

INTRODUCTION TO THE ANIMAL HAZARDS PROGRAM

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Introduction

Many different kinds of physical, environmental, or biological hazards are associated with the use of animals in teaching or research (Table 1). The specific hazards will vary according to the species involved and nature of the research activity. Requirements for an occupational health program for personnel working with laboratory animals are found in *Biosafety in Microbiological and Biomedical Laboratories* published by the Centers for Disease Control and the National Institutes for Health; Code for Federal Regulations, Title 10, Part 20 and Title 29, Part 1910; the *Public Health Service Policy on Humane Care and Use of Laboratory Animals* that codifies the *Guide for the Care and Use of Laboratory Animals* published by the National Research Council; and, *Occupational Health and Safety in the Care and Use of Research Animals* published by the National Academy of Sciences.

A description of the occupational health program must be included in the Assurance of Compliance that is required by the National Institutes of Health. Triennial inspections are conducted by the Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC), International to assure compliance with all applicable occupational health and safety standards.

Table 1. Examples of Selected Hazards in Animal Facilities		
Potential Risk of	Due to	Examples
Back Injury	Lifting Pushing Twisting Falling	Feed bags Cage racks Restraining large animals Slip on wet floor
Hearing Loss	Noise	Cage wash areas, dog runs
Electrical Shock	Faulty electrical wiring	Water on floor, ungrounded equipment
Puncture Wound	Bite or scratch	Unrestrained animal
Needle stick	Injecting or bleeding	Improper sharps disposal
Exposure	Allergens	Animal hair, dander, serum, animal proteins
	Biohazards	Human pathogens, zoonotic agents, latent or introduced
	Chemicals	Hazardous materials on test, cleaning or decontaminating materials, acids for cage washers
	Radiation	Research isotopes. X-ray equipment

One recent study performed at the University of Michigan found that 50% of their new animal care technicians suffered from repetitive strain injuries, resulting in work restrictions, job reassignments, or transfers to jobs the employees could tolerate. The loss of productivity and cost of replacing only 3 technicians cost the institution \$191,055. Lifestyle effects included feelings of shame and depression because of their increased dependence on others; fear of uncertain employment future; and, whether the injury would jeopardize future employment opportunities.

Impact of Animal Related Injuries

- Illness
- Delay or terminate project
- Monetary loss
- Adverse effect on morale of personnel
- Unfavorable publicity
- Medico-legal implications
- Man-hours lost

Responsibilities

Management. Management's responsibility is well-defined under the Occupational Safety and Health Act of 1970 (OSH Act), the General Duty Clause of which states: "Each employer shall furnish to each of his employees employment and a place of employment which are free from recognized hazards that are causing or are likely to cause death or serious harm to his employees." In other words, management must ensure that employees have a safe place in which to work safely. The Institutional Animal Care and Use Committee (**IACUC**) has overall responsibility for the Animal Hazards Program, which is administered by the Occupational Health Service (OHS).

Supervisors. Supervisors, unlike management, are on the front lines along with employees, and have legal responsibility for activities within their work sites. They must constantly encourage safety awareness while assessing the need for training, which they either provide themselves, or seek from an outside source. Employees must be able to clearly identify and understand these various hazards; supervisors and principal investigators (PI) play an important role in this regard. To this end, the University of Arizona's Animal Hazard Program requires a self-assessment and inspection at least annually.

Occupational Safety Designee. Appointed by the Principal Investigator. (See Figure 1).

Employees. Employees, of course, must incorporate the provided information into their daily work habits and assure, as stated under the OSH Act, that they will follow the safety guidelines and practices as put forth by their employer. Conscientious personal hygiene (wearing of lab coats, which are laundered frequently, gloves, and frequent washing of hands) remains the basic model of disease prevention.

Occupational Health Service (<http://www.health.arizona.edu>). Part of the approach to a comprehensive occupational health and safety program includes medical surveillance. An understanding of occupational hazards and work practices facilitates the development of reasonable risk-minimization strategies. Medical and research staff must maintain communication to assure the success of the overall program. Through medical surveillance, the OHS can prepare itself for appropriate treatment in the event of accidental exposure. A regular review of accident and injury data will also suggest issues that need attention or additional training. For legal purposes, it is necessary to document animal bites and scratches, needle sticks and other sharps injuries, as well as overt exposures to chemical-, radioactive-, or biohazards. Researchers and other supervisory staff should encourage reports of such exposures to occupational medical staff. In addition to documenting employee health records, investigative follow-up to such accidents is vital for developing strategies to reduce accidents.

Who's Covered?

Personnel included are those individuals involved in the direct care of animals and their living quarters and those individuals who have direct contact with animals (live or dead), their viable tissues, body fluids, or wastes. The assessment of risk will be determined by frequency of contact, intensity of exposure, hazards associated with the animals being handled, hazardous properties of agents used in research, the susceptibility of individual employees, the hazard-control measures available, and the occupational history of individual employees.

This includes all -

University Animal Care (UAC) staff
Investigators and their technical staff
Instructors and students involved with animal related work

Some personnel in:
Facilities management
Security
Custodial services

As well as some students, consultants, volunteers, and visitors.

A post-job offer health evaluation is a condition of employment for individuals with known animal research or teaching involvement.

How the Program Works

Participants are organized into categories that reflect the specific surveillance needs of the employees based on real or potential occupational exposure to specific species of animals. The following categories are defined:

<u>Category</u>	<u>Type of Contact</u>
1	Domesticated small animals including rodents and rabbits
2	Domesticated large animals including dogs, cats, and livestock
3	Non-human primates
4	Wild-caught rodents and small mammals
5	Big game wildlife including deer, elk, mountain lions, bears
6	Non-mammalian animals, including reptiles, amphibians, birds (domesticated and wild)
7	Aquatic life forms (non-amphibian)
8	Support staff, maintenance staff, security staff (no direct animal contact expected in the routine performance of duty; risk through environmental exposure)
9	Has a "Decline to Participate" form on file with the Occupational Health Service (OHS).
10	No contact expected. No formal occupational program required.

Identification of Participants:

- A. Enrollment in the Animal Hazards Program must occur prior to the employee's or participant's exposure to animals, their viable tissues, body fluids, or wastes.
- B. All participating faculty, staff, employees, students, and volunteers will be queried via the

University of Arizona's *Risk Assessment Questionnaire* regarding anticipated exposure to animals. The *Risk Assessment Questionnaire* may be obtained from the Occupational Health Service (621-1929), are available at the "Introduction to Animal Hazards Program" training class, or may be downloaded from the Institutional Animal Care and Use Committee's web page (<http://www.ahsc.arizona.edu/uac>). Those falling into Categories 1 through 8 will be referred to the OHS for follow-up.

Every lab must appoint one individual that serves as the Occupational Safety Designee (OSD). This individual, along with the Principal Investigator, is responsible for occupational safety concerns for their research group (see Figure 1). Protocol forms provide a space for PIs to indicate their OSD. Any protocols submitted without a specified Occupational Safety Designee will not be routed for IACUC review.

Individuals who have not registered with the Animal Hazards Program are subject to having facilities access denied and protocol authorization/participation withdrawn.

Duty/Site Surveillance of Work Related Injuries

Injury and Infection Log: Every animal holding facility and research laboratory will maintain an Injury and Infection Log to include the following categories:

- Date of injury or infection
- Time of injury or infection
- Type of injury or infection
- Date of employee referral to OHS
- Time of employee referral to OHS

Reporting Work Related Injuries: Every person working with animals should be aware of the potential danger from animal bites. Although an animal scratch or bite might not seem serious, its occurrence should be reported to one's supervisor so that proper measures may be taken. In addition, employees shall promptly report **all** suspected work related injuries and illnesses:

Weekdays between 8 a.m. and 4:30 p.m.: Report to the Occupational Health Service (621-1929) at the Campus Health Center.

After work hours: Report to any Urgent Care facility or Emergency Room and inform them that your Workers' Compensation Carrier is the Arizona Department of Administration, Risk Management Section.

When an injury or illness has occurred, a *Supervisor's Report of Employee Injury* form

(http://w3fp.arizona.edu/riskmgmt/insurance_forms_on.htm) must be filed with the UA Department of Risk Management and Safety within 7 calendar days.

Many of the agents responsible for viral, bacterial, and parasitic infections in laboratory animals are capable of infecting humans. Some of these agents are covered in this surveillance program, many are not. Employees are counseled to report any gastrointestinal, respiratory, or dermal illnesses that may resemble the signs or symptoms of infections in the animals for which they are caring.

Surveillance Recall: Employees or participants who are enrolled in the Animal Hazards Program may be periodically recalled for medical follow-up depending on the specific type of animal exposure.

1. Surveillance Recall Schedules:

All participants are advised to return for Tetanus re-vaccination every 10 years.

Participants working with Non-Human Primates (Category 3) are routinely recalled every six months (birth month and birth month plus 6 months) for tuberculin skin testing. Documented tuberculin reactors are recalled annually and a chest x-ray is obtained as clinically indicated. Annual (birth month) serologic monitoring (if necessary), *Risk Assessment Questionnaire*, and records review will also be performed.

Notices for surveillance recall are sent to the employee's OSD and appointments scheduled with the OHS.

OSD's are notified of employee or individual participation in the surveillance program via memo from the OHS. OSD's are informed of an employee's non-participation with the program by memo.

Personal Hygiene: There are a number of personal hygiene issues that apply to all workers who are exposed to animals.

There should be no eating, drinking, smoking, or applying of cosmetics in areas where animals are housed or used.

- A. Laboratory coats should be worn over street clothes when working with animals. This will minimize the contamination of street clothing. Laboratory clothes should be left in the lab and should not be worn when eating or in public eating areas. Laboratory clothing should be laundered routinely.
- B. Careful hand washing should be done after handling of animals and prior to leaving the laboratory.
- C. All work surfaces should be decontaminated daily and after any spill of animal related material.

Certain infections are transmitted from animals to humans primarily by the animals' feces or urine contaminating one's hands that may contaminate objects put into the mouth. Examples of organisms utilizing this mode of transmission are *Salmonella* spp., *Shigella* spp., and *Entamoeba* spp. Every precaution should be taken to avoid this mode of transmission by alertness and careful personal hygiene. Additional health problems are encountered when these organisms are carried home and children are exposed.

Education and Training

OSD Requirements: The OSD for each research group is responsible for assuring that all members of the research group are adequately informed of, and receive training in Occupational Safety issues. This Occupational Safety Designee (OSD) will need to complete all species specific classes on zoonotic diseases that are germane to the specific areas of research undertaken by the research group. The PI and OSD may choose how best to train members of the individual research group in these issues, which may include their also completing the zoonotic disease classes.

All persons are required to complete the "Introduction to the Animal Hazards Program" class within four months after their initial hire date. **If a Principal Investigator has not received proper certification, their protocols will not be reviewed for approval.** Technicians/Participants who are not properly certified will not be authorized to participate on protocols.

Training will be under the auspices of the IACUC. The Department of University Animal Care (UAC) and the OHS will provide technical instruction and assistance.

Immunizations: All participants (depending on their category) will have the following vaccinations documented:

Tetanus Prophylaxis: The Public Health Service Advisory Committee on Immunization Practices (ACIP) recommends immunization against tetanus every 10 years for everyone. It is also recommended if a particularly tetanus-prone injury occurs in an employee where more than five years has elapsed since the last immunization. Every

employee should have up to date tetanus immunizations.
Rabies: Immunizations according to ACIP. Booster doses as determined by antibody titer.

Assessment of Physical Conditioning:

Lifting: prospective employees (e.g., animal care providers, cage wash personnel) in animal facilities will be required to take and pass a physical movement exam during their pre-placement screening exam unless a reasonable accommodation can be made. This exam will consist of range of motion analysis and repeated lifting of 10 pounds above shoulder height and 50 pounds above belt height. The Occupational Health Service and Risk Management Services will include proper back and lifting training for new employees and on an on-going basis for existing employees.

Hearing: auditory testing will be conducted on employees at the discretion of the OHS staff. Personnel working in high noise areas (cage washer, dog and pig care providers) will be required to have a base line and an annual auditory examination to assist with hearing conservation. Protective devices will be provided and worn.

Enforcement and Compliance

To achieve the University's goal to provide and maintain the highest standard of health, safety, and welfare for its staff, systems must be in place to identify hazards in the workplace in order to allocate appropriate resources and implement effective control strategies. The University recognizes that regular health and safety inspections are effective mechanisms for identifying workplace hazards. The Animal Hazard Program requires each animal use unit to:

- Inspect the work area for hazards on a frequent and systematic basis, and document and evaluate the findings

- Analyze and monitor work practices, procedures and systems of work to identify hazards which may otherwise be overlooked; and

- Develop and implement a priority action plan for hazard control.

These inspection reports will provide a monitoring system for managers of units.

The Occupational Health Service is available for advice and assistance, but is not charged with the responsibility to accompany inspection parties. The following guidelines have been developed to assist Units in the inspection process and may be adapted to suit individual areas.

Risk Management and Safety Representatives may be invited to participate in the inspection, consulted when determining priority for action, and when implementing control strategies. Interested employees should also be invited to participate.

Essentially, regular health and safety inspections allow one to:

- Identify hazardous conditions and apply hazard control measures

- Monitor behavior trends

- Monitor and evaluate health and safety standards

- Improve health and safety standards

- Measure performance

- Check new facilities, equipment, processes, etc

- Collect data for meetings, support of initiatives, etc

- Maintain interest in health and safety

- Display supervisory commitment to health and safety

Inspection Procedures

Who conducts the inspection?

The inspection team should be comprised of at least two individuals. The

OSD and one of the following:

The Principal Investigator

Manager of the unit

A management representative, e.g., the relevant supervisor
A workplace employee representative

The Chair of the department or Manager of the unit should be immediately notified of any and all discrepancies noted during the inspection, and must sign the *University of Arizona Animal Hazards Program Identified Hazard Summary Sheet* prior to its being filed with the IACUC office.

2. When to inspect?
 - a. A joint inspection of the type described above should be done at least on an annual basis, and is recommended on a quarterly basis depending on the area. However, the OSD or supervisor should monitor the workplace on a daily basis (i.e., housekeeping, observation of behavior trends) and more formally on a weekly - biweekly routine, checking such things as environmental conditions, etc. Any identified hazardous situations should be closely monitored at all times, particularly while awaiting the implementation of effective control measures.
 - b. Vary the time of inspection to assure it is capturing the workplace as it really is (i.e., unprepared).

How to inspect?

The Inspection Process:

Using the *University of Arizona's Health and Safety Inspection Report Form* (<http://www.ahsc.arizona.edu/uac>), the inspection team should inspect all workplaces within the unit including office, storage, and maintenance areas. Previous inspection reports should be viewed prior to inspection.

The inspection party should use the inspection checklist to consider:

- (a) Workplace Design (i.e., the physical workplace)
 - Ensure meets relevant legislative requirements
 - Ensure correct storage facilities
 - Assure ease of manual handling (a floor plan is helpful in preparing and recording findings)
 - Assure proper operation of chemical fume hoods and biological safety cabinets
- (b) *Work Practices*
 - Policy and procedures
 - Safe work procedures (written and accessible)
 - Information available to workers relating to hazards
 - Accident or injury data and reporting mechanisms
 - Maintenance reports
 - i. Training provided
 - ii. Personal hygiene
 - iii. Good housekeeping
 - iv. Proper waste disposal
 - v. Proper handling, transportation, and restraint of animals
 - vi. Provision and use of personal protective equipment
- (c) *Environment*
 - E.g. noise, lighting, ventilation, thermal conditions
 - Assure meets Standards and Codes of, etc.

(d) *Behavior*

Determine the effectiveness of systems in place

Identify the need for training and education programs

The inspection party should ask themselves:

What is wrong?

Why is it wrong?

What if...such and such happened?

Recording Observations:

Observations made during the inspection must be recorded on the *University of Arizona Animal Hazards Program Health and Safety Inspection Checklist and Report Form*.

This ensures that issues raised are not forgotten and provides a valuable reference source for spot inspection and periodic checks by supervisors.

The *Identified Hazard Summary Sheet* with required signatures must be filed with the IACUC office and a copy kept at the work site to be available to IACUC, granting agency, and AAALAC site visitors.

New investigators, who have not commenced with animal work, will be allowed to waive the requirement for one year.

Review: the inspection team should immediately analyze the report and develop an action plan according to agreed priorities.

Follow Up

The information obtained from regular inspections should be reviewed carefully, not only to identify where immediate corrective action is needed, but also to identify trends as part of overall monitoring of the inspection program's effectiveness.

Analysis of inspection records over a period of time, for example:

Highlights the need for training in certain areas

Provides insight as to why accidents are occurring in particular areas

Establishes priorities for corrective action

Assists in improving or establishing healthy safe work practices

Indicates areas, equipment, etc., which may require more detailed analysis

Noncompliance

Persons will be deemed noncompliant if they refuse to meet with the Occupational Health Service. It should be noted that individuals who have made a good-faith effort to keep pre-assigned appointments, or have had to reschedule would not be deemed "non-compliant."

In the event that an individual refuses to meet with the Occupational Health Service, the following actions will be taken:

A letter from Occupational Health will be forwarded to the individual and the Institutional Animal Care and Use Committee (IACUC) Office informing them of the person's noncompliant status.

A grace period of two weeks to set up an appointment will be granted. If, after two weeks, the IACUC Office has not received notification of compliance, the following will occur:

a. Immediate Action:

PI: A hold will be imposed on all their protocols for animal ordering.

PIs will be allowed an additional two-week period to become compliant, or provide acceptable written justification for why they need longer, before their facilities access will be deactivated in

order that animals already on study will not be wasted.

Individual: Facility key access will be deactivated and the supervisory PI will be notified.

Follow-Up Action: In the event that an individual is found in the facility after having their access withdrawn for being non-compliant, the following will occur:

PI: The PI will be required to attend a convened IACUC meeting to discuss this issue. If a satisfactory conclusion is not arrived at, all the PI's protocols may be subject to suspension.

Individual: first Violation: The supervisory PI's protocols will be put on hold for animal ordering. Second Violation: The supervisory PI will be required to attend a convened IACUC meeting to discuss this issue. If a satisfactory conclusion is not arrived at (i.e., the individual either complies with the requirements or is removed from participating on protocols), all the PI's protocols may be subject to suspension. Protocol suspension requires the automatic notification of federal granting agencies.

Principal Investigators who do not file the *University of Arizona Animal Hazards Program Identified Hazard Summary Sheet* as required:

Will not have subsequent protocol submissions reviewed until such time as the report has been filed.

Will have a hold imposed on all their protocols for animal ordering.

PIs will be allowed an additional two week period to become compliant, or provide acceptable written justification for why they need longer, before all facilities access for their research group (as identified in their protocols as participating personnel) will be deactivated in order that animals already on study will not be wasted.

Follow-Up Action: In the event that an individual is found in the facility after having their access withdrawn for being non-compliant, the PI will be required to attend a convened IACUC meeting to discuss this issue. If a satisfactory conclusion is not arrived at, all the PI's protocols may be subject to suspension, which would also require notification to the granting agency.

Laboratory Animal Allergies (LAA)

- A. Introduction: Allergy to animal hair and dander is common and therefore one of the most important occupational problems occurring in workers exposed to animals.
- B. Epidemiology: The predominant species invoking allergic reactions in the laboratory in descending order are rabbits, mice, rats, and guinea pigs. Various studies show that 11 to 44% of workers exposed to laboratory animals will develop symptoms of allergy. Of those who become symptomatic, 4-22% may eventually develop occupational asthma that can persist even after exposure ceases.
- C. Risk Factors: The most important risk factor for an individual is the level of exposure to laboratory animal allergens. In a recent study, it was concluded that in individuals with a history of work-related symptoms and objective evidence of allergy as demonstrated by a positive skin test or in vitro test, the odds ratio for developing LAA was 3.35 in atopic (i.e., allergic) compared with nonatopic workers. Recent studies also show that workers in laboratory animal facilities were at greater risk for developing LAA if they (1) were atopic, (2) had respiratory symptoms in the pollen season, (3) were sensitized to cat or dog allergens, (4) had baseline airway hyper-responsiveness, and/or (5) had an increasing number of hours of contact with laboratory animals.
- D. Symptoms: Allergies can manifest in a number of ways including allergic rhinitis (a condition characterized by runny nose and sneezing similar to hay fever); by allergic conjunctivitis (irritation and tearing of the eyes); by asthma (cough, wheezing, and chest tightness); or,

by atopic dermatitis (rashes which are caused by contact with a substance to which an individual is allergic). Symptoms can develop anywhere from months to years after a person begins working with animals. It is unusual to develop symptoms after more than three years of animal contact.

- E. Exposure: The principal route of exposure to animal allergens is inhalation. Direct skin and eye contact can also occur. Percutaneous exposures may result from animal bites, needle sticks, contaminated needles containing animal allergens or antigen contamination of wounds, and cuts on an individual's hand.
- F. Diagnosis: To confirm a suspected diagnosis of LAA, appropriately performed skin tests or in vitro assays for the presence of IgE antibodies to laboratory animal allergens should be done. If asthma is suspected, it is important to perform lung function measurements.
- G. Prognosis: The longer the patients have symptoms, the less likely they are to recover completely; thus, highlighting the need for early diagnosis and prevention. With early diagnosis, prognosis is much better, lung function is preserved, and the degree of nonspecific bronchial hyper-responsiveness is reduced.
- H. Treatment: Pharmacological treatment of acute or chronic symptoms due to LAA is similar to treatment for individuals who have nonoccupational allergic disease. Immunotherapy (i.e., allergy shots) has been performed, but these approaches may not prevent progression of symptoms and deterioration of lung function. On rare occasions, an allergic worker may experience an anaphylactic reaction from an animal bite or from needle punctures contaminated with laboratory animal allergens. Because these reactions can progress rapidly and become potentially fatal, physicians may recommend that the sensitized worker carry a self-administered form of epinephrine. It may be helpful to instruct coworkers in emergency procedures such as cardiopulmonary resuscitation.
- I. Prevention:
 - C Increase the ventilation rate and humidity in the animal housing area
 - C Ventilate animal-housing and handling areas separately from the rest of the facility.
 - C Direct airflow away from workers and toward the backs of the animal cages.
 - C Install ventilated animal cage racks or filter-top animal cages.
 - C Perform animal manipulations within ventilated hoods or safety cabinets when possible.
 - C Avoid wearing street clothes while working with animals. Leave work clothes at the workplace to avoid potential exposure problems for family members.
 - C Keep cages and animal areas clean. Take particular care to control exposures during cleaning.
 - C Use absorbent pads for bedding. If these are unavailable, use corncob bedding instead of sawdust bedding.
 - C Use an animal species or sex that is known to be less allergenic than others.
 - C Reduce skin contact with animal products such as dander, serum, and urine by using gloves, laboratory coats, and approved particulate respirators with face shields.
 - C Provide training to educate workers about animal allergies and steps for risk reduction.
 - C Provide health monitoring and appropriate counseling and medical follow-up for workers who have become sensitized or have developed allergy symptoms.

**Adapted from US Department of Health and Human Services, National Institute for Occupational Safety and Health. 1998. Preventing Asthma in Animal Handlers (Publication 97-116). Cincinnati: NIOSH. Reprinted with permission from Harrison DJ. 2001. Controlling exposure to laboratory animal allergens. ILAR J 42:17-35.*

Bites and Scratches

Animals bite one to two million Americans annually, and bites are responsible for 1% of emergency department visits.

The estimated annual incidence of animal bites is as follows: dog bites, 1-2 million; cat bites,

400,000; snakebites, 45,000; and rats and mice, 43,000.

An increased risk of infection in patients more than 50 years of age, those with wounds of the upper extremities, and those with puncture wounds has been noted. Prior splenectomy or mastectomy may increase the risk of severe infection.

Wild rat bites present public health problems.

Bites cause pain, anxiety, wound disfigurement, and wound infections.

Many organisms are capable of infecting animal bite wounds including *Pasteurella* spp., *Capnocytophaga canimorsus*, *Afipia felis*, *Rochalimaea henselae* and *quintana*, *Clostridium tetani*, *Streptobacillus moniliformis*, *Spirillum minus*, Tularemia, and Rabies.

Treatment of Bite Wounds

Maintain records of all bites and scratches in the Injury and Infection Log.

Wash wound with antiseptic soap.

Report to the Occupational Health Clinic.

The supervisor must complete a *Supervisor's Report of Employee Injury* form and submit it to the Workers Compensation Section of Risk Management within 7 calendar days.

References

- A. Bush, RK and Stave, GM. Laboratory Animal Allergy: An Update. *ILAR Journal*; 44(1):28-51, 2003.
- B. Green, RJ. Developing and Implementing Personnel Safety Programs. *Lab Animal*; 23-29, June, 1997.
- C. *Procedures for Regular Inspections of the Workplace*. 1999. University of South Australia. <http://ohsw.unisa.edu.au/>
- D. Richmond, JY. Hazard Reduction in Animal Research Facilities. *Lab Animal*; 23-29, February, 1991.
- E. Stegmeyer, LL, Soyka, JA, Bechaz, SE, *et al*. Calculating the Cost of Workplace Injuries in an Animal Research Facility. *Contemporary Topics in Laboratory Animal Science*; 40(4):61, July 2001.

Introduction to Animal Hazards Quiz (2003C)

Quiz due 30 days from: _____

Your Name(print): _____ Department: _____
Employee ID# _____ Investigator: _____ Lab phone: _____
E-mail _____ Confirm I passed ___ (Must provide email address)

CERTIFICATION NOT GIVEN IF INFORMATION IS NOT READABLE OR INCOMPLETE

In order to become certified, you may miss FIVE or less questions. The notes may be consulted when answering this quiz. Please circle the "T" if "true", or the "F" if "false".

- 1) T F Triennial inspections are conducted by the Association for the Assessment and Accreditation of Laboratory Animal Care (AAALAC), International to assure compliance with all applicable occupational health and safety standards.
- 2) T F Examples of selected hazards in animal facilities include potential risk of: back injury, hearing loss, electric shock, puncture wounds, needle sticks and exposure to allergens, chemicals, biohazards and radiation.
- 3) T F According to OSHA, management must ensure that employees have a safe place in which to work safely.
- 4) T F University Animal Care has overall responsibility for the Animal Hazards Program.
- 5) T F Supervisors have no legal responsibility for activities within their work sites. This is the responsibility of management.
- 6) T F Employees must be able to clearly identify and understand the various hazards that are likely to cause harm in their workplace and to this end, the University of Arizona's Animal Hazards Program requires a self-assessment and inspection at least annually.
- 7) T F Employees may choose to disregard the safety guidelines and practices as put forth by their employer.
- 8) T F Conscientious personal hygiene (wearing of lab coats, which are laundered frequently, gloves, and frequent washing of hands) remains the basic model of disease prevention.
- 9) T F It is not necessary for medical and research staff to maintain communication to assure the success of the overall Animal Hazards Program.
- 10) T F For legal purposes, it is necessary to document animal bites and scratches, needle sticks and other sharps injuries, as well as overt exposures to chemical-, radioactive-, or biohazards.
- 11) T F Personnel required to participate in the Animal Hazards Program include those individuals who have direct contact with animal tissues, body fluids, or wastes.
- 12) T F Individual risk assessment is determined by frequency of contact, intensity of exposure, hazards associated with the animals being handled, hazardous properties of agents used in research, the susceptibility of individual employees, the hazard-control measures available, and the occupational history of individual employees.
- 13) T F Instructors and students involved with animal related work; some personnel in Facilities Management, Security, and Custodial services; as well as some students, consultants, volunteers, and visitors must be included in the Animal Hazards Program if assessment of risk has been determined.
- 14) T F Participants are organized into categories that reflect the specific surveillance needs of the employee based on real or potential occupational exposure to specific species of animals.
- 15) T F Enrollment in the Animal Hazards Program must occur prior to the employee's or participant's exposure to animals, their viable tissues, body fluids, or wastes.

- 16) T F Only University Animal Care employees need to be queried via the University of Arizona's *Risk Assessment Questionnaire* regarding anticipated exposure to animals.
- 17) T F Not every lab needs to appoint an Occupational Safety Designee to be responsible for occupational safety concerns for their research group.
- 18) T F Individuals who have not registered with the Animal Hazards Program are subject to having facilities access denied and protocol authorization/participation withdrawn.
- 19) T F Every person working with animals should be aware of the potential danger from animal bites and each occurrence should be reported to one's supervisor so that proper measures may be taken.
- 20) T F When an injury or illness has occurred, a *Supervisor's Report of Employee Injury* form must be filed with the UA Department of Risk Management and Safety within a year.
- 21) T F Many of the agents responsible for viral, bacterial, and parasitic infections in laboratory animals are capable of infecting humans.
- 22) T F Employees are counseled to report any gastrointestinal, respiratory, or dermal illnesses that may resemble the signs or symptoms of infections in the animals for which they are caring.
- 23) T F It is not necessary for all participants to receive a Tetanus re-vaccination every 10 years.
- 24) T F Due to privacy issues, Occupational Safety Designee's are not notified of employee or individual participation or non-compliance in the surveillance program.
- 25) T F There is a greater chance of contamination when eating, drinking, smoking, or applying cosmetics in areas where animals are housed or used.
- 26) T F Laboratory coats should be worn over street clothes when working with animals and left in the lab (not worn when eating or in public eating areas) to minimize contamination.
- 27) T F Careful hand washing should be done after handling of animals and prior to leaving the laboratory to minimize contamination.
- 28) T F The Occupational Safety Designee for each research group is not responsible for assuring that all members of the research group are adequately informed of, and receive training in Occupational Safety issues.
- 29) T F Review of protocols cannot be delayed for approval if a Principal Investigator has not received proper certification in Laws & Regulations and Introduction to the Animal Hazards Program.
- 30) T F All participants in the Animal Hazards Program need to have their vaccinations documented.
- 31) T F The University recognizes regular health and safety inspections as an effective mechanism for identifying workplace hazards.
- 32) T F The Animal Hazards Program requires each animal use unit to inspect the work area for hazards and evaluate the findings to develop a plan for hazard control.
- 33) T F Regular health and safety inspections allow one to identify hazardous conditions and apply hazard control measures.
- 34) T F The health and safety inspection team should be comprised of at least two individuals, but the Occupational Safety Designee should not be one of them .
- 35) T F A joint health and safety team inspection should be done at least on an annual basis, and is recommended on a quarterly basis depending on the area.
- 36) T F The Occupational Safety Designee or supervisor need not monitor the workplace for safety or hazardous risks until the time of the annual inspection.
- 37) T F Observations made during health & safety inspections must be recorded on the *University of Arizona Animal Hazards Program Health and Safety Inspection Checklist and Report Form* to ensure that issues raised are not forgotten and to

provide a valuable reference source for spot inspection and periodic checks by supervisors.

- 38) T F The *Identified Hazard Summary Sheet* with required signatures need only be filed at the work site to be available to IACUC, granting agency, and AAALAC site visitors.
- 39) T F There is no reason for analyzing inspection records over time as they don't assist in improving or establishing healthy safe work practices.
- 40) T F Persons noncompliant with the Animal Hazards Program could cause a moratorium on their labs animal ordering.
- 41) T F Principal Investigators who do not file the *University of Arizona Animal Hazards Program Identified Hazard Summary Sheet* will immediately lose facilities access for their research group.
- 42) T F Allergies to animal hair, dander, or excreta is common and is one of the most important occupational problems occurring in workers exposed to animals.
- 43) T F Guinea pigs are the predominant species invoking allergic reactions in the laboratory.
- 44) T F The most important risk factor for an individual developing animal allergies is the level of exposure to laboratory animal allergens.
- 45) T F Allergies can manifest in a number of ways including runny nose, irritation of the eyes, and rashes, which are caused by contact with a substance to which an individual is allergic.
- 46) T F The principle route of exposure to animal allergens is inhalation though direct skin and eye contact can also occur.
- 47) T F Laboratory animal allergies can be partially prevented by reducing skin contact with animal products such as dander, serum, and urine by using gloves, laboratory coats, and approved particulate respirators with face shields.
- 48) T F There is no increased risk of infection from animals bites in patients more than 50 years of age or those with prior history of splenectomy or mastectomy.
- 49) T F Animal bites never cause pain, anxiety, wound disfigurement, or wound infections.
- 50) T F After an animal bite, the supervisor must complete a *Supervisor's Report of Employee Injury* form and submit it to the Workers Compensation Section of Risk Management within 7 calendar days.

DON'T LEAVE ANY QUESTIONS UNANSWERED, THEY WILL BE MARKED INCORRECT!

Mail Quiz to: IACUC Certification Coordinator, P.O. Box 210101, Tucson AZ 85721-0101

2003 Evaluation of "Take-Home" Introduction to Animal Hazards Program - Version C

Thank you for completing this "self-instruction" module. Please take time to complete the short evaluation form. Your comments are valuable in designing the style and substance of future certification courses to make this process effective for research staff. (circle one)

Was this packet useful? YES NO

Did you learn anything new? YES NO

Was the training adequate? YES NO

Was the packet too long? YES NO

If so, suggested items to cut:

Were the questions too difficult or was it hard to find answers to the questions? YES NO

Did you like the self-instruction packet or would you prefer to attend a formal scheduled class?

Do you have any other comments or suggestions to improve this module?

Topics not covered?