



**Title:** Animal Occupational Health Policy

**Policy Number:** 035

**Policy Intent:** To promote health and prevent occupational injury and illness among individuals at Texas Tech University (TTU) who may have occupational exposure to animals in research facilities or laboratories operated by TTU.

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### 1. **Scope**

- A. This policy applies to all designated visitors, students, faculty, and staff who work in TTU managed facilities. Enrollment in the occupational health program is available and encouraged for all individuals 1) working within the University facilities which house animals 2) having direct contact with animals; 3) having direct contact with non-sanitized animal cages or enclosures; 4) having direct contact with non-fixed or non-sterilized animal tissues, fluids, and/or wastes; or 5) providing service or support to animal equipment, devices, and/or facilities. Each identified individual is required to complete an acknowledgment of the program and is strongly encouraged to enroll. Once enrolled, participation in the program is strongly encouraged for all individuals having animal contact. However, if an individual declines to further participate, a signed declination form is required. It is recommended the individual make this decision after consulting with their personal physician.

### 2. **Definitions**

- A. **Association for the Assessment and Accreditation of Laboratory Animal Care International (AAALAC)** - the external body with assessment capabilities of animal use facilities and programs.
- B. **Allergens** - any substance that is recognized by the immune system and causes an allergic reaction. Specific animal contact with hair, dander, scales, fur, feces, urine, saliva, etc. can cause an allergic reaction. Cumulative exposures may result in sensitization; whereby, an individual may develop symptoms not previously experienced with normal handling or contact with animals.



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- C. **Allergy** – exaggerated reaction by the body’s immune system to foreign bodies, or allergens. Common allergic reactions may result from animal proteins such as; animal urine, saliva, hair, dander, or bedding material. These allergens may also have a cumulative effect on an individual. According to National Institute for Occupational Safety and Health (NIOSH), it is estimated that approximately 33% of animal handlers exhibit some allergic symptoms.
- D. **Enrollment** (Occupational Health & Safety Program and Medical Surveillance) - is defined as having a completed medical questionnaire with a signature on file. Once enrolled, an individual is strongly encouraged to participate in medical surveillance, medical exams, vaccinations, and screening is recommended for the specific animal species. All elements of the program are free of charge to the participant. Enrollment in the program is available at any time to those individuals identified in “Section II. Scope” who signed acknowledgement to decline enrollment.
- E. **Animal Care Services (ACS)** – is responsible for the health and well-being of laboratory animals used for the institution's biomedical research programs, including training and professional veterinary, surgical, and animal care services. ACS facilities accommodate a variety of species.
- F. **Institutional Animal Care and Use Committee (IACUC)** - serves as the review body for animals used by faculty, staff, and students. Policy requires that the use of all live vertebrate animals for research, instruction, demonstration, production, or maintenance purposes by faculty, whether the animals are located in facilities at TTU or elsewhere, be approved by the IACUC in advance of their usage.
- G. **Personal Protective Equipment (PPE)** – Safety equipment such as gloves, gowns, face masks, or scrubs that are required to be worn when coming into contact with animals, hazardous chemicals, toxic materials, etc.
- H. **Sensitization** – The condition when exposed to an allergen or chemical, even in small amounts, that produce adverse effects or symptoms not previously experienced when exposed to the same chemical dose or allergen.
- I. **Suppressed Immune System** – The medical conditions or disorders that would increase an individual’s susceptibility to disease or illness. Healthy immune systems are the best defense against allergens, viruses, bacteria, and other vectors commonly encountered while working with animals.
- J. **Zoonoses** - All diseases and infections transmitted between animals and humans including bacteria, viruses, parasites, or other vectors, and causing disease under natural conditions. Examples include Q-fever, rabies, enteric bacteria, toxoplasmosis, tuberculosis, and salmonella.

### 3. Responsibilities

- A. Employees are responsible for:
  - 1) Completing federally mandated animal care and use training, principal investigator training, or ACS training as required.
  - 2) Enrolling in the Occupational Health Program before working with animals or declining such enrollment.
  - 3) Using all personal protective equipment, clothing, or other safety devices where required.
  - 4) Being familiar with all standard operating procedures for safety, personal hygiene, and emergencies.
  - 5) Informing their supervisor immediately of any animal bites, scratches,



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- illnesses, or injuries received from working with animals.
  - 6) Completing, and periodically updating, the medical questionnaire or declination form.
  - 7) Maintaining good hygiene practices, wearing PPE, and following all safe operating procedures at all times.
  - 8) Notifying their supervisor immediately in the event of a possible biological, radiological, chemical, or physical agent exposure.
  - 9) Scheduling appointments with EHS or Occupational Health Provider.
- B. The supervisor or PI is responsible for:
- 1) Ensuring all employees enroll in the Occupational Health Program before working with animals.
  - 2) Confirming all employees received proper training (ACS training, Basic Laboratory and Biological Safety Training, etc. as appropriate) for their work activities with animals.
  - 3) Ensuring all employees are proficient and understand the standard operating procedures for each protocol.
  - 4) Communicating new procedures to employees when process, facility, or equipment changes occur.
  - 5) Completing and submitting a Supervisor's First Report of Injury form in the event of an injury to an employee.
  - 6) Provide students enrolled in courses involving animals, or independent study courses that include live, vertebrate animals with the following information:
    - a. The availability of and the option to request medical evaluations and treatment
    - b. Hand-outs or the link to: General Information:
    - c. Potential Hazards (zoonoses, allergies, and injuries) with links to the Zoonosis Information by Species
- C. Animal Care Services is responsible for:
- 1) All animal and human health conditions in managed ACS-managed facilities.
  - 2) Working with Environmental Health and Safety in the implementation and development of the Occupational Health Policy as it relates to animal contact.
  - 3) Ensuring all employees receive appropriate PPE and take necessary precautions against hazards in ACS-managed facilities.
  - 4) Investigate all animal bites or injuries reported by employees.
- D. IACUC is responsible for:
- 1) Maintaining and updating this policy
  - 2) Assuring oversight of the Occupational Health Policy as an integral component of TTU's Animal Care Program for the humane care and use of animals, using the *Guide for the Care and Use of Laboratory Animals*, the *Guide for the Care and Use of Agricultural Animals in Research and Teaching* and the *Occupational Health and Safety in the Care and Use of Research Animals* as a basis for evaluation.
  - 3) Identification of personnel that requires enrollment into the Occupational Health Program through the submission and screening of protocols submitted to the committee.
- E. Environmental Health and Safety (EHS) is responsible for:
- 1) Performing health risk assessments based on job classification.
  - 2) Maintain licensed services of Occupational Health Provider (OHP) for



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program.

- 3) Reviewing OHP determination on employee medical fitness for work with animals.
- 4) The identification of all employees with signs or symptoms, or a predisposition to illness or disease, which would require engineering or administrative controls to reduce exposure. These employees shall not be returned to their work area without further consultation between the physician, individual, and their supervisor.
- 5) Performing PPE assessments, safety training, and periodic monitoring where animal contact occurs.
- 6) The trending and analysis of illness, injuries, and exposures encountered during research activities, daily work routine, and occupational activities.
- 7) Assisting in identifying all employees that require enrollment into the Occupational Health Program.

### F. Occupational Health Provider

- 1) Review health information with physical examination and diagnostic studies as required among enrolled animal users for their fitness for duty while working with animals, based on inherent risk, exposure, and medical history.
- 2) Maintaining all employee health records in accordance with applicable standards

## 4. Procedures

- A. After completing animal use training, students, faculty, and staff are required to sign an acknowledgment to either enroll or decline enrollment in the occupational health program. Those individuals who choose to enroll will complete a baseline medical questionnaire. After completing this form, the questionnaire must be forwarded to EHS.
- B. This form will then be reviewed and based on job classification, potential risk, and/or medical history; an appointment will be scheduled with the occupational health provider when necessary. Participating individuals are required to have a baseline questionnaire on file before working with animals. EHS may require questionnaires to be revised periodically based on current trending or a report on increased medical symptoms. *If there are changes* in an individual's medical history; especially, increased allergic reactions, a compromised immune system, pregnancy, or the intent to become pregnant, individuals should notify EHS immediately and update their medical questionnaire.
- C. The need for a baseline and/or the annual medical exam will be based on hazard type, type of contact, frequency of exposure, job classification, assigned work area, or changes in medical history.
- D. The occupational health provider will review any exam results, medical testing, and screening for adverse effects or deleterious symptoms. If there are no complications, the medical practitioner will complete a fit-for-duty form and the employee will be authorized to continue work with hazardous substances, animals, and/or in designated facilities.
- E. Should symptoms, or the indication of complications, become severe, the individual may be temporarily reassigned or removed from exposure until engineering or administrative controls can be designed and implemented.
- F. Using the matrix below, individuals can determine the types of medical exams, screenings, and vaccines; their frequency; the types of health hazards; and the medical



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surveillance criteria required.

G. Exams, screenings, and vaccines for ACS personnel are mandatory. All other personnel should reference the Animal Category below to determine the exams, screenings, and vaccines appropriate for their type of animal contact.

Animal Category	Exams, Screenings, & Vaccines	Frequency	Health Hazard	Medical Surveillance Criteria
<b>ACS</b> Cats; Dogs; Ferrets; Fish; Frogs; Lab Rodents (mice & rats); Pigs; Rabbits	Medical history review and physical examination (if medical history indicates a condition that may impair fitness for duty)	Initial & Annually	Zoonoses – see appendix A Allergens Bites/ Scratches	Baseline Required PRIOR to work assignment or entering regulated area; Annually & as required by Physician; Or, changes in medical history - Individual may experience an increased susceptibility to disease or illness from a Suppressed Immune System or other related health factors
	Animal allergy baseline & consultation (as required)	Initial & Annually	Allergens from hair, dander, urine, bedding, etc.	Baseline Required PRIOR to work assignment or entering regulated area  Changes in medical history; or health conditions
	Tetanus/Diphtheria Vaccine	Initial Re-initiated every 10 years		Required PRIOR to work assignment or entering regulated area, OR Injury
	Rabies Vaccine	Available upon request or as needed based on the risk assessment		
<b>Non-ACS</b> Birds; cattle;; dogs cats; goats; horses; sheep; swine; frogs, fish; reptiles; wildlife	Medical history review and physical examination (if medical history indicates a condition that may impair fitness for duty)	Initial & Annually	Zoonoses – see appendix A Allergens Bites/ Scratches	Baseline Required PRIOR to work assignment or entering regulated area; Annually & as required by Physician; Or, changes in medical history - Individual may experience an increased susceptibility to disease or illness from a Suppressed Immune System or other related health factors
	Rabies Vaccine	Available upon request or as needed based on the risk assessment		
<b>Support Personnel –Operations, EHS, contract services Police – assigned duties that require individual to enter an animal research area</b>	Operations- annual online training Escorted into facilities	Initial and then annually	Indirect exposure to animal allergens	N/A



## 5. Training

- A. Animal use and care training is required for all individuals having contact with animals as described under Section II. PI's, Researchers, Facilities, and other support groups can fulfill this requirement by attending animal care and use training classes and any applicable health and safety training. PIs and Supervisors are responsible for their employees or students having received animal user training prior to working with animals. For more information, contact the ACS Office.

## 6. Potential Health Hazards

### A. Animal contact

- 1) Animal contact from any species that breaks the handler's skin, involves a splash to the mucous membranes or occurs from a percutaneous inoculation used on or in animal care should be documented through the First Report of Injury form. Examples of animal contact include but are not limited to bites, scratches or allergic reactions. Animals infected with biohazards might pose additional hazards and should be noted on First Report of Injury Form.

### B. Physical Hazards

- 1) **Heavy Lifts** – Physically moving items such as cages, cage racks, feed and bedding can cause injury to backs, upper extremities such as shoulders and arms, and lower extremities such as legs and knees. Sprains and strains are the most common injury for animal care workers. Items such as rusty casters can cause burdens on the body. Notify a supervisor to replace such items. The use of a manual lift or forklift should be used whenever possible. Employing safe lifting practices is also advisable. Contact Environmental Health & Safety (EHS) for evaluation and training of heavy lifts.
- 2) **Ergonomics** – The practice of making the job fit the employee can be implemented in many daily tasks performed by animal workers. The use of walk-on weight scales eliminates the need to physically pick up the animals for weighing. The purchase of a motorized floor cleaner reduces the time needed to perform a task and back strains injuries. Notify EHS for evaluation and consultation of a process which is adding undue burden to the worker.
- 3) **Noise** – Some animals such as dogs, and pigs as well as machine processes such as cage washing can create excessive noise. Hearing loss from loud environments can occur gradually over periods of years without much notice by the individual. Notify EHS to conduct noise monitoring of work environments to see if they are outside the recommended guidelines.
- 4) **Slip, Trip and Falls** – Many processes involved with animal care will subject the worker to slippery surfaces such as mopping floors, maneuvering large items in small spaces, creating a trip hazard and situations where falls could occur. Slips, trips and falls are the second leading cause of injuries. To avoid these situations always use caution, pre-plan the procedure to eliminate any last minute hurrying and notify the supervisor if a hazardous situation develops. Wearing slip resistant footwear is recommended.

### C. Allergens

- 1) Allergens are any substances that are recognized by the immune system and causes an allergic reaction. Specific animal contact with their hair, dander,



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scales, fur, feces, urine, saliva, etc. can cause an allergic reaction. Cumulative exposures may result in sensitization; whereby, an individual may develop symptoms not previously experienced with normal handling or contact with animals. Preventive measures include wearing gloves and a dedicated laboratory coat when handling animals or their tissues or fluids.

### D. Biological Hazards

- 1) Biological substances such as viruses, bacteria, fungi, rDNA and human cell lines are used in research animals. These substances pose hazards alone and can sometimes be amplified or lessened in an animal system. Specific training on animal handling practices and bedding and carcass waste disposal procedures will be unique to each experiment. Hazard postings on the outer doors to the holding areas specify the hazards being used on the animals and the necessary precautions (i.e. PPE) needed to handle these animals. These hazard postings have been created and reviewed by the ACS staff and Environmental Health and Safety based on recommendations from the IACUC and the Institutional Biosafety Committee (IBC) protocol approvals. Notify the supervisor if any explanation is needed before work begins.

### E. Chemical Hazards

- 1) Chemical hazards such as pharmaceuticals, cleaning agents, detergents and research substances are used in research animals and in the course of animal care and husbandry. Care should be taken when using detergents, acidic de-scaling solutions and alcohols as they can cause burns or be toxic by inhalation, ingestion or dermal contact. Follow SOPs for storage, handling and mixing of chemicals. Pharmaceuticals such as anesthetics, antibiotics, analgesics and research drugs can be toxic at very small concentrations. The use of controlled substances, carcinogens, reproductive hazards, and toxins are reviewed by the IACUC and IBC.

### F. Radiological Hazards

- 1) **Non-Ionizing Radiation** – Ultraviolet lights such as those used in biological safety cabinets or overhead lighting can cause burns to the eyes and skin. Please make sure that all ultraviolet sources are turned off before working in the area.
- 2) **Ionizing Radiation** - Radioisotope tracers, X-ray machines and lasers can cause burns and other forms of damage. Specialized training is required to use this agent.
- 3) The uses of all radiological hazards are reviewed by the IACUC and Radiation and Laser Safety Committee.

### G. Waste

- 1) **Bedding** – All bedding should be collected under a laminar flow hood or biological safety cabinet, dumped in cage wash, or otherwise disposed of according to the specific requirements for the study if a hazardous agent has been administered to the animals or is inherent to the species. Some experiments require chemical disinfection or autoclaving of the bedding prior to disposal. Notify the supervisor if any explanation is needed before work begins.
- 2) **Carcass** – Animal carcasses should be disposed of in the appropriate cold storage facility at the following locations: BIO, ESB I, ESB II and HSB animal



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facilities. Carcasses will be stored and made available for three days for research purposes. After that, the remains will be disposed of. Disposal of carcasses subject to biological, chemical or radiological hazards should be consistent with the approved protocol from the respective committees.

- 3) **Sharps** – Sharps should be placed in a sharps container filled no more than  $\frac{3}{4}$  full. Contact EHS for pick up.
- 4) **PPE** – Personal Protective Equipment used in animal-related hazardous work should be disposed of in a biohazard container for disposal or autoclaving when prescribed by the protocol approvals.

### 7. Personal Hygiene

- A. Clothing should be supplied and laundered by the institution and changed as frequently as needed to maintain personal hygiene. The use of disposable gloves, masks, head covers, coats, coveralls, etc. are needed as indicated by signage in each area. Outer garments worn inside the animal rooms should not be worn outside of the animal facility. Personnel should wash hands frequently. No eating, drinking, use of tobacco products or applying cosmetics is permitted in animal rooms.

### 8. Pre-existing Conditions (Pregnancy, immunocompromised, illness)

- A. Animal care handlers who are pregnant or trying to become pregnant, immunocompromised by illness, or taking certain medications could be more susceptible to infection from hazards and zoonotic disease than healthy individuals. Discuss your working conditions and hazards with your supervisor, EHS, or your physician.

### 9. References

- *Biosafety in Microbiological and Biomedical Laboratories (BMBL)*. 6<sup>th</sup> ed. 2020. CDC/NIH
- *Occupational Health and Safety in the Care and Use of Research Animals*, 1997. National Research Council, National Academy of Sciences
- *Guide for the Care and Use of Laboratory Animals*, National Research Council. 8<sup>th</sup> ed. 2011
- *Guide for the Care and Use of Agricultural Animals in Research and Teaching*, American Dairy Science Association®, the American Society of Animal Science, and the Poultry Science Association. 4<sup>th</sup> ed. 2020
- *Public Health Service Policy on the Humane Care and Use of Laboratory Animals*, National Institutes of Health, 2015
- NIOSH Preventing Asthma and Allergies Alert
  - [Preventing Asthma in Animal Handlers \(1998\)](#)
- NIOSH Latex Allergy Alert
  - [Preventing Allergic Reactions to Natural Rubber Latex in the Workplace \(2021\)](#)
- [Medical Questionnaire](#)
- Supervisors First Report of Injury
- OHS Risk Assessment Summary Forms