTINGENCIES

7.1. When in the field, ensure that emergency contact information and method of contact are close at hand.
7.2. In animal use facilities, post contact information for emergency assistance in a conspicuous location within the facility.
7.3. In the Ithaca area, emergency veterinary care is available at all times including after working hours and on weekends and holidays through the CARE pager by dialing 1-800-349-2456.
7.4. Outside the Ithaca area, refer to the veterinary care service identified in the IACUC approved protocol.
7.5. Non-emergency veterinary questions, email CARE veterinary staff at care@cornell.edu.

8. REFERENCES

8.1. Wildlife as Source of Zoonotic Infections:
http://wwwn.cdc.gov/eid/article/10/12/pdfs/04-0707.pdf
8.2. Hantavirus:  
http://www.cdc.gov/hantavirus/hps/index.html

8.3. Hantavirus pulmonary syndrome, risk reduction-CDC:  
http://www.cdc.gov/mmwr/preview/mmwrhtml/rr5109a1.htm

8.4. Tularemia:  
http://www.cdc.gov/ncidod/diseases/submenus/sub_tularemia.htm

8.5. Plague:  
http://www.mayoclinic.com/health/plague/DS00493/DSECTION=symptoms

8.6. LCMV:  
http://www.cdc.gov/vhf/lcm/

8.7. Rat Bite Fever:  
http://www.cdc.gov/rat-bite-fever/

8.8. ACUP 532 Cleaning and Sanitizing Department Vehicles Used in the Shipping of Animals:  
http://ras.research.cornell.edu/care/documents_k/ACUPs/ACUP532.pdf

8.9. ACUP 547 Animal Transport Outside Animal Facilities:  
https://ras.research.cornell.edu/care/documents_k/ACUPs/ACUP547.pdf

8.10. ACUP 718 Safety Guidelines for Fieldwork:  
http://ras.research.cornell.edu/care/documents_k/ACUPs/ACUP718.pdf

8.11. Cornell Online Injury Report form:  
https://rmps-prod.hosting.cornell.edu/accinj/

8.12. CARE Occupational Health and Safety webpage:  
http://ras.research.cornell.edu/care/OHS.html

9. APPENDIX

9.1. Specific Zoonosis Information

9.1.1. Hantavirus

9.1.1.1. Work upwind of the trap or nest as much as possible. Define an exclusion zone in which workers without PPE are not permitted. Perform all procedures so as to minimize creation of aerosols and disturbance of dust.

9.1.1.2. Consult Cornell’s Gannett Health Services regarding regional and personal risk for assessment of appropriate PPE. Based on this assessment, the use of respirators may be advised to reduce or eliminate exposure to aerosol particles from rodent excreta and procedures that may generate airborne contaminants.

9.1.1.3. Personnel who develop a fever, respiratory illness, lethargy, or other signs of illness within 45 days of potential exposure should seek medical care immediately. Inform the physician about the potential occupational risk of infection with Hantavirus or other applicable agents listed below.

9.1.2. Tularemia

9.1.2.1. See precautions above in sections 9.1.1.1. and 9.1.1.2.
9.1.2.2. In addition to respiratory transmission, ticks are potential carriers. Euthanasia of animals carrying ticks will result in ticks leaving the carcass.

9.1.2.2.1. Place the dead animal in a clear plastic bag immediately following euthanasia. Ticks will be noted leaving the carcass within 30-60 minutes following euthanasia.

9.1.2.2.2. If ticks are noted, introduce a tick specific insecticide (e.g. VET-KEM Ovitrol®) into the bag. Do not open the bag until the ticks are dead.

9.1.2.3. Personnel who develop any skin ulcers &/or glandular sensitivity/swelling within 14 days of potential exposure should seek prompt medical care and inform the physician about possible exposure to tularemia.

9.1.3. Plague

9.1.3.1. See precautions above in sections 9.1.1.1. and 9.1.1.2.

9.1.3.2. Euthanasia of animals carrying fleas will result in fleas leaving the carcass.

9.1.3.2.1. Place the dead animal in a clear plastic bag immediately following euthanasia. Fleas will be noted leaving the carcass within 30-60 minutes following euthanasia.

9.1.3.2.2. If fleas are noted, introduce a flea specific insecticide (e.g. VET-KEM Ovitrol®) into the bag. Do not open the bag until the fleas are dead.

9.1.3.3. Symptoms from plague can be highly variable. For more details, consult the Mayo Clinic reference cited in section 6, References, of this document. Personnel who develop symptoms within 7 days of potential exposure should seek prompt medical care and inform the physician of possible exposure to plague bacteria.

9.1.4. LCMV

9.1.4.1. See precautions above in sections 9.1.1.1. and 9.1.1.2.

9.1.4.2. Symptoms from lymphocytic choriomeningitis virus (LCMV) can be highly variable. For more details, consult the CDC reference cited in section 6, References, of this document. Personnel who develop symptoms within 21 days of potential exposure should seek prompt medical care and inform the physician of possible exposure to LCMV.

9.1.5. Leptospirosis

9.1.5.1. See precautions above in sections 9.1.1.1. and 9.1.1.2.

9.1.5.2. Symptoms for leptospirosis include high fever, severe headache, chills, muscle aches, and vomiting, and may include jaundice (yellowing of the skin and sclera), red eyes, abdominal pain, diarrhea, or a rash. Personnel
who develop symptoms within 28 days of potential exposure should seek
prompt medical care and inform the physician of possible exposure to
leptospirosis bacteria.

10. HISTORY

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