

Occupational Health and Safety Program

Directions:

All principal investigators of IACUC-approved protocols are required to read the following document. PIs should also assign student-researchers and other personnel involved in caring for the animals listed in the IACUC-approved protocols to read this document.

At the end of the document is an agreement form stating that all individuals involved in this IACUC-approved protocol have read it and understand its contents.

The agreement form, and any questions or comments, should then be sent to the IACUC Administrator, Box 6926, irb-iacuc@radford.edu.

Occupational Health and Safety Program

Background

Radford University, in order to be permitted to use vertebrate animals in teaching and research, must comply with federal laws, regulations, and policies. Many of those regulations and guidelines require the establishment of an occupational health and safety program for individuals who work with animals or their tissues. The goal of the Occupational Health and Safety program (OHS) at Radford University is to ensure that all persons who have contact with animals are made aware of the potential hazards of working with animals and of procedures and equipment that can be used to reduce their risk of exposure to specific hazards.

Individuals working with animals in research or teaching settings are at risk from several potential sources of illness or injury. Among those risks are zoonotic diseases (diseases that are transmissible from animals to humans); animal allergen exposure resulting in mild to severe allergic reactions in humans; bites, kicks, and scratches; injury from heavy caging equipment; burns and scalds from cage-washing activities; hearing loss from machinery (in cage-wash areas, for example) or from animal vocalizations; and human or zoonotic pathogens, toxins, carcinogens, and radioisotopes used in experimental animals. The purpose of this document is to make employees, students, and researchers aware of the risks that may be present in the animal facility and their labs and what precautions, procedures, and equipment they can use to minimize the risks to their health and well-being.

It is the responsibility of the principal investigator (PI) of each IACUC-approved protocol to ensure that all workers under his or her supervision (co-investigators, staff, students, and volunteers) or who are otherwise working on their protocol(s) and who have contact with animals or their tissues have been informed of the potential hazards or risks involved. They must also be made aware of the procedures and personal protective equipment (PPE) available to prevent and reduce hazards or risks of injury or exposure to infectious disease. This also includes communicating hazards or risks specific to the research protocol to the animal care staff working with the PI's animals, but who are not under the PI's supervision. The PI must inform the animal facility manager of the risks and protective procedures to be followed, and the animal facility manager will instruct his or her staff.

Employees (hereafter “employees” will refer to employed caretakers, student volunteers, student researchers, and faculty, including principal investigators) are expected to follow established safe work practices, to practice appropriate personal hygiene, and to properly use and care for required PPE. Employees having health and safety questions about their work tasks and work environment should ask their supervisor for answers to those questions. Employees must maintain current tetanus vaccinations (booster every 10 years) and any other vaccinations required for working in specific facilities. Employees must inform their supervisors of any accident or injury that occurs

to them and should advise their supervisor of symptoms they have that may be associated with a zoonotic disease.

Employees who are pregnant, planning conception, or who are immune-compromised or immune-suppressed should consult with the RU Office of Environmental Health and Safety, prior to handling animals or chemicals, to determine if any additional training, provisions, or consultation with a licensed physician is necessary for participation in the program.-

If you have any questions about employee occupational health and safety, please contact John Crocker, (540) 831-7791

If you have questions about the occupational health and safety program, as it pertains to animal research and teaching, please contact the IACUC Administrator, (540) 831-5290, irb-iacuc@radford.edu

For Radford University's general safety policies, refer to www.radford.edu/fpc/Safety/Policies.htm

For Radford's general safety policies related to occupational health, refer to www.radford.edu/fpc/Safety/services/occ_health.htm

For Radford's Occupational Health and Safety Program for Animals Handlers, refer to http://www.radford.edu/fpc/Safety/Animal_Handlers.pdf

Importance of Prevention

Most accidents, injuries, and exposures can be prevented through use of appropriate practices, procedures, and PPE. Employees should work with their supervisors to ensure that their duties have been properly assessed for risks so that appropriate measures are implemented to ensure worker protection and workplace safety. Proper understanding and use of PPE, personal hygiene, and safety practices are essential to preventing animal\workplace injury or illness.

Personal Hygiene Practices

PIs and lab or facility supervisors must establish hygiene standards for their respective areas and identify the risks or hazards present in those areas. Basic hygiene policies include no eating, drinking, smoking, applying of cosmetics, or chewing of gum or tobacco in animal housing or procedure areas. Gloves, gowns, lab coats, bonnets, booties and other items of protective clothing must be worn where indicated by the PI and lab or facility supervisor. Frequent hand-washing, both in and out of animal areas, must also be performed. Any protective clothing worn in an animal facility or procedure area must be removed before going to lunch or breaks. Airborne animal dander and other

airborne contaminants can adhere to the employee's clothing, hair, and skin. Some facilities may require showering before leaving the facility.

Recognition of Physical Hazards

Animal-Related Hazards

Injuries to workers caused by animals include bites, kicks, scratches, and similar animal-inflicted wounds. Research technicians, research staff, animal husbandry staff, and students must be properly trained in animal handling and restraint techniques. Supervisors and instructors must train new personnel in proper animal handling and restraint procedures for each species they are required to handle and restrain **before** the person begins work with animals.

Mechanical Hazards

Rack washers, tunnel washers, autoclaves, and other mechanical equipment may pose a risk of injury to animal care staff. Supervisors must train all personnel who use facility equipment in the proper operation, use, and maintenance of the equipment. Employees are expected to follow established Standard Operating Procedures (SOPs) which include information about safe use and accident prevention. Crush injuries may occur when racks and caging units are not moved properly or during warehousing operations involving bulk animal supplies on pallets or shelves. Supervisors must train all personnel in appropriate procedures for recognizing the means for avoiding crush injuries. PPEs such as steel-toed shoes or boots may be required in certain work areas.

Noise Hazards

Cage-wash and other mechanical equipment and some animal species (e.g., swine, canines, and some species of birds) may produce levels of noise that could injure an employee's hearing. Supervisors will direct those employees exposed to excessive noise to wear ear plugs or other hearing protection devices.

Thermal Burns

Cage-wash and autoclave equipment generate high temperatures which could result in thermal burns in personnel who touch hot surfaces or processed materials that have not yet cooled. Supervisors must train all personnel who use heat-generating equipment to follow established SOPs for handling equipment and processed materials. Personnel must use appropriate PPEs (e.g., thermal mitts) when handling hot materials.

Electric Shock

Wet conditions may be present during room and hallway cleaning and in cage-wash areas. The presence of electrical devices in those areas could pose a risk of electric shock. Areas where fish tanks or aquaria are maintained pose similar hazards. The

IACUC, during semiannual facility inspections, ensure that electrical outlets in those areas are either waterproof or are ground fault interrupt (GFI) circuits. Extension cords must not be used as a long-term solution in place of permanent wiring; they can also create other hazards such as tripping. A qualified electrician must make electrical repairs.

Slip and Fall Hazards

Cleaning and mopping activities and water leaks from caging can result in slippery floor surfaces. The supervisor should provide training on procedures and on PPEs that can be used to prevent slip and fall accidents. Poor housekeeping practices can increase the seriousness of other hazards associated with animal care and use, particularly slip and fall accidents. Housekeeping should be sufficient to keep work surfaces and floors clean and clear of clutter, obstructions, waste, liquids, and other materials.

Recognition of Infectious Hazards

Most commercially-produced and supplied laboratory rodents and poultry are free of disease. Dogs, cats, horses, livestock, poultry, avian, and wild vertebrate species may carry diseases that could be transmissible to humans.

Rodents (mice, rats, hamsters, guinea pigs, gerbils)

Zoonotic Diseases of Rodents

Mice, rats, hamsters, guinea pigs, and gerbils can carry organisms that may cause infection and disease in humans (zoonotic diseases, zoonoses), and these may be transmitted either directly through bites or indirectly through feces. Wild rodents and lagomorphs can carry serious zoonotic diseases like *Tularemia*. Most rodents in a commercial or laboratory setting are strictly monitored to assess their health status, but development of a disease in humans, usually those with impaired immune systems, might occur.

Injuries from Handling Rodents

A laboratory- or commercially-born rodent is less likely to bite or scratch if frequent gentle handling is used to make the animal accustomed to humans. Rodents may occasionally inflict injuries to people such as bites and scratches. The long incisor teeth of rodents can inflict deep bites. It is essential that people who handle rodents for research or teaching be provided with training in proper handling techniques in order to avoid injury to themselves or the animals, such as specific handling and restraint techniques and protective clothing requirements.

Allergic Reactions to Rodents

The greatest occupational risk in working with rodents is the development of allergies to rodents. People who have pre-existing allergies are at greater risk when handling rodents. Rodent allergens (protein materials which cause an allergic reaction in people) are found in the animal's urine, which can then contaminate their fur and can also be found in their saliva. These allergens can be carried by air currents in the animal room and can come into contact with a person's skin, eyes, nasal passages, and lungs where allergic reactions can occur. People with allergies to rodents may have sneezing, congestion, itchy and watery eyes, and skin rash or itching when they are exposed to rodents or to rooms and equipment used to house the rodents. A surgical mask is not adequate PPE when attempting to control allergen exposure when working with rodents.

Birds (poultry and other wild and domesticated avian species)

Zoonotic Diseases of Birds

Birds (wild species and domesticated poultry) can carry organisms that may cause infection and disease in human (zoonotic diseases, zoonoses) that may be transmitted either directly (e.g., through handling live or dead birds) or indirectly (e.g., through exposure to feces or airborne organisms). Flocks of birds in a laboratory or teaching setting are usually closely managed and free of disease. The likelihood of a person contracting a disease from those birds is very low. However, there is always a risk of an outbreak occurring within the laboratory flock either due to a new bird being introduced or the animal handlers unknowingly contaminating the flock by wearing clothing or shoes that have been in contact with disease-carrying birds from outside the holding facility. There are a number of diseases that are infectious to both birds and people such as Psittacosis, Salmonellosis, Campylobacteriosis, *E. coli*, Avian Influenza, and Avian Tuberculosis. Some diseases may also be transmitted through bird feces. Some diseases found in wild bird populations require insect transmission between the bird and a human (West Nile Virus). Some of the diseases may not produce observable signs of illnesses in the bird; therefore, if you handle birds or their wastes, you must take appropriate precautions to prevent transmission of these infections.

Allergic Reactions to Birds

Various bird-proteins, including those found in feathers, hairs, and feces, are allergens (materials which cause an allergic reaction in people), and some may cause a disease called hypersensitivity pneumonitis, a lung condition that mimics pneumonia. Symptoms develop after repeated exposure to the bird allergens. Signs of an allergic reaction usually occur after several hours after exposure and may include runny or irritated nasal passages and/or asthma-like symptoms (wheezing and a dry cough). A surgical mask is not adequate PPE when attempting to control allergen exposure when working with birds.

How to Protect Yourself from Injury, Infections, and Allergies

Wash Your Hands

The single most effective preventative measure that you can take is thorough, regular hand washing. You must wash your hands (and arms if long-sleeved garments are not worn) after handling rodents or birds. You should avoid touching your face, eyes, nose, or mouth with unwashed hands or contaminated gloves. You must never eat, drink, smoke, or apply makeup in animal rooms.

Wear PPE

If you handle birds or rodents, you should wear a laboratory coat or the most appropriate gloves for the job. When in close contact with rodents or birds of unknown origin or if you are working with rodents or birds in an infectious disease experiment, wear a mask or a respirator, as well as eye protection.

Seek Medical Attention Promptly

If you are injured on the job, promptly report the accident to your supervisor even if it seems relatively minor. Your supervisor should fill out Supervisor's Incident Report for Workers Compensation (PR 37, available on the RU Human Resources website) and Employer's Accident Report (VWC Form No. 3, (available in the [RU Occupational Health and Safety Program for Animal Handlers](#) and on the RU website) within 24 hours. Clean all minor cuts and abrasions immediately with antibacterial soap, and then protect them from dirt or animal secretions until they have healed.

If the injured person is an employee (faculty/staff/student worker), he or she shall go to one of the approved panel physicians, listed in the Supervision Handbook or listed in the Human Resources Office. In the case of an emergency, seek treatment immediately. If the injured person is a student who is not with the animals as part of campus employment, he or she should seek treatment at the Student Health Center (or if after hours, at the Emergency Room of the Carilion New River Valley Medical Center), and then the student should contact the University Safety Officer at 831-7791.

Tell Your Physician You Work with Birds or Rodents

Whenever you are ill, even if you are not certain that the illness is work related, always mention to your physician that you work with rodents or birds. Many zoonotic diseases have flu-like symptoms and would not normally be suspected. Your physician needs this information to make an accurate diagnosis. Persons working with rodents and wild birds in field research should advise their physician that they have a risk of exposure to Hantavirus (for rodents) or bird diseases.

Additional Reporting and Steps for Bites

1. Where possible to do so safely, identify the biting animal and all associated animals. If captured in a live trap (particularly including potentially feral cats

and all wild animals), DO NOT release the animal. Great care should be exercised when moving the live trap to avoid further bites from the animal inside it. The live trap should only be handled by persons with adequate titer protection provided by a rabies prophylaxis vaccination. If possible, preserve the life of the biting animal for diagnostic purposes. Any animal that bites and escapes shall be observed by the Principal Investigator, if safe and if possible to do so, for reporting purposes where appropriate.

2. For laboratory animals, observe 10 days for signs of abnormal behavior. Notify the Veterinarian if there is any sign of sickness or altered behavior in the biting animal during the quarantine/observation period.
 - a. During the period of quarantine, the quarantine card, signed by the examining veterinarian, shall remain on the cage. The animal shall not be removed from the cage or room and shall not be used for experimental purposes.
 - b. If the biting animal dies before or during the quarantine period, the Veterinarian must be notified, and the whole carcass shall be refrigerated. Do not freeze the carcass, as this interferes with diagnostic procedures.
 - c. Animals surviving the quarantine period will be released to the investigator for further use.
3. For wild animals, maintain custody where possible and safe to do so, and contact the Virginia Department of Health (VDH), per the Virginia Rabies Policy.
 - a. Instruction provided by VDH for wound care and other post-bite treatment, as well as for the disposition of the animal, must be followed.
 - b. A veterinarian may examine the animal and institute the proper quarantine measures (not required for laboratory rats and mice).
 - c. However, the animal is most likely to be required to be taken promptly to the nearest state laboratory for examination.

The Accident Form, as well as other related forms, can be found online:

www.radford.edu/fpc/Safety/forms/index.htm.

Recognition of Chemical Hazards

In the Animal Facility

A variety of chemicals are required in animal facilities for cleaning, disinfection, and sterilization. Those chemicals may cause irritation or burns to skin, eyes, and respiratory passages. Animal husbandry and research staff should follow manufacturer's recommendations for storage, mixing or dilution, and application of chemicals, and follow facility SOPs for use of the chemical agents. Material Safety Data Sheets (MSDSs) provide both workers and emergency personnel with the proper procedures for handling or working with a particular chemical. MSDSs include information such as physical data, toxicity, health effects, first aid, reactivity, storage, disposal, protective equipment, and spill or leak procedures. They are of value when a spill or other accident occurs, as well. The animal facility supervisor or PI must maintain MSDSs for every commercial and experimental chemical used in the facility and must ensure that the MSDSs are available for reference and review by anyone who works in the animal facility. It must be noted that, if bulk solutions are diluted and placed into separate containers, such as hand held spray bottles, those containers must be clearly labeled, identifying the contents and appropriate hazard warnings.

Chemicals used in the experimental testing of animals may potentially be toxic or carcinogenic (cancer causing). Principal investigators (PIs) are required to describe the chemicals they will use and the potential hazards associated with those chemicals in their IACUC-approved protocol. Copies of those protocols must be available for reference by the animal husbandry staff. The animal facility supervisor must train his or her staff in, but not limited to, (1) what chemical agent is used; (2) what its route of entry is; (3) its possible toxic effects; (4) proper disposal of wastes; (5) handling of spills; and (5) PPE requirements. The PI will ensure that signs identifying the presence of hazardous chemicals are posted in those areas where they are used.

For Radford University's general policies on Safety related to Laboratory Facilities, refer to

www.radford.edu/fpc/Safety/ChemHyg/chp1.htm

and

www.radford.edu/fpc/Safety/ChemHyg/chp2.htm

Pathogens Exposures

Despite the best efforts to avoid injuries and infectious exposures, accidents can happen. Immediate medical attention must be given to a splash onto mucous membranes (e.g., eyes, nose, mouth), bites or scratches, or injuries caused by any piece of equipment that might have been exposed to secretions or blood, such as a needle-stick or a scratch from a cage.

First aid supplies should be labeled clearly and be easily accessible in the work area. There should be a bite or wound kit stocked in every work area. Everyone working

in the area should know where this kit is kept and how to use it. The bite and scratch kits need to be checked periodically to ensure that the supplies in them are in date.

Following any injury or infectious exposure, administer first aid within 5 minutes to reduce the risk of infection. If you are scratched or bitten, follow these steps: (1) if you are losing a large amount of blood from the wound, particularly if the blood is spurting, apply pressure to the wound and seek medical help immediately; (2) if not bleeding dangerously, as above, immediately go to a sink, wet the wound with water, and apply disinfectant soap; (3) scrub the injured area with soap and water as vigorously as possible for 20 minutes; (4) rinse the wound thoroughly and pat dry; (5) inform your supervisor of the exposure; (6) refer to a list of contacts and phone numbers for injuries and exposures supplied and posted by your supervisor; and (7) identify the animal or equipment that caused your injury.

If you are splashed in the eyes, nose, or mouth, follow these steps: (1) flush the injured area with running water for 15 minutes; (2) inform your supervisor of the exposure; (3) refer to the list of contacts and phone numbers; and (4) identify the animal or equipment that caused the injury.

Availability and Use of PPEs

Personal protective equipment (PPE) includes but is not limited to lab coats, gowns, scrub suits, latex gloves, safety gloves for handling hot items, goggles, safety glasses, face shields, head covers, ear plugs and other hearing protection devices, shoe covers, safety shoes, Tyvek full-body suits, face masks, half-face or full-face respirators, and PAPR (Powered Air Purifying Respirator) devices. PPE protects animal handlers and research staff from a wide range of workplace risks, including animal allergens, disease exposure, and mechanical injury. The selection of appropriate PPE is based upon specific workplace risks as identified by the Principal Investigator (PI) or lab supervisor, and will also be reviewed by the Environmental Health and Safety Office to confirm the assessment and assignment of appropriate PPE. It is important that employees work with their supervisor(s) and the EHS Office to ensure that the tasks the employee is to perform have been assessed for risks and that the proper PPE has been identified and acquired for the employee's use.

The Importance of Personal Protective Equipment

Personal Protective Equipment (PPE) that fully covers your body and protects your eyes is essential for preventing accidental contact with fluids from the animals. Breaks in the skin (such as a cut or a rash) and your mucous membranes (e.g., eyes, nose, mouth) are gateways for pathogens to enter your body. Appropriate body coverings will protect you from splashes, although not necessarily from needle punctures or contamination associated with an injury.

PPE is designed to address specific hazards, ones that cannot be avoided by either or both engineering and administrative controls or safety work practices, and will not

protect against all hazards. PPE may be required in combination to provide adequate protection against various hazardous; for example, a leather outer glove, to protect from scratching and biting, and a nitrile inner glove to prevent exposure to infectious fluids. Your safety depends on the combined use of PPE, safe work practices, and appropriate methods for handling the animals.

It is important to remember that the items you wear in the animal areas must never be worn outside the animal facility. Laboratory coats, scrubs and other garments should not be washed in home washing equipment to avoid transfer of lab animal allergens or other contaminants into the home.

At the entrance of any laboratory animal facility, a full array of appropriate supplies and PPE should be available at all times. All personnel entering should wear, as deemed appropriate depending on the species and its health status: (1) head cover, (2) safety glasses, (3) face mask, (4) gloves (gloves should be pulled over the sleeve at the wrist), and (5) shoe covers.

Exam gloves should be used when handling the animals. Exam gloves are commonly available in latex, nitrile, and vinyl. Nitrile gloves resist puncture and tearing more than the other 2 materials.

If you have a cut or an abrasion on your hands, bandage and tape the area before you put on your first pair of gloves.

Consider taping the glove to your sleeve.

Exam gloves should never be reused. After use, your gloves should be treated as though contaminated and should be disposed of accordingly.

After removing your gloves, you should always wash your hands with soap and water or a disinfectant foam. Hand contamination commonly occurs in the process of removing and discarding your gloves.

Effective eye protection is necessary to guard against the splashing of biological fluids which may contain infectious agents. Face shields have an advantage over goggles in that they protect the eyes as well as the mucous membranes and facial skin from splash exposures.

A respirator (NIOSH-approved) may be necessary when working with animals that have diseases transmissible by aerosol (e.g., Hanta virus). Respirators are specially designed masks with filters that provide respiratory protection. Respirators are certified by the National Institute for Occupational Safety and Health (NIOSH) for protecting workers from specific levels respiratory hazards. Anyone working with infectious aerosols should wear a particulate respirator and not a surgical mask.

Individuals must first be assessed whether they can safely wear a respirator without the risk of psychological or physical harm. For example, pulmonic or cardiac conditions may rule out the use of a respirator. Individuals unable to wear a respirator should be assigned to other work areas where no respiratory hazard is present.

All respirator users must receive training by RU EHS on the fit and the operation of the units they are to wear for cleaning and disinfection, maintenance, storage requirements, and inspection for proper function and need for repair.

If respirators are a reusable type, maintenance procedures will be provided by RU EHS for the cleaning, disinfection, storage, inspection, and repair of the respirators. Reusing a respirator is limited by considerations of hygiene, damage, and breathing resistance.

Types of Disposal

PPE

Taking off (doffing) and disposing of the protective gear is part of biohazard containment. Protective clothing should never be worn or taken outside the animal facility or into a break room housed within a facility. Following proper procedures in taking off and disposing of the protective gear is part of biohazard containment.

As you leave the animal area, you should follow a routine procedure for removing your PPE. Since you are likely to have touched contaminated surfaces, your garments must also be considered contaminated. As you remove these articles, you may brush them against your skin and contaminate yourself. In particular, if you contaminate your hands, you can acquire an infection when you later touch your face, mouth, or eyes. These coverings must be disposed of safely to prevent contamination of others outside the facility. As you remove your PPE, be sure to put these items in the proper containers for laundry or disposal.

Before leaving the area, be sure to wash your hands with soap and water or an alcohol hand scrub. Frequent hand washing is one of the most important precautions you can take to protect yourself from potential hazards.

Sharps

You should be particularly careful about handling sharps because of the serious pathogens that may be carried by the animals or in the substances injected into the animals. Sharps are items that can cause a puncture or a laceration injury, such as hypodermic needles, scalpel blades, or items made of glass or hard plastic. All used sharps should be considered contaminated and should be handled and discarded in a manner to avoid injury. Whenever possible, substitute glassware with plastics to avoid

breakage and the potential of lacerations. When glass breaks, use a broom and a dustpan to clean it up, rather than your hands even if gloved.

All sharps, such as hypodermic needles and scalpels, pose a risk of physical injury and a risk of infection transmission and, thus, must be disposed of in designated sharps containers. They must NOT be disposed of in room trash containers. It is best to dispose of used hypodermic needles without re-sheathing the needle. Place the used syringe and needle (unsheathed) directly into a sharps container immediately after use, wherever possible. If the sharps container is full, the facility supervisor should be notified.

Avoid re-sheathing a needle using 2 hands (one guiding the needle and the other holding the sheath) as this is a common cause for a needlestick injury and should never be done. Needles can be safely resheathed by a one-handed technique, if it is essential to re-sheath a needle: one hand grasps the syringe and directs the needle into the sheath, which is lying on the table. Pivot the syringe upwards, simultaneously pressing it downward against the upturned sheath. When the needle hub snaps into the sheath cuff, the needle is now sheathed.

A safe alternative to conventional hypodermic needles is an injection system that is needleless or that automatically retracts the needle into the sheath after being deployed. Needle sheath holders permit one-handed resheathing of a needle. Safety needles incorporate a sliding protective sleeve over the needle or a retractable needle.

All sharps should be discarded in a proper sharps container. A typical sharps container is made of a heavy plastic that resists puncture by the sharps inside. The opening of the container is small and may have flanges or other devices to prevent someone from reaching into the box for retrieving an item from inside it. The opening has an attached lid. When the lid is snapped onto the opening, it cannot be removed and so the container must be discarded.

A sharps container should be conveniently accessible to any work process involving disposable sharps to avoid the risk of injuries when carrying contaminated needles to another area for disposal. Place your sharps container in a handy location so that you can efficiently dispose of needles and such immediately upon use. Be careful not to place the container in the way of your work; if the container overturns, items or fluids may spill out.

The sharps container should NOT be filled so high that the discarded needles reach the container opening. Seal and dispose of the container when it is about 2/3 full. Some containers may have a line indicating full capacity. Jamming more items into an overly full box may cause fingers to be lacerated by items previously discarded. A sharps container should not be simply thrown away in the trash. Remember that it contains items potentially contaminated with infectious materials. Typically these containers are incinerated, or they may be autoclaved and ground up before disposal.

Animal room doors should be posted with signs showing the universal hazard symbol. The sign should contain the name of the investigator, any hazardous agents in use, and any special precautions required.

Standard microbiological practices are an essential part of biosafety. The following activities are prohibited in a biohazard area: eating, drinking, smoking, handling contact lenses, applying cosmetics, and storing human food. Remember, as you leave the facility and remove your gloves, wash your hands before you do anything else. Get in the HABIT of never touching any part of your face with your hands until they have been washed. Even a quick touch to your eyes, nose, or mouth with contaminated hands is sufficient for transmitting organisms that cause a disease.

Sanitation practice of facility equipment and materials are necessary for preventing the spread of pathogens. Be aware that materials transported out of the facility carry contamination on the surfaces of these items to other areas. Equipment should be sprayed with a disinfectant, shrouded, or autoclaved when it is to be removed from the facilities. Devices that cannot be sanitized and decontaminated should be disposed of. Supplies that are to be taken from one facility or lab to another should be wrapped or placed in containers. The outer surfaces of these enclosures should then be chemically decontaminated.

Place “sharps” into sharps containers, not into the regular trash. Sharps containers are available from the Safety Office. Call the Safety Office for a pick-up (831-7791). The Safety Office pays for disposal.

Non-hazardous Waste and Carcasses

The majority of animal studies conducted at Radford University do not involve hazardous chemicals or infectious agents. Waste bedding can usually be disposed of in the cage-wash area in sealed plastic bags and placed in the appropriate dumpster. Appropriate PPEs should be used by cage-wash staff to minimize their exposure to allergens in the soiled bedding or on caging. Non-hazardous animal carcasses are placed in sealed plastic bags and placed in the designated freezer or cooler in the respective animal facility.

Animal carcasses may go to the landfill provided the animal does not contain infectious agents or hazardous waste. Carcasses may contain small amounts of chemicals as long as the chemical does not meet the definition of a hazardous waste. Investigators should call the Safety Office (831-7791) if they are unsure about whether a chemical is categorized as “hazardous waste.”

Infectious Waste and Carcasses

IACUC-approved protocols involving infectious agents (bacterial, viral, parasitic, or fungal) will specify handling requirements for infectious wastes and infected animal carcasses. All Animal Biosafety Level-3 (ABSL-3) and Select Agent studies require that

contaminated wastes, caging, and animals be sterilized (e.g., by autoclaving) before they are sent for processing in the cage-wash area. Contaminated wastes, caging, and animals should be bagged in hazardous waste bags before transport to the autoclave. The outside of the bag should be sprayed with a chemical disinfectant before it is removed from the animal holding room.

Chemically Contaminated Waste and Carcasses

IACUC-approved protocols involving hazardous chemicals specify handling requirements for contaminated wastes and animal carcasses. In some instances, wastes and carcasses must be bagged and stored in designated barrels.

If you have hazardous waste, call the Safety Office (831-7791) for a pick up. Ensure that materials are stored properly. Do NOT pour hazardous waste down the drain or throw into trash cans. The Safety Office pays for disposal. Consult the Hazardous Waste manual (www.radford.edu/fpc/Safety/services/haz_waste.htm) for further information or call the Safety Office (831-7791).

Radioactive Contaminated Waste and Carcasses

Areas where radioactive materials are used are identified with warning signs. Radford University's Safety Officer establishes procedures for the handling, storage, and disposal of radioactive bedding and animal carcasses. Caging and equipment must be surveyed by the PI for levels of radioactivity, and those items may have to be held for days or weeks before they can be released for processing in the cage-wash area. Radioactive bedding and carcasses may have to be bagged and barreled by the Safety Officer and held in a designated area until the material can be disposed of by an authorized contractor.

The use of radioactive materials must be done in compliance with NRC regulations. Call the Safety Office (831-7791) for further information.

For Radford University general policies on Hazardous Waste, refer to www.radford.edu/fpc/Safety/services/haz_waste.htm

NOTE: This document is based on the Occupational Health and Safety information from the following sources: (1) the Virginia Tech Occupational Health and Safety Program; (2) various health and safety modules from the AALAS Learning Library; and (3) various documents posted on Radford University's safety website. Thanks to all.

Radford University's Occupational Health and Safety Agreement

I have read AND UNDERSTAND the Radford University Occupational Health and Safety Education document.

I agree to follow the recommendations and the warnings contained in the document.

I agree to revisit the document whenever I begin to work with new animal species and/or zoonotic agents.

Further, I agree to inform my primary physician, as well as any other appropriate medical professionals, that I work with research animals when I visit said primary care provider(s).

Pursuant to **29 CFR 1910.1450** *Occupational Exposure to hazardous chemicals in laboratories*, I understand that all employees of Radford University who perform the duties of an animal handler or animal user have the right to exposure monitoring for all regulated substances. In the event of an overexposure; medical surveillance, consultation, and examination by a licensed physician will be provided at no cost to the employee.

Date: _____

Print/Type Name: _____

Signature: _____

Name of Faculty/Supervisor (if you're a student researcher): _____

Please print this page and send the signed Agreement form to the IACUC Administrator, Box 6926, Radford University, Radford, VA 24142.