Molecular Sciences Research Center

Vivarium

University of Puerto Rico

OCCUPATIONAL HEALTH AND SAFETY PROGRAM

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OCCUPATIONAL AND SAFETY PROGRAM
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I. Introduction

A. Each institution must establish and maintain an occupational health and safety program (OHSP) as an essential part of the overall program of animal care and use (CFR 1984 a, b, c; DHHS 2009; PHS 2002). Primary oversight responsibilities in the program rest with the institutional official (IO), the attending veterinarian (AV), and the animal care and use committee (IACUC). The components of this program are based on guidelines in the NIH *Guide for the Care and Use of Laboratory Animals*, the *PHS Policy on Humane Care and Use of Laboratory Animals*, the NRC *Occupational Health and Safety in the Care and Use of Research Animals*, and the CDC/NIH *Biosafety in Microbiological and Biomedical Laboratories*. An occupational health program is mandatory for all personnel who have direct or indirect contact with any live research vertebrate animals or harvested non-human primate tissues, body fluids, or waste.

II. Enrollment Requirements

A. MSRC Employees, Students, Volunteers, or Others Involved in Animal Research

B. This category covers all individuals of the MSRC who have potential exposure to *live vertebrate animals* used in research or teaching within the scope and duty of their activities. Also, all individuals who have potential exposure to human tissues/blood/fluids and/or Non-human Primates tissues/blood/fluids.

C. The supervisor ensures that individuals are formally enrolled in the Occupational Health & Safety Program (OHSP) if listed on an IACUC protocol or if the person will have exposure to *live vertebrate animals only*. The supervisor ensures the individual receives applicable initial trainings, including the AALAS occupational health training as well as unit-specific training. The supervisor is responsible for ensuring that his/her lab staff are enrolled in the Animal Occupational Health Program and complete the Program requirements, including filling out the "MSRC Employee Animal Occupational Health Questionnaire" form.

D. Volunteers must also complete a "Conditions of Volunteer Service" form, submitting copies to Safety & Risk Services and IACUC files. Completed forms must be maintained with the unit.

E. Individuals who enter animal research facilities infrequently and have no direct contact with animals or environmental exposure are not required to fully participate in the OHSP. These individuals should not spend more than a few hours at a time in hallways and animal rooms within the facility and should not spend more than a few minutes in a cagewash area. These individuals should be educated by their supervisor or tour guide on the potential hazards in the facility. Additionally, they will be offered the opportunity to voluntarily enroll and fully participate in the OHSP if they choose.

F. Examples of roles that meet these criteria include: IACUC members, inspectors, visitors, MSRC Police and emergency responders, Safety & Risk Services staff performing safety inspections, and MSRC staff performing minimal facility maintenance.

III. Responsibilities

A. Institutional Official

i. Bears ultimate responsibility for the program; allocates resources necessary for program implementation.

B. Animal Facilities Director

i. Administration of program elements and adherence by personnel. Ensure individuals' compliance and, in conjunction with the IACUC and IO, implement appropriate measures in instances of noncompliance.

ii. Notify EHS of additions or terminations of personnel enrolled in the program.

IV. Animal Occupational Health and Safety Program

A. *Institutional Animal Care and Use Committee*

i. In the case of occupational health and safety issues, the IACUC provides program oversight and evaluation and thereby serves as an advisory body to EHS and Occupational Healthcare Provider.

B. *Principal Investigator/Supervisor*

i. Responsible for the health and safety of all individuals under their supervision and the implementation of this occupational health and safety program.

ii. Assess the specific risks and establish procedures to minimize these risks.

iii. Assure the safe conduct of their experiments employing experimental animals.

iv. Advise EHS of new employees to be enrolled in the Program and departing employees to be terminated from the Program.

v. When training is provided interdepartmentally, coordinate with EHS for review of the training materials and provide EHS access to, or copies of, training records.

C. *Individuals*

i. Attend training sessions prior to accessing animal facilities and understand applicable safety requirements.

ii. Report accidents, injuries, or near misses to supervisors immediately.

iii. Discuss any changes in health status or other medical concerns with a physician.

iv. Adhere to requirements of the program, including attendance at initial occupational health & safety training and completion of applicable program forms/questionnaires.

v. Notify animal facility director and EHS when terminating animal work or changing species.

D. *Occupational Health Services*

i. Provide medical review for enrolled individuals including review of the Occupational Health questionnaire. Initiate physical exam or interview with individual if needed.

ii. Notify EHS and individual departments of clearance for contact with animals.

E. *Environmental Health & Safety*

i. Establish and maintain the occupational health and safety program, which will provide a safe and healthy working environment.

ii. Provide occupational health & safety training or provide guidance for such training when conducted interdepartmentally.

iii. Initiate routing of initial and annual occupational health medical questionnaires to enrolled individuals for submission to _____.

iv. Maintain database of training records and copies of clearance for work involving animals.

F. Control and Prevention Strategies

i. Control of occupational hazards is implemented through standard hierarchy of controls. This means primarily implementing engineering controls whenever possible, followed by administrative and work practice controls, and utilization of personal protective equipment with other controls are infeasible. Examples of engineering controls in place for protecting employees include:

ii. Manipulating animals and cages inside primary containment devices (e.g., biosafety cabinets; cage change stations) whenever possible

iii. Biosafety cabinets, animal transfer stations, and other primary containment devices are certified by NSF-accredited personnel: initially after installation; at least annually thereafter; and anytime units are relocated or moved a distance greater than6 inches

iv. Elimination of sharps, replacement of glass with plastic, and use of safety-engineered sharps devices when available and determined practical from a task standpoint

v. Scavenging of anesthetic gases using exhaust snorkel devices or carbon absorption systems

vi. Adherence to MSRC Chemical Hygiene Plan policy and program requirement

vii. Administrative and work practice controls are implemented secondarily and are trained prior to working in the facility and on an ongoing basis. Examples of these include:

1. Establishing Standard Operating Procedures for commonly performed tasks and review of SOPs on a routine basis
2. Adherence to standard practices as advised in CDC's Biosafety in Microbiological and Biomedical Laboratories, the NIH Guidelines, and Occupational Health and Safety in the Care and Use of Research Animals
3. Implementation of a colony health surveillance program for timely detection of colony outbreaks
4. Routine self-inspections are encouraged within the lab groups, supplemented by EHS and IACUC inspections
5. Personal protective equipment is also implemented, with a baseline set of PPE worn in all animal areas and additional PPE issued per risk assessment. Please refer to the Personal Protective Equipment section of this manual

G. Hazard Identification and Risk Assessment

i. An effective occupational health and safety program ensures that the risks associated with the experimental use of animals are reduced to minimal and acceptable levels. Potential hazards include experimental hazards such as biological agents, chemical agents, radiation, and physical hazards. Other potential hazards – such as animal bites, exposure to allergens, chemical cleaning agents, wet floors, cage washers and other equipment, lifting, ladder use, and zoonoses – that are inherent in or intrinsic to animal use should be identified and evaluated. Once potential hazards have been identified, a critical ongoing assessment of the associated risks should be conducted to determine appropriate strategies to minimize or manage the risks. The extent and level of participation of personnel in the occupational health and safety program should be based on the hazards posed by the animals and materials used; the exposure intensity, duration, and frequency; to some extent, the susceptibility of the personnel; and on the history of occupational illness and injury in the workplace" (*The Guide*; 8th edition, pp. 18-19)

ii. The MSRC's Occupational Health and Safety Program is designed to inform anyone who works with or around animals about confirmed and

potential hazards associated with animal exposure. Multiple methods of hazard identification and risk assessment are implemented to accomplish this:

iii. *Registration of Experimental Protocols*

1. Work involving the care and use of animals must be reviewed and approved by the IACUC prior to initiation. A form is submitted by the Principal Investigator detailing the experimental design and performing the first step of identifying and assessing risks involved. If the work involves recombinant or synthetic nucleic acids or transgenic animals, a similar project registration is submitted, reviewed and approved by the Institutional Biosafety Committee, with a preliminary risk assessment performed at this step as well. Use of radioactive materials must also be reviewed and approved by EHS and the Radiation Safety Committee, and users must be thoroughly trained prior to accessing radioactive materials. If the animal research involves hazardous or regulated chemicals, the PI must submit to EHS a Request to Use Hazardous Substances in Live Vertebrate Animals, which prompts risk assessment and implementation of mitigation measures for use with these materials.

iv. *Routine inspections*

1. Animal housing facilities and laboratories are inspected on a semi-annual or annual basis by the IACUC to identify physical, chemical, and other hazards, and to assess compliance with applicable guidelines. The EHS office audits animal laboratories subject to chemical and biological regulatory requirements; it is also responsible for assessing noise, ergonomics, allergens, and other occupational safety hazards. Additionally, PIs and lab staff are expected to conduct periodic self-audits to continually monitor for hazards and initiate corrective actions to address them.

v. *Education*

1. Prior to initiating work with animals or receiving access to the animal facilities, researchers and staff must undergo training on occupational hazards. Individuals are taught to take proactive

actions to discuss concerns with physicians or their principal investigator, notify their employer of changes in health status, follow procedures, and use good hygiene when conducting animal work.

vi. *Employee involvement*

1. Employees are encouraged to speak up if they identify a hazard that needs to be addressed. By conducting periodic self-audits, they are given opportunities to assess their work areas for hazards.

2. Postdoctoral researchers and laboratory technicians are involved in formal lab inspections, are requested to participate in completion of research registration protocols and are encouraged to serve on the IACUC and IBC to play an active role in identifying and assessing risks.

vii. Training

1. Supervisors must ensure that animal care, laboratory and support personnel receive appropriate training regarding their duties, animal husbandry procedures, potential hazards, manipulations of infectious agents, necessary precautions to prevent exposures, and hazard/ exposure evaluation procedures (physical hazards, splashes, aerosolization, etc.). Personnel must receive periodic updates and additional training when procedures or policies change.

2. EHS professionals provide guidance on the use of biological, chemical, radiological, and physical agents. Individuals enrolled in the program are educated on potential hazards (e.g., zoonoses that may or may not be present) in addition to confirmed hazards (e.g., allergens). OHP training contains information on general and species-specific hazards. This training is required for animal users and support staff, and optional for all other individuals. Records are maintained for all hazard evaluations, employee training sessions and attendance.

3. The occupational health physician reviews all medical health questionnaires prior to work with animals and on an ongoing basis, which is currently defined as every three years. Medical conditions that may predispose the individual to allergic reactions, infectious diseases, or other physical disabilities may be discussed with the individual. After completing the health questionnaire, the physician makes a recommendation whether the individual's health or the health of any animal would be compromised by the individual working with animals. This clearance is provided to the individual, animal facility director, and EHS.

H. Personal Hygiene

i. A strict policy of PPE use is implemented in animal facilities. Individuals who do not routinely enter these areas should be escorted by a knowledgeable person who can assist in donning and doffing PPE and advise on traffic flow and areas with entry requirements. Sinks, paper towels, and soap are in almost all the animal rooms. Showers are available 7th Floor of the MSRC. Animal caretakers are required to change into clean uniforms (scrubs) before starting work. At the end of the workday, caretakers are required to change and put their uniforms into a hamper. Dirty scrubs and other PPE are not permitted to be taken out of the facility. Work clothes are not allowed to be worn outside the facility, unless they put on a separate lab coat.

ii. Long hair must be pulled back and contained. Beards or facial hair must be following proper use of respirators if respirators are required for assigned tasks.

iii. Employees are required to wash their hands after handling animals, after leaving the animal facility, after doffing PPE, and in other necessary instances.

iv. Eating, drinking, and applying of cosmetics are not allowed in any of the animal quarters. Food must be stored outside of the laboratory in cabinets or refrigerators designed and used for this purpose. The MSRC provides a lounge area and kitchen for eating and drinking. The lounge/kitchen areas are on the 7th Floor, room 703. Smoking or use of tobacco products is prohibited in the vivarium and around the MSRC building.

V. Animal Experimentation Involving Hazards/ Human products /NHP products

A. Description of Institutional Policies

i. Any proposed animal use applications involving hazardous agents are reviewed by the IACUC. The animal use application requests a description of animal experimentation involving hazardous agents, including "infectious agents, biohazards, carcinogens, toxic chemicals, human products, or radioisotopes." It is the PI's responsibility to disclose whether their work requires approval by another entity or oversight committee upon submission of an IACUC application. If hazardous agents are being used, prior authorization from the appropriate committee or office must be provided by the PI. Formal safety programs assess the hazards, determine the safeguards needed for their control, and establish that the facilities are adequate for the safe conduct of the research. Work must be conducted in compliance with the EHS and the MSRC Chemical Hygiene Plan.

B. Description of Oversight Process and Husbandry Practices

i. The PI is responsible for appropriate use of hazardous agents in his/her animal research. Each room or area involving a hazardous agent is posted with a warning sign and specific instructions to follow to ensure personnel safety. The instructions specify who is allowed to enter the area, how to work with the hazardous agent and the animals involved, and disposal and decontamination of supplies. Autoclaves are available for decontamination. Work involving chemical, radiological, and/or biological hazards require consultation from relevant EHS staff as well as IBC or Radiation Safety Committee approval when applicable.

C. Containment of Hazardous Agents

i. Each hazardous agent is evaluated on a case-by-case basis for proper containment procedures. Adequate protective clothing, designated hazard areas or rooms, limited access to these areas, good personal hygiene practices, decontamination of work surfaces and materials, microisolator caging, and HEPA filtered isolators are all utilized following CDC guidelines.

D. Scavenging of Anesthetic Gases

i. In the MSRC Procedure room, anesthetic gases are scavenged through a 100% exhaust system with the line from the anesthesia machine connected directly to the machine exhaust system. In procedure rooms, gases are scavenged through 100% exhaust systems.

VI. Bites and Scratches

i. First Aid and Procedures of Animal Bite or Scratch Injuries

- As soon as practicable after the injury has occurred, wash the wound and surrounding area with soap and water, followed by 70% ethanol or an iodine containing solution.
- Allow the wound to bleed freely for at least 5 minutes (at least 10 minutes if the wound is extremely dirty). Cover the area with a bandage or sterile gauze.
- If the wound is a deep puncture or you are unsure of its seriousness, seek prompt medical attention. Bring your health card with you if you have it on hand, but do not delay treatment if you do not have your health card.
- Notify your supervisor as soon as possible. The supervisor will conduct risk stratification, e.g., obtain pathogen or safety data sheet if applicable. Supervisor begins investigation into how to prevent reoccurrence.
- The injury must be reported within 24 hours through the specific form's incident/accident (MSRC-038/ MSRC-039), select the appropriate reporting.
- Observe the wound for several days. If there are any signs of infection, symptoms persist (redness, swelling, drainage, worsening pain,), seek professional medical care.

ii. Lab Animals (Vivarium or a Research / Teaching Lab)

- Specific pathogen free (SPF)* lab animals that have <u>not</u> been intentionally infected with a biological or chemical agent (e.g., animals

from commercial vendors): Bites or scratches from these animals do not usually cause infection unless the bite is very deep.

- SPF lab animals that <u>have</u> been intentionally infected with a biological or chemical agent: Bites from these animals could potentially cause infection or other adverse health effects, depending on the hazardous agent that that animal was intentionally exposed with.

- Non-SPF lab animals: Where the health status of animals may not be known, these animals may harbor infectious diseases that could be transferred to humans (zoonoses) through bites or scratches. If the bite/scratch occurred in the vivarium or a research/teaching lab, notify both your supervisor and the vivarium manager.

*'SPF' refers to animals of known health status that are often maintained free of infectious organisms that have potential to cause significant human disease (zoonoses).

B. Employees should be properly trained in handling and general restraint techniques of the species to which they are assigned.

C. Should a bite, scratch or any other injury occur during working with laboratory animals, medical treatment is available by calling 911 for immediate life-threatening conditions, or for minor injuries, by calling _____ to arrange for transportation to a local health care provider.

i. Regardless of the severity of a bite or scratch, the incident should be reported to their supervisor and documented in the "Bite/Scratch Log." Employees should also submit a Safety Incident or Accident Report (SIAR) to Safety & Risk Services.

VII. Allergens

A. One of the most common health concerns in the laboratory animal setting is a work-associated allergy. The risk of developing an allergy depends on parameters such as species, facility, ventilation, and the employee's "baseline" health status. Symptoms of allergic reaction vary depending on the severity of the reaction.

VIII. Zoonoses

A. Zoonotic diseases are those that can be transmitted from animals to humans. As an individual working with animals, staff should be familiar with the specific

zoonotic diseases associated with the animals that they work with and are encouraged to notify their personal physician of the animals they routinely have contact with. Animal work involving Risk Group 2 agents and higher must be reviewed by the IBC. The Principal Investigator is responsible for training staff on specific hazards associated with their work. The Biosafety Officer is available as a resource for developing this training.

IX. Inherent Hazards

A. These are some potential hazards inherent in any work environment. These include poor ergonomics, slips and falls, electrical safety hazards and many more. Concerns or questions about specific work areas should be directed to Safety & Risk Services.

X. Facilities, Procedures, and Monitoring

A. At a minimum, animal facilities adhere to criteria described in the MSRC PHS Assurance. Facilities are separated from the general traffic patterns of buildings and are restricted as appropriate. Prior to entry, personnel must have specific training in animal facility procedures and must be supervised by an individual with adequate knowledge of potential hazards and experimental animal procedures.

B. Facilities

i. The animal facility is separated from areas that are open to unrestricted personnel traffic within the building. External facility doors are self-closing and self-locking. Access to the animal facility is restricted. Doors to areas where infectious materials and/or animals are housed, open inward, are self-closing, are kept closed when experimental animals are present, and should never be propped open.

ii. The animal facility has sinks for hand washing. Sink traps are filled with water, and/or appropriate liquid to prevent the migration of vermin and gases.

iii. The animal facility is designed, constructed, and maintained to facilitate cleaning and housekeeping. The interior surfaces (walls, floors and ceilings) are water resistant. Floors must be slip resistant, impervious to

liquids, and resistant to chemicals. It is recommended that penetrations in floors, walls and ceiling surfaces be sealed, including openings around ducts, doors and doorframes, to facilitate pest control and proper cleaning.

iv. Cabinets and bench tops must be impervious to water and resistant to heat, organic solvents, acids, alkalis, and other chemicals. Spaces between benches, cabinets, and equipment should be accessible for cleaning. Chairs used in animal area must be covered with a non-porous material that can be easily cleaned and decontaminated. Furniture is designed to be capable of supporting anticipated loads and uses. Sharp edges and corners are avoided.

v. External windows are avoided when possible; if present, windows are sealed and resistant to breakage. If the animal facility has windows that open, they are fitted with fly screens.

vi. Ventilation is provided in accordance with the Guide for Care and Use of Laboratory Animals, including inward directional airflow.

vii. Internal facility appurtenances, such as light fixtures, air ducts, and utility pipes, are arranged to minimize horizontal surface areas to facilitate cleaning and minimize the accumulation of debris or fomites.

viii. Floor drain traps are filled with water, and/or appropriate disinfectant to prevent the migration of vermin and gases.

ix. Cages are washed manually or in a mechanical cage washer. The mechanical cage washer has a final rinse temperature of at least 180°F. If manual cage washing is utilized, appropriate disinfectants are utilized.

x. Illumination is adequate for all activities, avoiding reflections and glare that could impede vision.

xi. Emergency eyewash and shower are readily available in locations determined necessary by presence of eye and skin hazards, and in consultation with EHS (See Attachment____ for eye wash stations).

C. Procedures

i. The animal facility director establishes and enforces policies, procedures, and protocols for institutional policies and emergencies. The PI assures

that worker safety and health concerns are addressed as part of the animal protocol review. Prior to beginning a study, animal protocols must also be reviewed and approved by the IACUC and IBC (when applicable).

ii. Safety-related SOPs specific to the animal facility are prepared or adopted in consultation with the animal facility director and appropriate safety professionals. These SOPs are available and accessible MSRC website and are used for training. Personnel are advised of potential hazards and are required to read and follow instructions on practices and procedures.

iii. An appropriate medical surveillance program is in place, as described in the applicable section of this manual.

iv. A sign incorporating safety information must be posted at the entrance to the areas where infectious materials and/or animals are housed or are manipulated. The sign must include the animal biosafety level, general occupational health requirements, personal protective equipment requirements, the supervisor's name (or other responsible personnel), telephone number, and required procedures for entering and exiting the animal areas. Identification of specific infectious agents is generally included on signage, within an animal room.

v. Access to the animal room is limited. Only those persons required for program or support purposes are authorized to enter the facility. All persons including facility personnel, service workers, and visitors are advised of the potential hazards (natural or research pathogens, allergens, etc.) and are instructed on the appropriate safeguards.

vi. PPE is to be worn as directed, as detailed in the applicable section of this manual.

vii. All procedures are carefully performed to minimize the creation of aerosols or splatters of infectious materials and waste. Engineering controls such as fume hoods, biological safety cabinets, and cage change stations should be utilized whenever possible.

viii. Mouth pipetting is prohibited. Mechanical pipetting devices must be used.

1. Policies for the safe handling of sharps, such as needles, scalpels, pipettes, and broken glassware must be developed and

implemented. When applicable, laboratory supervisors should adopt improved engineering and work practice controls that reduce the risk of sharps injuries. Precautions, including those listed below, must always be taken with sharp items. These include:

2. Use of needles and syringes or other sharp instruments in the animal facility is limited to situations where there is no alternative for such procedures as parenteral injection, blood collection, or aspiration of fluids from laboratory animals and diaphragm bottles.

3. Disposable needles must not be bent, sheared, broken, recapped, removed from disposable syringes, or otherwise manipulated by hand before disposal. Used disposable needles must be carefully placed in puncture-resistant containers used for sharps disposal. Sharps containers should be located as close to the work site as possible.

4. Non-disposable sharps must be placed in a hard-walled container for transport to a processing area for decontamination, preferably by autoclaving.

5. Broken glassware must not be handled directly. Instead, it must be removed using a brush and dustpan, tongs, or forceps. Plastic ware should be substituted for glassware whenever possible.

6. Equipment containing sharp edges and corners should be avoided.

7. Equipment and work surfaces are routinely decontaminated with an appropriate disinfectant after work with an infectious agent, and after any spills, splashes, or other overt contamination.

8. Animals and plants not associated with the work being performed must not be permitted in the areas where infectious materials and/ or animals are housed or are manipulated.

9. An effective integrated pest management program under Terminix company is implemented (See SOP-018 for pest control).

10. All waste from the animal room (including animal tissues, carcasses, and bedding) is transported from the animal room in leak-proof, covered containers for appropriate disposal in

compliance with applicable institutional, local and state requirements. All potentially infectious materials are decontaminated before disposal using an effective method. The company in charge of biohazardous waste is Conwaste and it is managed under SOP 1011 Manejo de Desperdicios Biomédicos Regulados.

ix. Monitoring

1. Appropriate methods are in place for assessing and monitoring exposure to potentially hazardous biologic, chemical, and physical agents where required (e.g., ionizing radiation) or where the possibility of exceeding the permissible exposure limits exists.

2. The radiation safety officer issues monitoring devices and manages employee exposure to radioactive materials. The laboratory safety group within EHS addresses exposure to isoflurane and implementation of scavenging equipment to minimize potential for exposure. Employees are questioned about potential exposures to biologic agents as part of the annual health review process (e.g., have they had any bites or scratches; have they contracted a disease from an animal; have they had any serious injuries or hospitalizations in the last year). The presence of physical hazards is routinely assessed during regular work duties as well as during routine facility inspections.

x. Personal Protective Equipment

1. For work with rodents:

a. Protective laboratory coats, gowns, or uniforms are worn to prevent contamination of the animals and personal clothing. Uniforms (scrubs) will be always worn by MSRC animal care personnel while in the vivarium. All other personnel will wear lab coats or tie-back gowns. Uniforms will not be worn outside of the animal facility; in which case a disposable gown is worn over the uniform while outside the vivarium. If the individual leaves the facility for any other reason he or she will change into street clothes and will put on a clean uniform upon returning to work. Scrubs and

reusable lab coats are laundered by a contracted service _____and are not allowed to be taken home.

b. Appropriate protective clothing will be worn in all areas where designated so in the standard operating procedure (e.g., cage washer, radioactive rooms, etc.). Gloves are worn to prevent skin contact with contaminated, infectious and hazardous materials, and when handling animals. At a minimum, protective equipment required to enter the facility consists of a disposable tie-back gown and shoe covers. When entering animal rooms, nitrile gloves (or alternative), hair cover, and a surgical mask must be done.

c. N95 must be used for tasks involving contact with soiled bedding (such as emptying dirty cages in the dump station). Respirators will be used when working with hazardous chemicals or biological materials such as filling isoflurane vaporizers. These individuals will be enrolled in the MSRC respiratory protection program, to include initial and annual training, medical evaluation for pulmonary function, and fit testing for a suitable respirator. All staff are offered the option of voluntary N95 always use.

d. Depending on the task, additional PPE may be indicated, including but not limited to:

   i. Safety glasses (where ocular hazards exist, e.g., cagewash area)
   ii. Ear protection
   iii. Face shield
   iv. Safety glasses or goggles
   v. Steel-toed boots
   vi. Acid resistant gloves
   vii. Autoclave gloves
   viii. Acid resistant plastic aprons
   ix. Bite-resistant gloves

e. Gloves and personal protective equipment are removed in a manner that minimizes transfer of infectious materials outside of the areas where infectious materials and/or

animals are housed or are manipulated. Persons must wash their hands after removing gloves, and before leaving the areas where infectious materials and/or animals are housed or are manipulated.

f. Laboratory PPE (lab coat, safety glasses, appropriate gloves) is mandatory when handling ethidium bromide (EtBr), a potential carcinogen used to detect DNA in electrophoretic analysis. Similarly, PPE is required when acids, bases, and flammables are handled in the laboratory.

i. Personnel using respirators must be enrolled in the MSRC Respiratory Protection Program. A pre-employment physical examination and/or health history is required for all new personnel with animal contact or exposure. Pre-employment tests may be indicated.

g. An allergy prevention program is an important part of medical surveillance in an animal facility. Individuals with a history of allergies (to animal dander, saliva, urine) will be allowed access to animal facilities with a physician's approval. **Triennially**, each employee must submit an Occupational Health Program Questionnaire (See attachment I- MSRC-046) for review by the Occupational Healthcare Provider to continue to participate in the Occupational Health Program.

xi. Medical Evaluation and Preventive Medicine

1. Applicable immunizations for the MSRC animal program may include:

i. Tetanus toxoid (recommended for all personnel every ten years)
ii. COVID-19 Vaccine
iii. Tuberculin skin testing annually
iv. Prophylactic vaccinations when research is being conducted on infectious diseases for which vaccines are available

v. Influenza

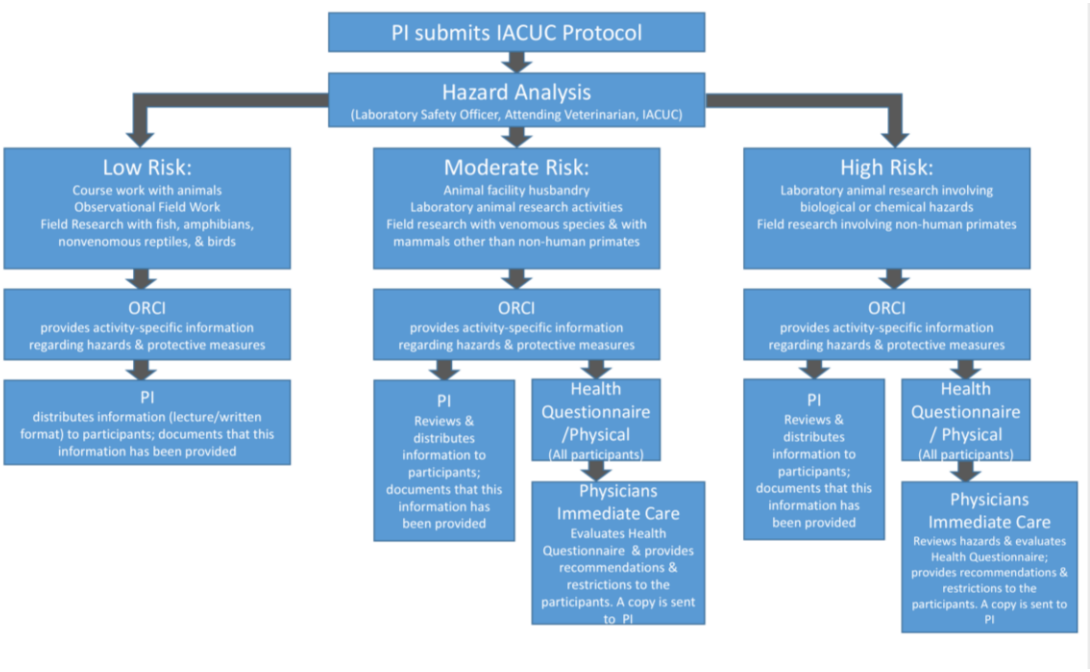
2. The results of any tests or exams performed will be confidential. Only the results of any tests or exams indicated on the checklist form that relate specifically to your work with animals will be submitted to the University. Medical records will only be maintained at the MSRC.

3. Radiation dosimetry must be worn by personnel meeting the criteria described in MSRC Radiation Safety Manual when working with ionizing radiation. Contact EHS for determination of proper dosimetry, necessary training, and authorization.

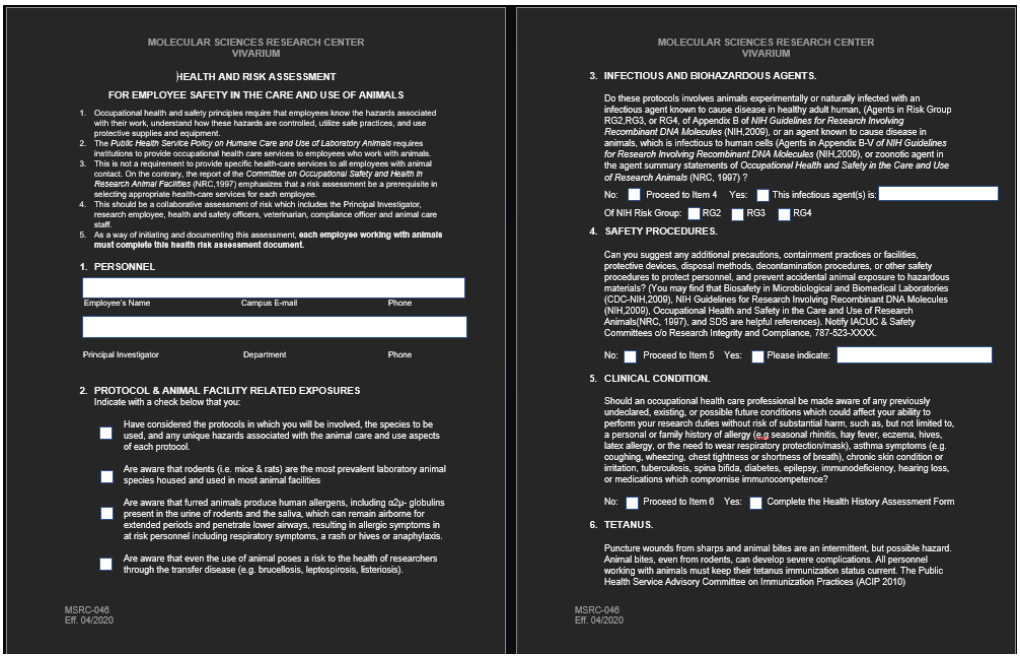
4. In the event of a job-related injury or illness, individuals are trained to administer first aid as applicable and report the incident to a supervisor immediately. The person should be referred to a medical professional for evaluation. They should complete and submit a Workplace Injury Report (WIR) (See Attachment _____) to Safety & Risk Services as soon as possible to initiate an incident investigation.

References

1. Oregon OHP- Animal Occupational Health and Safety Program Manual https://safety.uoregon.edu ›



Attachment 1- Medical Health Questionnaire



MOLECULAR SCIENCES RESEARCH CENTER
VIVARIUM

HEALTH AND RISK ASSESSMENT

FOR EMPLOYEE SAFETY IN THE CARE AND USE OF ANIMALS

1. Occupational health and safety principles require that employees know the hazards associated with their work, understand how these hazards are controlled, utilize safe practices, and use protective supplies and equipment.
2. The *Public Health Service Policy on Humane Care and Use of Laboratory Animals* requires institutions to provide occupational health care services to employees who work with animals.
3. This is not a requirement to provide specific health-care services to all employees with animal contact. On the contrary, the report of the *Committee on Occupational Safety and Health in Research Animal Facilities* (NRC,1997) emphasizes that a risk assessment be a prerequisite in selecting appropriate health-care services for each employee.
4. This should be a collaborative assessment of risk which includes the Principal Investigator, research employee, health and safety officers, veterinarian, compliance officer and animal care staff.
5. As a way of initiating and documenting this assessment, **each employee working with animals must complete this health risk assessment document.**

1. PERSONNEL

Employee's Name | Campus E-mail | Phone

Principal Investigator | Department | Phone

2. PROTOCOL & ANIMAL FACILITY RELATED EXPOSURES
Indicate with a check below that you:

- ☐ Have considered the protocols in which you will be involved, the species to be used, and any unique hazards associated with the animal care and use aspects of each protocol.
- ☐ Are aware that rodents (i.e. mice & rats) are the most prevalent laboratory animal species housed and used in most animal facilities
- ☐ Are aware that furred animals produce human allergens, including α2μ- globulins present in the urine of rodents and the saliva, which can remain airborne for extended periods and penetrate lower airways, resulting in allergic symptoms in at risk personnel including respiratory symptoms, a rash or hives or anaphylaxis.
- ☐ Are aware that even the use of animal poses a risk to the health of researchers through the transfer disease (e.g. brucellosis, leptospirosis, listeriosis).

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3. INFECTIOUS AND BIOHAZARDOUS AGENTS.

Do these protocols involves animals experimentally or naturally infected with an infectious agent known to cause disease in healthy adult human, (Agents in Risk Group RG2,RG3, or RG4, of Appendix B of *NIH Guidelines for Research Involving Recombinant DNA Molecules* (NIH,2009), or an agent known to cause disease in animals, which is infectious to human cells (Agents in Appendix B-V *of NIH Guidelines for Research Involving Recombinant DNA Molecules* (NIH,2009), or zoonotic agent in the agent summary statements of *Occupational Health and Safety in the Care and Use of Research Animals* (NRC, 1997) ?

No: ☐ Proceed to Item 4 Yes: ☐ This infectious agent(s) is:

Of NIH Risk Group: ☐ RG2 ☐ RG3 ☐ RG4

4. SAFETY PROCEDURES.

Can you suggest any additional precautions, containment practices or facilities, protective devices, disposal methods, decontamination procedures, or other safety procedures to protect personnel, and prevent accidental animal exposure to hazardous materials? (You may find that Biosafety in Microbiological and Biomedical Laboratories (CDC-NIH,2009), NIH Guidelines for Research Involving Recombinant DNA Molecules (NIH,2009), Occupational Health and Safety in the Care and Use of Research Animals(NRC, 1997), and SDS are helpful references). Notify IACUC & Safety Committees c/o Research Integrity and Compliance, 787-823-XXXX.

No: ☐ Proceed to Item 5 Yes: ☐ Please indicate:

5. CLINICAL CONDITION.

Should an occupational health care professional be made aware of any previously undeclared, existing, or possible future conditions which could affect your ability to perform your research duties without risk of substantial harm, such as, but not limited to, a personal or family history of allergy (e.g seasonal rhinitis, hay fever, eczema, hives, latex allergy, or the need to wear respiratory protection/mask), asthma symptoms (e.g. coughing, wheezing, chest tightness or shortness of breath), chronic skin condition or irritation, tuberculosis, spina bifida, diabetes, epilepsy, immunodeficiency, hearing loss, or medications which compromise immunocompetence?

No: ☐ Proceed to Item 6 Yes: ☐ Complete the Health History Assessment Form

6. TETANUS.

Puncture wounds from sharps and animal bites are an intermittent, but possible hazard. Animal bites, even from rodents, can develop severe complications. All personnel working with animals must keep their tetanus immunization status current. The Public Health Service Advisory Committee on Immunization Practices (ACIP 2010)

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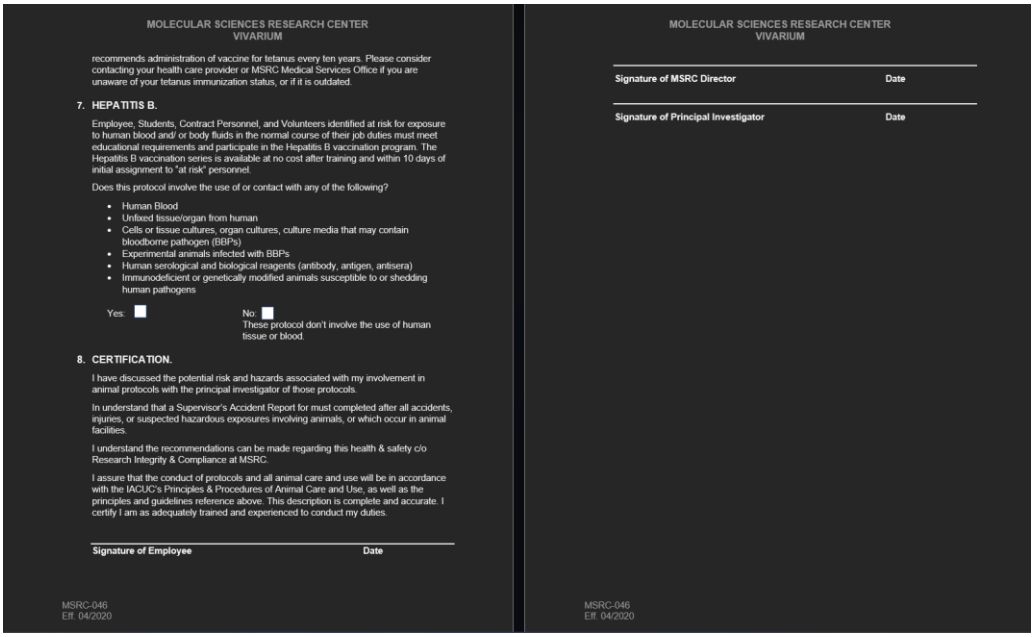

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recommends administration of vaccine for tetanus every ten years. Please consider contacting your health care provider or MSRC Medical Services Office if you are unaware of your tetanus immunization status, or if it is outdated.

7. HEPATITIS B.

Employee, Students, Contract Personnel, and Volunteers identified at risk for exposure to human blood and/ or body fluids in the normal course of their job duties must meet educational requirements and participate in the Hepatitis B vaccination program. The Hepatitis B vaccination series is available at no cost after training and within 10 days of initial assignment to "at risk" personnel.

Does this protocol involve the use of or contact with any of the following?

- Human Blood
- Unfixed tissue/organ from human
- Cells or tissue cultures, organ cultures, culture media that may contain bloodborne pathogen (BBPs)
- Experimental animals infected with BBPs
- Human serological and biological reagents (antibody, antigen, antisera)
- Immunodeficient or genetically modified animals susceptible to or shedding human pathogens

Yes: ☐ No: ☐ These protocol don't involve the use of human tissue or blood.

8. CERTIFICATION.

I have discussed the potential risk and hazards associated with my involvement in animal protocols with the principal investigator of those protocols.

In understand that a Supervisor's Accident Report for must completed after all accidents, injuries, or suspected hazardous exposures involving animals, or which occur in animal facilities.

I understand the recommendations can be made regarding this health & safety c/o Research Integrity & Compliance at MSRC.

I assure that the conduct of protocols and all animal care and use will be in accordance with the IACUC's Principles & Procedures of Animal Care and Use, as well as the principles and guidelines reference above. This description is complete and accurate. I certify I am as adequately trained and experienced to conduct my duties.

Signature of Employee **Date**

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Signature of MSRC Director **Date**

Signature of Principal Investigator **Date**

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Attachment II- Employee Accident or Injury Information

Employee Accident or Injury Information

Part 1 – Employee Information

Name: *(first, last)*

Home Address:

Home Phone: ( )

Work Status: *(Circle)* Part-time Full-time

Usual Work Days: *(e.g. Mon – Fri)*

Usual Work Hours: *(e.g. 7 a.m. – 3 p.m.)*

Date of Birth:

Gender:

Person Number:

Job Title:

Supervisor's Name:

Department:

Department Address:

Part 2 – Incident Details

Date and Time of Incident:	**Date and Time Supervisor Notified:**
Where Did the Incident Happen? *(Bldg, Room, Parking Lot #)*	**Time Lost?**
Nature of the Incident: *(Circle all that apply)* Abrasion Bite Bruise Burn Cut Dislocation Fracture Laceration Sprain Needlestick Other:	**Names of Witnesses:**
What Was the Employee Doing? *(Be specific)*	**Body Part(s) Affected:** *(Circle all that apply)* Right-side Left-side Abdomen Ankle Back Chest Ear Elbow Eye Face Finger Foot Forearm Hand Head Knee Leg Mouth Nose Shoulder Teeth Wrist Other:
How Did the Injury Occur?	**What Harmed the Employee?** *(e.g concrete floor, chlorine, radial arm saw)*
Medical Treatment Provided By:	**Name of Medical Service:**
Medical Treatment Date:	**MSRC Injury Number:**

Part 3 – Certification

I certify that the above information is correct:

Employee Signature *Date*

Email form to: marcevet08@gmail.com, luisa.fernandez@upr.edu, manuel.carrion@upr.edu

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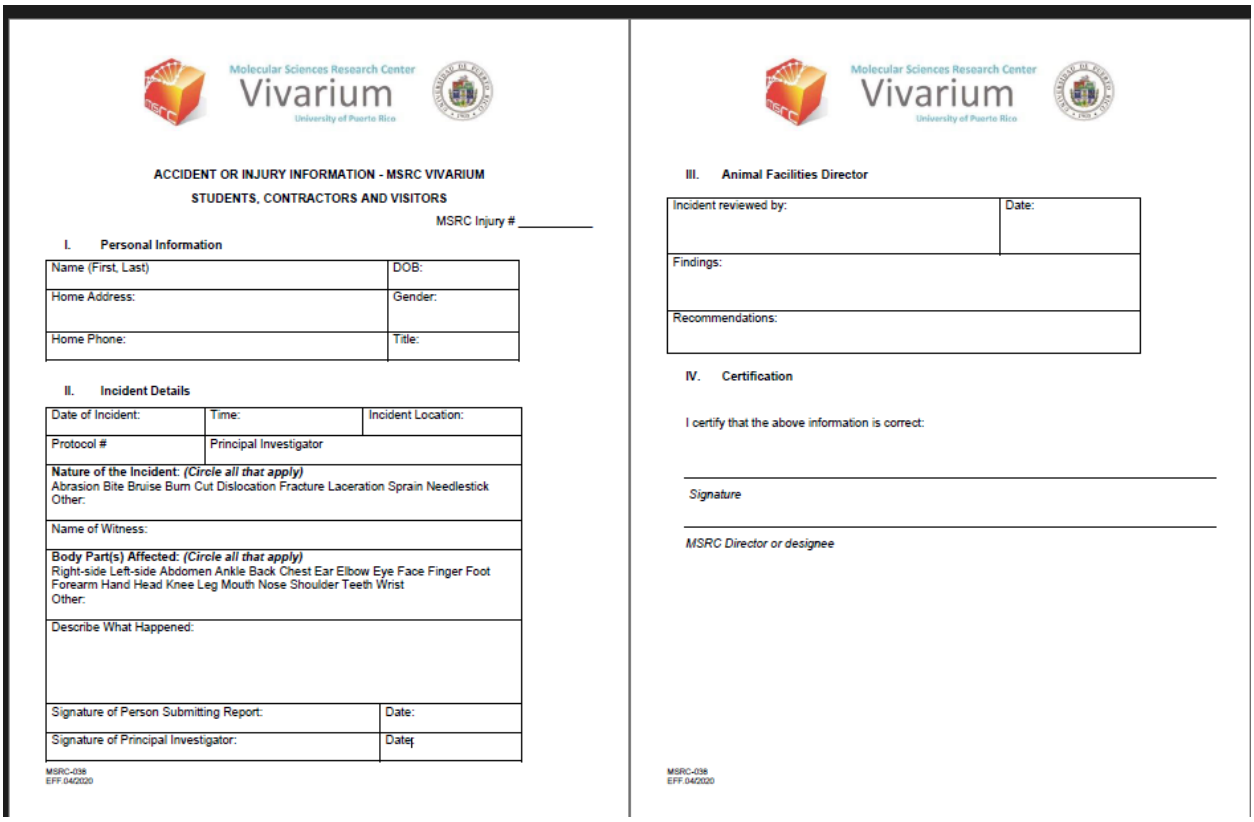
Attachment III- Accident or Injury Information- Students, Contractors and Visitors



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ACCIDENT OR INJURY INFORMATION - MSRC VIVARIUM

STUDENTS, CONTRACTORS AND VISITORS

MSRC Injury # _____

I. Personal Information

Name (First, Last)	DOB:
Home Address:	Gender:
Home Phone:	Title:

II. Incident Details

Date of Incident:	Time:	Incident Location:
Protocol #	Principal Investigator	
Nature of the Incident: ***(Circle all that apply)*** Abrasion Bite Bruise Burn Cut Dislocation Fracture Laceration Sprain Needlestick Other:		
Name of Witness:		
Body Part(s) Affected: ***(Circle all that apply)*** Right-side Left-side Abdomen Ankle Back Chest Ear Elbow Eye Face Finger Foot Forearm Hand Head Knee Leg Mouth Nose Shoulder Teeth Wrist Other:		
Describe What Happened:		
Signature of Person Submitting Report:	Date:	
Signature of Principal Investigator:	Date:	

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III. Animal Facilities Director

Incident reviewed by:	Date:
Findings:	
Recommendations:	

IV. Certification

I certify that the above information is correct:

_____

Signature

_____

MSRC Director or designee

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