Introduction
The University of Rhode Island (URI) Animal Users Health and Safety Program (AUHSP) evaluates the human health risks associated with direct and indirect contact with animals used in research and teaching at URI. The objective of the program is to ensure that health risks for every individual are identified and managed to an acceptable level.

Responsibility for the AUHSP is shared by the Office of Research Integrity, the Institutional Animal Care and Use Committee (IACUC), URI Health Services, and Environmental Health and Safety (EH&S). The Office of Research Integrity (ORI) and its partners establish policies and procedures that ensure the occupational health and safety of animal users and other individuals having direct and indirect contact with animals used in research and teaching.

Regulatory Requirements
“The [U.S.] Public Health Service Policy through the Guide for the Care and Use of Laboratory Animals requires that ‘An occupational health and safety program must be part of the overall animal care and use program.’ It also suggests that ‘An effective program relies on strong administrative support and interactions among several institutional functions or activities, including the research program, the animal care and use program, the environmental health and safety program, occupational-health services, and administration.’”

The main goal of an occupational health and safety program, as defined in Occupational Health and Safety in the Care and Use of Research Animals (NRC, 1997), is “to prevent occupational injury and illness by the control of hazards and the reduction of risks.”

Program Participation Requirements
- Read the species specific training information Working Safely with Laboratory Rodents and Rabbits, Working Safely with Birds, etc. on the AUHSP website.
- Read the Allergy Prevention training document to be informed and educated about safe work practices.
- Complete the Occupational Health and Wellness Survey if required for the species of animals you will be working with (laboratory rodents, rabbits, birds, farm animals, wild caught mammals, venomous/poisonous animals) – e-mail completed survey to Research Integrity.
- Complete the Training Acknowledgement Form and e-mail the completed form to Research Integrity.
- Read the IACUC Occupational Health and Safety Policy to determine if a physical examination, testing or vaccinations are required for the species of animals with which you will be working.

AUHSP Components

Hazard Identification
- The IACUC meets monthly to evaluate new protocols and major protocol amendments submitted by researchers. This process helps the university identify occupational health and safety concerns before work begins. Recommendations for hazard mitigation are made at this time and committee approval is granted only after all concerns have been addressed.
- Semi-annual facility inspections are conducted. The inspection team includes facility managers, EH&S, ORI, and IACUC members.
- Review of animal disease and surveillance by the URI attending veterinarian.
- Review of the required medical evaluation form, the Occupational Health and Wellness Survey, by the URI Health Services and OEHN, the University’s occupational health consultant.
- Evaluation of accident reports submitted by individuals working with animals.
Risk Assessment

- Health risks associated with participation in a specific research project are assessed by the IACUC at the time of the protocol review. Completed AUHSP documentation for all associated personnel must be received by ORI at the same time the protocol is submitted. If new personnel are being added to the protocol, they must be added via the Protocol Amendment Form. The IACUC determines results of these deliberations are shared with the project’s principal investigators as part of the correspondence associated with the approval process.

- Personal health risks are assessed through the review of the Training Acknowledgement Form and Occupational Health and Wellness Survey. These documents must be completed by all individuals who are listed in the participants section (see above). Survey completion is required by all participants (with the exception of those working with fish, amphibians, reptiles, and those with limited animal contact). Once submitted to ORI, the Training Acknowledgement Form is reviewed by ORI and entered into the Occupational Health database. The survey is forwarded to either OEHN or URI Health Services for medical evaluation. Occupational medicine professionals will review the surveys and offer specific recommendations for each individual regarding preventive medicine programs, safe work practices, and/or the need for additional training, tests, or treatment.

- Students enrolled in classes that use vertebrate animals will be provided with an in-class introduction to the care and use of animals. This overview includes information about the IACUC, regulations governing animal care and use, the mechanism for reporting concerns on the care and use of animals, as well as occupational health and safety issues. The overview will be given in targeted courses to Animal and Veterinary Science students prior to their use of animals in their courses. If students have any medical conditions that might increase their risk, they should let the faculty/professor know and contact URI Health Services before working with animals or entering an animal facility. 

- Visitors to animal facilities must comply with the Occupational Health and Wellness program. The animal-facility manager, or designee, must meet with visitors to provide information on potential risks associated with access to the animal facility. Visitors should contact their personal health-care provider before entering an animal facility if they have any medical conditions (e.g., if they are immune-compromised or pregnant, or have allergies) that may increase their risk. Visitors may only have indirect contact with animals and must be accompanied at all times—while in the animal facility—by the animal-facility manager or designee.

Risk Management: To help manage risk associated with animal use at URI, animal users should shall:

- To participate in AUHSP: Submit both the Training Acknowledgement Form (required by all) and the Occupational Health and Wellness Survey (if required) to the Research Integrity Office. Note that participants that work exclusively with non-venomous/poisonous fish, amphibians or reptiles or those with limited animal contact are not required to complete the survey.

- Promptly report any accidents, illnesses, and zoonotic diseases on the IACUC’s Event Reporting Form. If reporting an animal concern, contact and submission information is provided in the Animal Welfare Concerns document.

- Receive adequate training in proper animal restraint and handling, chemical lab safety, animal work–related hazards and safe work practices. Facility managers, PIs and EH&S provide these training sessions.

- Follow posted requirements and safety recommendations at all times.

- Understand safety procedures before beginning any potentially hazardous projects.

- Maintain restricted access to the laboratory, animal facility, and animal procedure areas.

- Wear personal protective equipment (PPE) as recommended. Lab coats or coveralls are required when working with animals; additional PPE, such as gloves, shoe coverings, or a face mask may also be necessary in some areas.

- Minimize splashes and aerosols; avoid inhaling.

- Dispose of waste appropriately. Contaminated bedding is autoclaved; animal carcasses, animal products, or items contaminated by animal products should be disposed as RI regulated medical waste. Follow the recommended guidelines.

- Dispose of contaminated sharps (e.g., hypodermic needles, scalpel blades) in a Biohazard Sharps Container. For additional information on sharps precautions, see Appendix G of the URI Biosafety Manual “Sharps- Handling and Disposal SOP”.

- Decontaminate equipment and work surfaces at least once a day and always after any spill of potentially infectious material. See Appendix I of the URI Biosafety Manual “Disinfectants for Biohazardous Materials SOP”.

- Use good personal hygiene:
  - Wash hands after animal contact, after changing gloves and before leaving the laboratory or animal facility.
  - Do not eat, drink, smoke, handle contact lenses, or apply cosmetics in work areas. Wash hands before and after engaging in any of these activities.
  - Isolate sick or infected animals whenever possible and handle and care for them last.
General Hazards Involved in Using Animals

Allergies
Individuals who have pre-existing allergic conditions face a greater risk of developing allergies to animals. Typical allergens include animal urine, saliva, dander, and hair. Most common symptoms include runny nose, itchy eyes, and skin rashes. If ignored, reactions can lead to more severe symptoms, such as asthma (coughing, wheezing, and shortness of breath) which may persist beyond the period of animal exposure. In extreme cases, life-threatening anaphylactic reactions can occur.

Exposure to animal allergens should be limited to prevent the development of allergies. Personal protective equipment (e.g., masks and gloves) and personal hygiene are important barriers to animal allergen exposure. Note that disposable surgical masks may not be effective against allergens: properly fitted respirators will provide superior protection. In this case, participation in fit testing and medical clearance are legally required. For more information refer to the ORI Allergy Prevention guide.

Chemical Hazards
Hazardous chemicals such as disinfectants, fixatives, pesticides, anesthetic gases, and toxic chemicals are commonly used for experimental purposes and require cautious handling. When using such chemicals, personnel should wear appropriate personal protective equipment, and be familiar with the information summarized on the EH&S Chemical Safety website.

Radioactivity
Radiation is a hazard for those exposed to X rays, gamma rays, or radioactive isotopes. Appropriate training and the use of personal protective equipment are required. Before using radioactive materials in animal facilities, or if an accidental exposure occurs, contact The Office of Radiation Safety.

Ergonomics
Because repetitive motion, such as cleaning cages by hand, can produce small stresses that may lead to cumulative injuries, tasks should be varied to reduce the number of repetitions. Because lifting heavy bags of food or large animals may contribute to back injuries, properly designed equipment should be used to assist with such tasks.

Animal Bites, Kicks, and Scratches
Bites and scratches are the most common physical hazards encountered when working with animals. Kicks and crushing injuries occur more frequently with larger species. In many cases, these physical hazards can be prevented by following safe work practices that ensure proper animal handling. An accident may appear to be inconsequential, but complications may result. Of special concern are venomous species, which require a comprehensive review of safety precautions and emergency care prior to handling.

Sharps
Sharps pose a risk for personnel but especially when working with animals. Special care is needed when using needles and scalpel blades to avoid injuries. Puncture-resistant, leak-proof disposal containers shall be available wherever sharps are used. For recommendations on safe handling and disposal of sharps, see Appendix G of the URI Biosafety Manual “Sharps- Handling and Disposal SOP”.

Animals such as pigs and equipment such as pressure washers or cage washers can cause intense noise. Personnel exposed to noise levels exceeding 85 dB must be part of the Hearing Conservation Program as legally mandated by the Occupational Safety and Health Administration (OSHA). If engineering controls are not successful at mitigating the noise, hearing protection devices, such as earplugs or earmuffs, shall be worn.
Special Recommendations for Those Whose Health has been Compromised

Individuals with certain medical conditions may be at an increased risk if exposed to infectious agents. Some examples of these conditions include immunosuppression, pregnancy, chronic liver, respiratory, or kidney disease, and heart problems. Those with compromised health should notify URI Health Services or their personal-care physician before they work with animals.

Biohazards
Research projects may involve the use of biological materials as part of their study design. Areas where biological materials are used must be properly identified with the international biohazard symbol. Specific recommendations and restrictions must be clearly posted and enforced at all times.

Projects involving the following must undergo review by the Institutional Biosafety Committee (IBC) prior to beginning work:

- Recombinant DNA (rDNA)
- Biological agents (i.e., viable infectious microorganisms (including prions) regardless of their pathogenicity to humans)
- Human or nonhuman primate materials (e.g., blood, unfixed tissue, cell lines)
- Biological toxins subject to the National Select Agents Registry Program managed by the U.S. Departments of Health and Human Services (HHS) and Agriculture (USDA).

The current list of toxins is identified at: http://www.selectagents.gov/index.html

The IBC reviews the details of the study and evaluates the precautions needed to minimize the risk for all involved in the project risk level assigned (BSL1 & BSL2). The purpose of the evaluation is to ensure that biological materials are used safely and conform to existing standards published by the Centers for Disease Control and the National Institutes of Health. The fifth (2009) edition of Biosafety in Microbiological and Biomedical Laboratories is available in PDF format online at: http://www.cdc.gov/biosafety/publications/bmbl5/BMBL.pdf

Zoonotic Diseases

Unless experimentally infected with a zoonotic agent—a disease agent that can be transferred from animal to man—research animals generally carry a limited number of infectious microorganisms of concern to animal users. This is mainly due to the existence of preventative medicine programs and the frequent use of specific pathogen-free animals in research projects. Although small, the risk of infection between research animals and humans does exist and must be recognized and managed to avoid exposure. For example: wild-caught mammals may be infected with the rabies virus, and Salmonella could be shed by a number of domestic and wild species, from reptiles to cows.

Zoonotic agents generally pose a higher risk to the immunosuppressed, pregnant women, children, and the elderly. Special care must be taken to avoid contact between vulnerable people and infectious agents of animal origin. For species-specific information, refer to the Animal Users Health and Safety Program training materials.

- If you are ill or injured, seek medical attention or inform your physician that you work with animals and may have been exposed to zoonotic diseases. Students should have their physician contact URI Health Services regarding their illness or injury.

- Contact the URI Environmental Health and Safety Office (EH&S), your supervisor, and the attending veterinarian if you have a fever, diarrhea, or other symptoms that could be associated with zoonotic diseases, biohazards, or other hazardous materials that you work with; or you become immunocompromised.

For routine calls, contact the EH&S Hotline at (401) 874-7993.

In case of emergency, contact the URI Public Safety Office at (401) 874-2121.

If you have any questions on the information presented in this brochure contact:

Office of Research Integrity
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For more information on the Animal Users Health and Safety Program (AUHSP), visit our website: http://web.uri.edu/researchcondev/animal-users-health-and-safety-program/