This Program is issued jointly by the University of Michigan Office of Research and the Department of Environment, Safety & Health to provide guidance and consistency in management of the health and safety program for animal handlers. Refer to Appendix F for the Animal Handler Program Instructional Flow Chart.

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**Attachments**

- Appendix A: EHS Standard of Care: Ventilation Controls
- Appendix B: Inspection Criteria for Animal Use Site Safety Visits
- Appendix C: First Aid for Bites or Scratches from Research Animals
- Appendix D: Informational Resources for Animal Handlers
- Appendix E: Personal Protective Clothing for Animal Care and Use
- Appendix F: Animal Handler Program Instructional Flow Chart
- Appendix G: Medical Surveillance Questionnaire

**SUMMARY:**

Employees who care for and use animals in research face several occupational health and safety risks, including the possibility of allergic reactions, animal related injuries such as bites or kicks, zoonoses (diseases that spread from animals to humans), and exposure to hazardous materials. The University of Michigan is committed to compliance with all applicable federal and state laws and standards concerning occupational exposure to research activities. Requirements for an occupational health and safety program for personnel working with laboratory animals are outlined in various federal publications. A
description of this occupational health program must be included in the Assurance of Compliance that is required by the National Institutes of Health Office of Laboratory Animal Welfare. Triennial inspections are conducted by the Association for the Assessment and Accreditation of Laboratory Animal Care, International to assure compliance with applicable occupational health and safety standards.

Under guidelines outlined in the publication *Occupational Health and Safety in the Care and Use of Research Animals*, the occupational health and safety program components should include: hazard identification and risk assessment; personnel training; personal hygiene; facilities, procedures, and monitoring; personal protection; and medical evaluation and preventive medicine. “A truly successful program, however, will ultimately depend on the participation of all employees whose work might affect occupational health and safety – their own, their colleagues, their subordinates, or their co-workers. Thus, protecting the health and safety of employees engaged in the care and use of research animals is a cooperative enterprise that requires the active participation of institutional officials, scientists who plan and carry out research involving experimental animals, persons responsible for the management of animal care and use programs, health and safety professionals, and the individual employees themselves who must share the responsibility both for their own health and safety and for the health and safety of those around them.”

To further emphasize this principal, University of Michigan Standard Practice Guide 605.01 states “Every faculty member and person in a supervisory position is responsible for maintaining conditions which will provide for the safety, well-being and safe conduct of all people who report to him/her or who frequent his/her area. Faculty and supervisors should ensure their students and staff members are aware of the importance of safety; maintain safe working conditions; and set examples of safe conduct. Everyone is required to observe established safety principles and procedures.”

The goal of this Program is to establish the responsibilities and methods to identify the hazards associated with the care and use of animals, assess the risk(s) associated with those hazards, and eliminate or manage those risks. The overall management of the animal care and use program on the University of Michigan campus is the responsibility of the Institutional Animal Care and Use Committee (IACUC). Fulfillment of the occupational health and safety administrative requirements are the responsibility of Environment, Health & Safety (EHS). The responsibility for operating research facilities and handling animals in a safe manner is the responsibility of every individual in the program.

SCOPE:

This program applies to all faculty, staff, students, and other affiliates who have direct contact with animals; direct contact with non-sanitized animal caging or enclosures; direct contact with non-fixed or non-sterilized animal tissues, fluids, or wastes; who provide service support to animal equipment, devices, or facilities; or provide compliance review services. The species of animals and associated hazards that will be encountered in the workplace determine what type of health assessment and safety training each employee will receive. This program covers information from hazard identification to risk assessment to control of operations to the occupational medicine program for monitoring personnel.
REFERENCE DOCUMENTS:  
The following documents provide guidance, rules, and regulations that govern the operation of the occupational health and safety program for animal handlers.

- *Hazardous Work in Laboratories* rule R325.70101 to R325.70114 of Act 154 Michigan Occupational Safety and Health Act (MIOSHA)
- *Biosafety in Microbiological and Biomedical Laboratories 5th Edition*, published by the Centers for Disease Control and Prevention and the National Institutes for Health.
- *Code of Federal Regulations, PART 20—STANDARDS FOR PROTECTION AGAINST RADIATION* Title 10, Part 20
- *Public Health Service Policy on Humane Care and Use of Laboratory Animals Guide for the Care and Use of Laboratory Animals*, published by the Office of Lab Animal Welfare, NIH.
- *Guide for the Care and Use of Laboratory Animals*, published by National Research Council

DEFINITIONS:  
*Association for the Assessment and Accreditation of Laboratory Animal Care, International* (AAALAC) is the agency who audits the University operations on a triennial schedule to ensure proper health and safety procedures are in place and being followed. This aspect is one part of the accreditation process provided by AAALAC.

*Biosafety Manual* and *Exposure Control Plan* are written laboratory specific documents that set forth policies and procedures for protecting employees from hazards in laboratories. These laboratory specific plans are the responsibility of the Laboratory Manager, Supervisor, or Laboratory Director (LD).

*Chemical Hygiene Plan* establishes a written program in accordance with the requirements of the Michigan Occupational Safety and Health Act (MIOSHA) Part 431 Hazardous Work in Laboratories Standard R 325-70100. Laboratories must complete the mandatory supplement to the Chemical Hygiene Plan (Blue Binder).

*Institutional Biosafety Committee* (IBC) is the University of Michigan committee that oversees and approves recombinant DNA and infectious agent research to assure compliance with guidelines for such research.

*Occupational Health Services* (OHS) is an on-campus provider of occupational medical services, a health care field which addresses the prevention of occupationally acquired illnesses and injuries, the early recognition of health alterations due to occupational exposures, and the treatment and management of occupationally acquired injury or illness. It does not function as traditional medicine - where the patient’s medical care is the only focus. It attempts to prevent illness and injuries through Medical Surveillance and provides prompt medical attention to occupational injuries in order to return the employee to a productive work life.
Environment, Health & Safety (EHS) is the University of Michigan department that works to maintain a safe and healthy environment. The Department will survey matters of environmental sanitation, occupational safety, occupational health, and radiation safety; coordinate and assist in educating faculty, staff and students on standards applicable to University-associated activities and safety efforts throughout the University; advise faculty and staff on procedures relating to biosafety and biological safety cabinets; develop accident prevention programs; provide advice; render service; investigate accidents; and maintain statistics related to occupational safety and health.

Personal Protective Equipment (PPE) is a device or garment worn by the worker to protect against hazards in the environment. Examples include safety glasses, face shields, gloves, and hearing protection.

Points of Contact is a quick reference list of program areas where you can obtain additional information or assistance.

- University of Michigan Police Department (UMPD)
  - General 763-1131
  - Emergency 911
- EHS
  - General 647-1143
- ACUO/IACUC
  - General 763-8028
- ULAM
  - Veterinary Care 936-1037
  - Emergency (after hours) 763-1131
  - General 764-0277

Radiation Policy Committee (RPC) is the University of Michigan committee that oversees and approves use of radioisotope and ionizing radiation producing equipment to assure compliance with federal and state regulatory requirements.

Unit Laboratory Animal Medicine (ULAM) is the University of Michigan department that provides oversight on the health and welfare of research animals on campus.

Institutional Animal Care and Use Committee (IACUC) is the University of Michigan committee that fosters and oversees the responsible and humane care and justified use of animals used in research and instruction at the University of Michigan. This is accomplished by overseeing, evaluating, and reviewing the animal care and use program, procedures, and facilities to ensure compliance with applicable standards, policies, and regulations.

RESPONSIBILITY: Everyone working at the University of Michigan has the right to expect a safe and healthy work environment. They also have a responsibility to help assure a safe and healthy environment for themselves and others. These responsibilities are detailed in the University of Michigan Academic Laboratory and Research Safety Policy, issued jointly by Environment, Health & Safety (EHS) and the Office of Research Ethics &
Compliance (UMOR). Please click on the Policy link to view role specific responsibilities including but not limited to the following categories:

- All faculty, staff, other employees and students
- Graduate Student Research Assistants/Trainees
- Post-Doctoral Trainee/Fellow
- Laboratory Director (Faculty/Lab Manager/Supervisor
- Department Chair
- Facility Managers/Department Managers/Key Administrators/Chief Department Administrators
- Unit (School/College/Department) Safety Coordinators

Additional responsibilities specific to the implementation of this guideline follow.

**Principal Investigator**

- Ensure that adequate facilities, ventilation, and equipment are provided based on the hazards associated with the work being conducted.
- Ensure employees are instructed on and follow proper procedures and utilize protective equipment provided during their work as detailed in written SOPs.
- Implement and document appropriate safety policies and procedures in accordance with the U-M Chemical Hygiene Plan.
- Implement procedures in accordance with this Program, including the disclosure of hazardous materials in animal protocols for EHS review.
- Prepare a laboratory specific Biosafety Manual and an Exposure Control Plan to ensure hazards and risks are identified and proper procedures are in place to control the risks. Make sure all individuals working in the laboratory are trained and familiar with the plans.
- Ensure all individuals with direct contact with animals are enrolled in the Animal Handler Medical Surveillance Program.
- Ensure that staff is trained in proper safety procedures specific to their laboratory, and provided with equipment and methods to control hazards.
- Maintain documentation of the program and training as required by the Biosafety Manual, Chemical Hygiene Plan, or Exposure Control Plan.
- Ensure employees attend mandatory training classes provided by the ULAM Training Core and EHS.
- Implement corrective measures to eliminate identified hazards including but not limited to submitting work orders to repair facility deficiencies, acquiring the proper protective equipment, and re-educating staff on proper procedures when deficiencies are identified.
- Ensure deficiencies are corrected in a timely manner.
- Contact EHS to request technical assistance and to evaluate health and safety concerns within their unit.
- Report all work related injuries and illnesses (including animal bites) to the Work Connections office within 24 hours by completing and faxing the Illness or Injury Report Form to (734) 936-1913. Follow the directions on the Work Connections website Forms Instructions to obtain proper medical treatment and follow-up.
Employees

- Complete ULAM Training Core and EHS provided training courses as applicable.
- Inform their Primary Care Physician that job responsibilities involve working with animals; provide the species, type of work, and length of employment.
- Complete Animal Handler Questionnaire
- Wear appropriate PPE
- Follow SOPs and guidance documents
- Report injuries, illnesses, and allergy symptoms when working with animals

EHS

- Review animal use protocols, which involve administration of a hazardous substance to animal, to determine occupational health risks, evaluate and recommend proper protective measures, and identify any need for special medical monitoring, assign appropriate housing facilities based on risk assessment.
- Assist in developing standard operating procedures (SOPs) for safe and compliant handling
- Provide respiratory protection evaluation and fit testing for individuals assigned to work in areas where the risk evaluation determines the need.
- Provide periodic inspections of areas where animal handling occurs to evaluate risks and determine the need for protective equipment or systems.
- Provide training and technical assistance to supervisors and employees upon request, and maintain records of EHS provided training.
- Manage the Animal Handler Medical Surveillance Program to the extent of notifying individuals identified by IACUC requiring exams, ensuring they have the proper forms to complete their exam at the medical clinic, and notifying individuals, supervisors, and IACUC (if necessary) when exams are missed.
- Provide monthly reports to IACUC of personnel non-compliant with the Medical Surveillance Program
- Provide biannual reports to IACUC on the status of the Animal Handler Medical Surveillance Program, and the status of health and safety inspections of areas where animals are used for research purposes, including housing areas and research laboratories. The report will identify issues that may require assistance of IACUC to address.
- Serve as a University liaison for local, county, state, and federal agencies regarding safety issues.

OHS

- Provide the occupational physical exams, immunizations (as needed), and follow-up services for individuals enrolled in the animal handler program.
Medical Surveillance includes review of questionnaires and scheduling individuals for an exam if one is needed. The specific examination will be determined by the OHS clinicians in coordination with EHS, ULAM, and IACUC, and will be based upon the individual risk assessment.

Provide initial treatment and follow-up on occupational injuries including exposures to hazardous materials.

**IACUC**

- Coordinate and manage the animal care and use program, including evaluation of the Occupational Health and Safety Program related to animal use, on campus to ensure compliance with all applicable laws, regulations, and standards as well as the proper care of all research animals.
- Identify to EHS new animal handler employees as they come onto and fall-off of the active registration list so their risk assessment requirements can be met, and ensure PIs understand the importance of accomplishing the occupational health requirements of this program in order to maintain AAALAC accreditation for the institution.
- Identify animal housing and use locations to EHS so they can be included in the periodic inspection programs.
- Receives reports from EHS regarding inspections, protocol reviews and risk assessments, and address concerns as needed.

**ULAM**

- Maintain the health and safety of the research animals on campus.
- Provide training and develop SOPs for the safe use of facility equipment.
- Provide training on the proper PPE use for animal housing areas.
- Provide training on proper handling and restraint techniques on animal that will reduce the risk of injury.
- Provide training regarding the proper use of containment housing facilities.
- Provide professional guidance relating to animal associated hazards.
- Maintain and manage the majority of animal housing facilities on campus.
- Identify health and safety issues and report to EHS for follow-up.

**PROCEDURES:** The following procedures have been prepared to provide a consistent approach to the health and safety programs for animal handlers at the University of Michigan.

**A. Occupational Hazard Identification and Risk Assessment:**

1. Animal use protocols are required to be completed by the researcher for review by **IACUC**. Researchers are required to identify hazardous materials and operations that may be used in the protocol. If infectious or transmissible agents are specified, EHS verifies the risk group of the agent and the containment level required for work with the agent(s). If recombinant and/or replication-defective agents are specified, the risk assessment considers the
nature of the vector, its insert(s) and the potential for replication competent virus to be produced and shed. All rDNA, infectious agent, and Select Agent projects must be registered and approved by the Institutional Biosafety Committee (IBC) prior to commencement of the experiment. The use of hazardous chemicals is reviewed by EHS and requires the researcher to list the dose and route of administration of any potentially hazardous substance (including FDA approved or experimental pharmaceutical products, laboratory chemicals and inhalation anesthetics to live animals). EHS will provide safe handling and use information, along with housing recommendations.

2. The PI/Supervisor will designate personnel responsible for preparing the Biosafety Manual, Chemical Hygiene Plan Supplement Documents, and Exposure Control Plan for the laboratory. The Chemical Hygiene Plan is required for all laboratories that handle hazardous chemicals for research purposes. A Biosafety Manual is also required when using infectious agents or recombinant DNA at a Biosafety Level 2 or higher. The Exposure Control Plan is required for all labs using unfixed human derived materials (tissues, fluids, cell-lines). Guidelines and templates are available on the EHS website. It is advised that one individual should be assigned for the laboratory to make sure the documents are maintained up to date. It is the PI/Supervisor that is ultimately responsible to devise effective occupational safety protocols in consultation with ULAM and EHS.

3. The PI will work with the EHS representative in assessing the risks and identifying equipment, PPE, and procedures to mitigate the risks. These will be documented within the manuals specific to the laboratory, and will be available to anyone working within the area. The manuals must be updated whenever protocols change or a situation occurs in the facility that results in a new hazard. Staff affected by these changes must be briefed on new safety requirements.

4. EHS will assume responsibility for monitoring and reporting on personnel exposure to selected hazards as needed.

5. The University of Michigan Radiation Policy Committee (RPC) controls the use of radioactive substances and equipment emitting radiation. EHS acts as the operational arm of the Committee and has implemented standard operating procedures University-wide governing the use of radioactive materials in animals. Three levels of containment (red, yellow, and green) are described based on level of risk. These procedures are described in the manual, “Standard Procedures and Protocols for Using Radioactive Material in Animals/Guidelines for Use of X Rays in Animal Procedures,” which is available to all users of radioisotopes in animals. EHS, ULAM, and the responsible investigators work together to establish specific procedures for each experiment based on the EHS standard operating procedures. EHS then monitors compliance during the course of the research.

6. Risk factors considered common across all animal handling and husbandry environments are allergenic insults, ergonomic stressors, physical hazards, and noise. Proper training of personnel on these hazards and the proper use
of PPE and appropriate work practices is essential in mitigating these risks. It is the university's position that allergenic and noise exposures, and ergonomic stressors, are to be engineered-out of work environments to the greatest extent possible.

7. Field researchers should be knowledgeable regarding the proper methods and tools for handling animals in their natural environments. It is the PIs responsibility to train personnel on safe handling and emergency procedures to be instituted when working in non-laboratory environments. First aid measures, evacuations plan, and contact numbers for relevant medical professionals should be part of the site safety plan.

B. Personnel Training

1. All personnel working with research animals are required to complete courses regarding the humane care and use of animals. The mandatory training consists of an online orientation course that describes the regulations and policies governing the proper use of animals in research. Additional mandatory courses are determined during protocol review. These courses include species and technique specific topics that are relevant to the protocol.

2. General Laboratory Safety Training is required for all newly hired laboratory personnel and it covers various standards applied at the University including Laboratory Safety, Hazard Communication, and proper use of personal protective equipment.

3. Biosafety and Bloodborne Pathogen Training This training course is intended for U-M laboratory personnel who work in a lab that has a biological safety containment level of 2 (BSL-2), this includes those who may reasonably anticipate contact with human blood, blood products, tissues, fluids or other potentially infectious materials (OPIM) including human cell lines. Training includes: Risk groups & containment determination, BSL-2 policies and practices, MIOSHA BBP training, personal protective equipment, biosafety cabinets and aerosols. Procedures for the safe handling of sharps, waste, spills, as well as reporting for injuries and/or exposures are covered.

4. Working Safely with Viral Vectors is intended for new or entry level laboratory personnel who plan to use recombinant DNA viral vectors in vitro or in vivo, and who cannot demonstrate significant previous experience and expertise in the necessary aspects of biosafety and regulatory compliance.

5. Additional health and safety training opportunities are available through the EHS Training Programs and ULAM Training Core program and it is highly recommended laboratory staff take advantage of these classes as additional needs arise, or as directed by IACUC, EHS, ULAM, IBC or RPC. The ULAM Training Core also participates in training personnel who are exposed to hazards in the animal facility with regard to special entry procedures, use of protective clothing, and other precautions and best practices.
6. Researchers are required to draft standard operating procedures (SOPs), giving detailed instructions on how to safely perform specific tasks associated with chemical, biological, or physical hazards. These procedures are documented as a part of the Chemical Hygiene Plan, Biosafety Manual, and Exposure Control Plan. These documents are used by the PI/Supervisor to instruct employees on the safety aspects of a particular method or task. This is considered "site-specific" training under the Laboratory Safety Standard, and EHS performs audits to assure these documents are available in research labs. Training records are audited by EHS as a part of periodic lab inspections and reviews.

7. In order to work with radioactive materials on the University of Michigan campus, individuals must attend a separate Radiation Safety Orientation to address the requirements for training mandated by State & Federal regulation. EHS has implemented training for all individuals working in or frequenting radioactive material laboratories or facilities. Annual training updates are required and can be given by the EHS laboratory radiation safety contact. Records of follow up training sessions are reviewed by EHS. In addition, a special training course is offered by EHS on an as needed basis to ULAM personnel who care for animals treated with radioactive materials.

C. Personal Hygiene

1. An important factor in protecting the health of personnel engaged in animal care or research is personal hygiene. All employees need to understand the importance of personal hygiene and specific measures that are to be taken routinely to protect them against zoonotic agents found naturally in experimental animals as well as hazardous materials used experimentally in approved studies using animals. After handling animals, non-sterilized tissues, or fluids or waste wash your hands. You should avoid working with animals if you are ill, especially with respiratory problems. Take additional precautions if you have open wounds by bandaging the area and wearing double gloves.

2. Dedicated Work Clothing: Animal care personnel are provided protective clothing each day. Dedicated work clothing is either laundered by husbandry staff using in-house facilities, or laundered by professional laundry services. Dedicated work clothing must not be taken home. Gowns and gloves are made available in most facilities, as determined by SOPs relative to the species present – refer to Appendix E.

3. Hand Washing: Most animal rooms contain a sink and soap for washing hands. Those that do not have a sink have one available nearby or have access to waterless hand sanitizer. All staff handling animals are required to wash their hands prior to leaving an area and moving to another animal area, the general occupancy areas of the facility, or before eating, drinking, smoking, or applying cosmetics.

4. Gloves should not be worn outside the work area, especially in elevators and public areas. EHS provides a Hand Hygiene Poster for work areas to educate
laboratory workers on this important aspect of hygiene. These are posted in conspicuous locations throughout the research buildings.

5. Policies Regarding Eating, Drinking, and Smoking in Animal Facilities: There is no eating, drinking, or application of cosmetics in the animal areas or laboratories. The University of Michigan is a smoke free campus – smoking is prohibited in all university buildings, facilities, and grounds.

D. Facilities and Engineering Controls

1. All proposals to use hazardous materials in animals are reviewed by EHS. The appropriate containment level will be assigned to the research by EHS. The containment level is necessary to protect the health of personnel exposed to the animals or their environment, and to protect the health of other animals maintained at the University. It is up to the unit sponsoring the research to obtain the appropriate equipment necessary to meet the level of protection. The researcher will acknowledge acceptance of the findings and recommendations provided by EHS. If the procedures and hazardous materials involved in the research warrant a start-up inspection by EHS, it will be scheduled upon notification the laboratory is ready.

2. All personnel entering an animal housing containment room with potential exposure to a hazardous material are notified by signage on the entrance door. This signage will include: the investigator’s name and phone number, the laboratory contact’s name and phone number, the animal husbandry supervisor’s name and phone number and any special requirements for entering that room including personal protective equipment. For biological agents, the signs will be clearly marked with the name of the agents, biohazard symbol and the Biosafety Level of the agent. Chemical hazards will be posted with the name of the hazardous materials and a generic chemical symbol. Individual cages will be labeled on the cage card with the specific hazard administered. Additionally, a dissolvable sticker will be placed directly on the cage to identify the type of hazard administered to the animals in that cage to ensure that the cage is appropriately handled by husbandry and cage wash personnel. Procedure rooms approved for use with animals housed in containment will be posted with generic signage to alert people entering the space that chemical and Biosafety Level 2 agents may be present in the room.

3. Environmental hazards are substances, which EHS has determined during the review process presents a concern for environmental contamination, but has been deemed not a risk to human health in the concentrations being used. These substances can be used in a standard animal housing room and do not require animal containment housing. An example of this is antibiotics, which are not hazardous to humans directly but can cause problems with antibiotic resistance when released into the environment. An environmental hazard sticker is placed on cages or water bottles that denotes the name of the agent and date of administration. An environmental hazard sign is posted on housing room doors to notify occupants and husbandry personnel that an environmental hazard is in use in the room. The signage also provides
information on specific waste disposal requirements for the environmental hazard.

4. ULAM operates several containment facilities located throughout campus. The containment facilities are available for use by all PIs on campus. They are designed for housing animals infected with hazardous materials including infectious biohazards, hazardous chemicals and cytotoxic agents. The facilities are negatively pressurized with respect to the hallway. A biological safety cabinet and isolation cages are maintained within the facilities to provide additional containment as necessary. The facilities are either equipped with an autoclave or have access to an autoclave for decontaminating infectious wastes. All hazardous substances waste must be appropriately discarded. Carcasses are collected for proper disposal. One hundred percent of the room air is exhausted to the outside. Air pressure differentials are monitored and noted daily by ULAM. Special personnel procedures are implemented to comply with containment room requirements. A ULAM standard operating procedure, “Animals Administered a Hazardous Substance Requiring Containment” has been developed in coordination with EHS. This protocol describes the standard animal care and use practices for use in containment rooms. It is applied to all containment projects unless EHS deem specific modifications are necessary.

5. In the event ABSL 3 is required, special procedures and facility modifications will be required to meet both safety and security measures. Under the purview of EHS all ABSL 3 “containment” labs, designed specifically for high hazard work with infectious agents must be certified before operation starts. Management and performance of these containment facilities are held to higher standards and are closely monitored for compliance with the Biosafety Manual and other applicable guidelines.

6. The HVAC systems are maintained by Facilities and Operations who performs triennial ventilation surveys to balance systems where appropriate; however, any equipment failure not picked up in the surveys must be reported to Facilities and Operations for repair. ULAM and EHS will evaluate if research operations must stop until the equipment is repaired. This will be based on the type of research and risk involved, and availability of other options for ventilation. If ULAM or EHS requires the research be stopped for safety reasons, the PI/Supervisor will be notified. Once repairs are completed by Facilities and Operations, they will notify EHS to verify the appropriate ventilation and allow operations to resume as normal.

7. Individuals who use volatile anesthetic gases for animal anesthesia and/or euthanasia are required to utilize local exhaust ventilation (scavenging devices, fume hoods, or snorkel hoods) to prevent unnecessary personnel exposure. For anesthetic machines, waste gases are vented through the anesthetic machine pop-off valve via a hose to the building exhaust or through an activated charcoal filter. For rodent anesthetic jars, these should be used in a fume hood, with a scavenging device, or in an appropriately ventilated room. EHS will provide personnel monitoring of anesthetic gas exposure upon request. The use of ether is discouraged; however, those who must use this agent are required to do so in a fume hood or other appropriate ventilating/scavenging device. In addition, containers of ether must be dated.
upon receipt and opening and must be disposed prior to the expiration date provided by the vendor. To avoid explosions, the carcasses of animals exposed to ether are stored in explosion-safe refrigerators.

8. Biosafety cabinets, fume hoods, and other local exhaust ventilation systems are surveyed and certified by EHS staff on a schedule defined in Appendix A. Appendix A to this Program provides details on the EHS Standard of Care for Ventilation Engineering Systems within ULAM. The ventilation system will be certified use of hazardous materials or agents. Because of the rigid standards for certification, not all systems can be used for hazardous material operations. Every individual working in the area with a ventilation system is responsible to know the approved use of the system (identified by a specific label EHS attaches to the system once it is surveyed) and to not use hazardous materials in a system not designed to control the hazard. Any questions on appropriate operation must be addressed to the PI/Supervisor or EHS, and appropriate restrictions must be documented by the laboratory.

9. ULAM has developed Cage Wash Safety SOPs specific to each animal cage wash location. The SOPs provides instructions for safe use of the equipment and directions for stopping all cage wash equipment during both routine operations and during emergencies. The SOPs detail emergency stop locations, activation and re-setting procedures. Either the ULAM staff trainers or the appropriate area supervisor will provide training for all current cage wash employees as well as all new employees as the department hires them. Training will be documented by the ULAM training core. Ease of escape will be validated on each machine twice yearly and noted in the clean side with temperature records, which EHS will verify during the periodic facility inspections.

10. All emergency eyewash and showers are inspected by the University of Michigan’s Facilities and Operations on an annual basis. The inspection criteria are based on manufacturer’s recommendations and ANSI guidelines. The paper inspection tags attached to the equipment are initialed and dated following each inspection. If the equipment is in need of repair, a work order is submitted to Facilities and Operations Work Control Department for correction. Laboratory staff are required to flush the plumbed eyewashes on a monthly basis and report any malfunctions to Facilities and Operations Call Center. Facilities and Operations Maintenance performs the monthly flush of eyewash units located in common areas such as corridors.

11. Fire extinguisher inspection and testing programs are managed by Facilities and Operations under direction of EHS’s Fire Safety Program as the authorities having jurisdiction. In this program all extinguishers are checked and pressure tested under requirements of NFPA and the State of Michigan MIOSHA rules. Requirements for type and placement of new extinguishers are based on the operations involved and are reviewed and approved for placement by the University Fire Marshal. Any extinguishers that are discharged must be reported to Facilities and Operations Call Center for immediate replacement. Any fire, regardless of size, must be reported to UMPD immediately for investigation and follow up by dialing 911 from any University phone system. UMPD will rely on EHS to inspect the area after
the fire and perform any appropriate air monitoring prior to allowing the work to continue.

12. Sharps are commonly encountered in research involving animals. Needles, glass, pipettes, and scalpels are all used in animal facilities and laboratories. Puncture-resistant and leak proof containers for sharps disposal are available in the animal housing rooms and in laboratories. Basic rules to remember when working with sharps:
   - Never recap needles after use (have a sharps container nearby).
   - Dispose of syringes, needles, glass, vials, and scalpels in a sharps container only.
   - Do not overfill sharps containers. Call EHS Hazmat (3-4568) for removal when containers are three quarters full.
   - If you cut yourself, perform first aid immediately and report the incident to your supervisor promptly.

E. Operational Protocols

1. It is the Laboratory Director/Supervisor responsibility to devise effective safety protocols in consultation with ULAM and EHS. In the case of hazardous materials, husbandry practices are outlined in the ULAM SOP “Animals Administered a Hazardous Substance Requiring Containment.” Investigators are required to utilize this protocol when working with infectious biohazards, hazardous chemicals and cytotoxic agents in the animal facilities unless he/she provides acceptable alternative protocols or an alternative protocol is recommended by the Faculty Veterinarian. In the case of radioisotopes, three levels of containment (red, yellow, and green) are described, based on level of risk, in the manual, “Standard Procedures and Protocols for Using Radioactive Material in Animals/Guidelines for Use of X Rays in Animal Procedures.”

2. EHS has developed Guidelines for the safe and compliant way to handle and manage biological, chemical, and radioactive materials, and the proper use and disposal of research related equipment and materials.
   - Biohazardous (Medical) Waste Disposal
   - Biohazardous Sharp Glassware (Pasteur pipettes) Disposal
   - Biological Safety Cabinets
   - Anesthetic Gas Use (Research)
   - Chemical Safety (Chemical Hygiene Plan and SOPs)
   - Cryogenic Liquids Use
   - Infectious Biological Agents and Recombinant DNA
   - Laboratory Fume Hoods
   - Laser Safety
   - Proper Segregation and Disposal of Low-level Radioactive Wastes (LLRW)
   - Radiation Safety Protocols
   - Radionuclide Users Annual Refresher Training Guide
   - Radio Isotope Data Sheets
   - Compressed Gas Use
- Training for the Safe Transportation of Biologics (DOT/IATA Dangerous Goods)
- Chemical Waste and U
- Waste Disposal Supplies
- Waste Packaging Instructions for (pick-up)

3. Use of Select Agents in research operations is infrequent at the University of Michigan. However, procedures have been developed jointly by EHS UM Police Department, the Medical School, and UM Office of Research to assure proper procedures are followed for both biosafety and security: CDC Select Agents.

4. It is very important to maintain health and safety for all visitors to research facilities. EHS developed a guideline to assist Laboratory Directors/Supervisors in this area: Visitors and Volunteers to UM Laboratories.

5. Emergency response procedures have been prepared describing how to respond to incidents involving hazardous materials, radioisotopes, or animal bites/scratches. EHS is available to provide assistance in spill clean-up activities. Staff members should notify their supervisors of all incidents and potential exposures. Supervisors should assist staff members with all required notifications, which may include EHS, ULAM, Risk Management, UM Police Department, or IACUC. If medical treatment is necessary, staff members must report to UM Occupational Health Services or the UM Emergency Department for treatment.

6. Laboratory personnel working with human source materials must treat all human blood, blood products, body fluids, tissues, or cell-lines as if they are potentially infectious and handle them accordingly. All animal research using human source material is conducted using Universal Precautions. Hepatitis B vaccination is available to all at-risk personnel through OHS. All personnel working with human source material are advised they must complete required Bloodborne Pathogens training offered by EHS before using human source materials and annually thereafter. In addition, each laboratory using human source material is required to complete an Exposure Control Plan and have it available for reference purposes.

7. EHS has a program to respond to ongoing concerns regarding ergonomic risks and may incorporate ergonomic tools to address these issues. For transporting heavy equipment or supplies, hand-operated trucks, motorized pallet drivers, and dollies may be utilized. In addition, training sessions on avoiding back injuries and preventing repetitive motion injuries can be provided for personnel.

F. Program Monitoring

1. Monitoring health and safety activity in the research laboratories and animal facilities requires a multi-pronged approach. The first line of oversight is with the PI/Supervisor staff within the laboratory. They have primary responsibility to ensure everyone within their area understand and follow all appropriate health and safety measures. Any unsafe activity must be
immediately corrected. If the problem goes beyond their expertise, they must consult with ULAM or EHS staff on proper procedures.

2. Additional monitoring and oversight comes from IACUC during regular facility inspections and visits, and by the ULAM veterinary staff in the course of performing their clinical duties. Additionally, in ULAM facilities, the ULAM animal care staff monitors compliance of research staff with posted protocols. These inspections and monitoring efforts are typically directed at the health and welfare of the research animals; however, IACUC and ULAM staff has the ability to identify health and safety concerns during their visits. IACUC and ULAM may take the opportunity to identify these concerns to the PI/Supervisor for correction at the time of the visit or these can be referred to EHS for follow-up and resolution.

3. EHS staff performs periodic inspections of animal research laboratories, housing facilities, and containment facilities using standardized criteria for animal use site safety visits (Appendix B). The frequency of inspection will be based on the risk involved in the area or operation. The PI/Supervisor is responsible for correcting the deficiencies in a timely manner, or discussing with the EHS representative a timeline for correction on major items. A follow-up visit will be performed by the EHS representative on any item identified by EHS as a significant risk to laboratory personnel to ensure corrective measures have been implemented. Failure to correct significant items in a timely manner will require escalation of the issue to higher authorities within the user department.

4. Depending on the operation and materials being used, exposure monitoring may be necessary to document the employees need for medical assessment, use of PPE, or the efficiency of engineering controls. This activity will be performed by the EHS representative following generally accepted industrial hygiene practices. A report of the monitoring will be prepared by the EHS representative and will be provided to the PI/Supervisor for distribution to affected employees, with a copy to IACUC and OHS if necessary, for documentation purposes. File copies are maintained by EHS. All recommendations generated by EHS based on the monitoring are the responsibility of the PI/Supervisor to implement within their area.

5. EHS will conduct investigations following incidents of employee exposure, accidents or injuries, or spills of material. The investigation will focus on determining a root cause and corrective measures to prevent reoccurrence. It will not focus on any personnel actions that may be needed to correct a situation – that is the responsibility of the PI/Supervisor of the area. The Director of EHS does have the authority to stop an operation if it cannot be conducted in a safe manner through use of administrative controls, PPE, or engineering controls. This authority is generally used only in situations involving imminent danger situations.

G. Personal Protective Equipment

1. Use of protective clothing and safety devices is mandated when working with laboratory animals. Risk assessments assist in selecting the proper PPE. A laboratory coat, uniform, or surgical gown, is supplied by the department.
Reusable clothing is provided and is laundered onsite and must not be taken home. Refer to Appendix E for a chart that details the level of protective clothing required for the various animal areas based on level of risk.

2. Training on PPE use is the responsibility of the Husbandry Supervisor for the animal housing area. Training on PPE use is the responsibility of the PI/Supervisor in the research areas. EHS representatives are available to assist with the proper selection of equipment and training for staff. The extent of PPE required for an operation is established based on the risk involved and required PPE is posted on the entry sign into the room. It is the responsibility of all personnel entering an area to note the specific equipment required and make proper use of it.

3. Personnel with specific exposure to hazardous substances, as determined by EHS in consultation with OHS, may have a mandatory requirement to wear a respirator. Personnel that have developed allergies to animals, as determined by OHS, may also have a mandatory requirement to wear a respirator. Areas or operations that require the mandatory use of a respirator will be posted. Staff will be fit tested for the appropriate respirator and will be entered into the EHS Respiratory Protection Program.

Note: a surgical mask is not considered a respirator requiring entry into the EHS respiratory protection program – the surgical mask is provided for the use of individuals concerned about developing allergies, for the protection of the animals, or for preventing splash exposure or ingestion of foreign objects by the wearer.

4. The noise level in animal facility areas may reach potentially damaging levels, depending on the type of equipment being used. This is true for the cage washing areas and may occur in other areas. When EHS determines that exposures to noise have a potential to exceed regulatory limits, employees will be placed in the EHS Hearing Conservation Program for proper follow up and training. Areas or operations that require use of hearing protection are posted.

5. The use of restraint devices can provide an extra measure of safety when handling animals. Squeeze cages, nets, heavy leather gloves, and Kevlar sleeves are available for use when working with primates. Plastic restraint tubes and shields can be used to restrain rodents and canvas restraint bags can be used for cats. A plexiglass or metal restraint box is commonly used to restrain rabbits and a variety of muzzles are available for use with dogs. Contact ULAM Training Core for training about proper handling and restraint techniques for animals.

H. Animal Handler Medical Surveillance Program

1. All faculty, staff, students, and other affiliates who have direct contact with animals; direct contact with non-sanitized animal caging or enclosures; direct contact with non-fixed or non-sterilized animal tissues, fluids, or wastes; and/or who provide service support to animal equipment, devices, or facilities must be reviewed for enrollment in the Animal Handler Medical Surveillance Program. The species of animals and associated hazards that
will be encountered in the workplace determine what type of health assessment and safety training each employee will receive. Operational and day-to-day responsibility for health in the workplace, however, resides with the laboratory or facility supervisor (e.g., Laboratory Director, facility director, or veterinarian) and depends on the performance of safe work practices by all employees. Appendix D provides general information on potential hazards associated with handling research animals. Note: in the event of a bite or scratch from a research animal refer to Appendix C for the proper procedures to follow.

2. The Medical Surveillance Program is managed by EHS and administered by Occupational Health Services (OHS) clinic as the occupational health provider. IACUC provides advice and consultation to EHS and OHS regarding specialized requirements of the animal handler program, and staff that need to be included in the program. OHS employs clinicians and nurses licensed and certified in occupational medicine and its various specialty functions. They work with EHS to assure that any necessary testing is administered properly, medical physician’s determinations are delivered in a timely fashion, and records are adequately maintained. These activities are regulated by standards set by the Michigan Department of Licensing and Regulatory Affair’s Occupational Safety and Health Administration (MIOSHA). The confidentiality of medical records and test results is protected under the law. EHS receives a clinician’s determination as to whether or not an employee is physically fit to work under the stressors presented by their work environment and personal protective equipment. EHS does not receive test results or diagnoses concerning the employee’s general health or particular conditions. If it is determined that an employee is not physically fit for a particular type of work or task, this will be discussed in detail with the employee and noted as a restriction on the physician’s determination.

3. Enrollment of participants into the Animal Handler Medical Surveillance Program occurs when they are identified in eRAM, including those on an active protocol and listed as an animal handler. Employees not working for a PI (e.g., animal care staff, maintenance personnel, etc.) will be enrolled upon hire by the department doing the hiring through notification to the ACUO/IACUC or EHS. Employees will be screened at the time of initial enrollment. PI/Supervisors must identify all personnel as they are recruited to or leave the laboratory. Personnel changes must be provided in a timely basis, so that they can be enrolled in the program prior to beginning work. 

Note: it is extremely important to provide the correct spelling of the individuals name, their unique name, and their University of Michigan ID number for enrollment.
4. Enrolled employees will automatically be sent an email by eRAM, requesting the Animal Handler Questionnaire be completed and submitted for review at the OHS clinic. The email will also request review of the educational materials for all animal handlers, as well as species specific information linked on the EHS website. IACUC, ULAM, and EHS will work together to ensure that all provided information is current. Second and third notices will automatically be sent by eRAM at 14 and 28 day intervals, if the questionnaire is not submitted. The PI/Supervisor is also copied on the notice. Failure to comply will result in being locked out of animal rooms, being unable to work with animals, and being reported to IACUC.

5. EHS forwards completed questionnaires to OHS for review. OHS may schedule a clinic visit, if deemed necessary. The need for a clinic visit will be based on the functional requirements of the position, the type of animal contact, and the individual’s medical history. Failure to comply with required clinic evaluation process will also result in sanctions by the IACUC, as noted above.

6. An email is generated by eRAM on an annual basis and sent to those enrolled in the Animal Handler Medical Surveillance Program.
   a. Due to an individual’s work status, species use, or personal medical condition, it may be determined by EHS or OHS clinicians this it is a mandatory requirement to complete an annual Animal Handler Questionnaire. Personnel who work with animals or within an animal care facility in this high risk category must obtain their annual medical clearance by doing the following:
      • Review the educational materials provided for "All Animal Handlers" as well as the applicable species specific information on the EHS website.
      • Complete a Animal Handler Questionnaire.
   
   b. Those individuals not included in the high risk category will receive an annual reminder email describing animal allergy symptoms, and requesting a resubmission of the Animal Handler Questionnaire if there has been a change in their medical status, a change in species or level of animal contact, or any concerns with their work environment.

7. UM Facilities and Operations staff, including Maintenance, Construction, and Building Services staff and other staff working in animal areas are provided orientation training, which includes awareness of issues in animal care areas. Training for particular species will be provided by the ULAM Training Core. They are enrolled in the Animal Handler Medical Surveillance Program, along with other pertinent surveillance by their supervisor upon request to EHS. Annual reminder notifications for these personnel are managed through the EHS Medical Surveillance database and is administered by the OHS clinic. This is the same information that is distributed to research staff through eRAM reminding them about animal
allergy symptoms, or if there has been a change in their medical status, a change in species or level of animal contact, or any concerns with their work environment to resubmit the Animal Handler Questionnaire. There are also web links to the educational materials for All Animal Handlers.

8. The following species specific procedures are required for personnel working with:
   a. Non-Human Primates
      ▪ Verification of Rubeola immunity
      ▪ Annual tuberculin skin test
      ▪ Review of the Macacine herpesvirus 1 (Herpes B virus) Prevention, and bite/scratch procedures for personnel working with macaques.
   b. Sheep:
      ▪ Review of educational materials for exposure to Orf and Q fever.
      ▪ Depending on work environment may require respiratory protection.

9. Employees approved to work with Select Agents or Toxins are enrolled in an Occupational Health Program administered through OHS. Further information is available in the CDC Select Agent Guideline.

10. The OHS occupational health professionals, in consultation with EHS regarding potential exposures in the particular job category, will determine the need and frequency of the following:
    - Boosters - Tetanus, Rabies, MMR
    - Vaccinations
    - Hearing test
    - Respiratory function test
    - Allergy/asthma tests

11. Women who know or suspect they are pregnant must take special precautions when working with animals. There are certain pathogens that pose a serious health risk to the fetus and can cause birth defects. If you know or suspect you are pregnant, you can contact EHS concerning additional information and a possible consultation with a clinician. EHS provides technical support regarding occupational risk, as well as workplace safety assessments, fetal radiation dose monitoring, and educational materials, which focus on preventative and protective measures.
    - Fetal infection occurs when women become infected with Toxoplasma (a parasite) for the first time during their second trimester of pregnancy. Miscarriage or birth defects can result. Pregnant personnel, without immunity to toxoplasmosis, should avoid contact with toxoplasma-infected animals, especially cats to prevent congenital Toxoplasma infection. Pregnant women
should avoid contact with Toxoplasma infected animals and materials.

- Listeriosis is a bacterial infection, which may cause repeated spontaneous abortions. Many species can carry Listeria but sheep, goats and cattle are the most common source. Due to the potential risks to the fetus, pregnant women should be advised of the risks of exposure.
- Exposure of women to certain anesthetic gases can increase the risks of kidney disease, miscarriage, and birth defects.

**TECHNICAL SUPPORT:**

All reference guidelines, regulations, and other documents are available through EHS (647-1143) or the [EHS website](http://www.ghs.umich.edu).

**ATTACHMENTS:**

- Appendix A  [EHS Standard of Care: Ventilation Engineering Controls](#)
- Appendix B  [Inspection Criteria for Animal Use Site Safety Visits](#)
- Appendix C  [First Aid for Bites or Scratches from Research Animals](#)
- Appendix D  [Informational Resources for Animal Handlers](#)
- Appendix E  [Protective Clothing for Animal Care and Use](#)
- Appendix F  [Animal Handler Program Instructional Flow Chart](#)
- Appendix G  [Animal Handler Questionnaire](#)
Appendix A
EHS Standard of Care: Ventilation Engineering Controls

Equipment Category Types
Biological Safety Cabinet (BSC)
Chemical Fume Hood (FH)
Vertical Laminar Flow Polypropylene (VLFP) Fume Hood – “Hybrid Hood”
Local Exhaust Ventilation (LEV)
Laminar Flow Cabinet (LFC)

Equipment Category Explanation
BSC – Class II unit providing personnel and product protection. The majority of applications involve containment of biological hazards while providing sterile field for vulnerable experimental materials.

FH – Exhausted fume hoods providing personnel protection only.

VLFP Hood – Metal-free exhausted fume hood for personnel protection with a purified air curtain for product protection.

LEV – A variety of configurations for local exhaust or capture of point source emissions, providing personnel protection and/or smoke, odor, dust or heat control. Includes snorkels, canopies, paint booths, gas cabinets, dirty animal bedding dump stations, etc.

LFC – Typically a non-exhausted, HEPA-filtered cabinet, either inflow or outflow, for either product protection or personnel protection - but never both at the same time. Must be designated and posted for either/or purpose. Vast majority are configured for outflow clean bench “sterile field” work, either clinical preparations or research requiring “zero air.” Minority are configured for inflow point source capture of nuisance dust from bulk operations such as animal cage dumping (Class I BSCs are included in this category).

Explanation of Provided Services per Category
BSC – Annual certification with aerosol challenge filter testing, filter repair/replacement, balancing, maintenance and decontamination as necessary. BSC certification is specific to a fixed location where the general room ventilation is fixed. Mobile units loose certification once they are moved from the room they were certified in and cannot be used with hazardous materials. Mobile units relegated specifically to non-hazardous use will receive reduced service for control velocities only but not aerosol challenge filter testing.

FH – Annual certification of face velocity and inspect for full functionality on safety features. Mechanical maintenance is provided by Facilities and Operations. Faulty hoods are tagged out of service by EHS. EHS issues a work request to Facilities and Operations for repair and is notified once repairs are completed to recertify the system for use.

VLFP Hood – Annual certification of face and down-flow velocities with balancing as necessary. The user must provide EHS with a manual that details certification specifications and methods. Maintenance and filter replacement is the user’s responsibility.

LEV – Cyclic certification of capture velocities as determined by an industrial hygiene assessment of risk. Maintenance is provided by Facilities and Operations or in some instance the user.
LFC – Annual certification of face velocity and inspection of full functionality on safety features.

- Maintenance and filter replacements are the user’s responsibility.
- Outflow Units – Users of LFC’s used in clinical settings can request an increased service level which is rebilled for time and materials. The increased service includes aerosol challenge filter testing, and filter repair/replacement as necessary to ensure sterile field for QA/QC reporting.
- Inflow Units – Inflow LFC’s do not provide complete personnel protection and are not represented to perform at the same level of containment as Class II BSC’s; therefore no cyclic testing of the HEPA filter with aerosol challenge is recommended.

Data Acquisition
All inspections, certifications, and report generation are conducted with the use of Pendragon PDA software and Microsoft Access.

Reporting

BSC – A BSC certification sticker is placed on the unit indicating the date of the certification. If requested a one page report can be printed from the database for clinical units needing detailed documentation for audit. An email report detailing equipment problems, filter change requirements, and maintenance repair not performed by EHS is sent to the listed user of the device.

- Mobile units relegated specifically to non-hazardous use will receive a notification sticker indicating “Caution – this hood is Not Designed for hazardous materials operations” to exclude use of biohazardous or chemically hazardous materials.

FH – A Fume Hood certification sticker is placed on the unit indicating the date of the certification. Failing fume hoods are posted out of service. An email report is sent to Facilities and Operations Call Center to start work orders on failing hoods.

VLFP – A Fume Hood certification sticker is placed on the unit indicating the date of the certification. Failing fume hoods are posted out of service. An email report detailing VLFP Equipment problems, filter change requirements, and maintenance repair not performed by Facilities and Operations is sent to the equipment user.

LEV – An LEV Hood certification sticker is placed on the unit indicating the date of the certification. An email report is sent to Facilities and Operations Call Center to start work orders on failing hood exhaust systems. An email report detailing LEV Equipment problems, filter change requirements, and maintenance repair not performed by Facilities and Operations is sent to the equipment user.

LFC – An LEV Hood certification sticker is placed on the unit indicating the date of the certification. If requested a one page report can be printed from the database for clinical units needing detailed documentation. An email report detailing equipment problems, filter change requirements, and maintenance repair not performed by EHS is sent to the equipment user.

- As outflow units are relegated specifically to non-hazardous use, they will receive a notification sticker indicating “Caution – this hood is Not Designed for hazardous materials operations” to exclude use of biohazardous or chemically hazardous materials.
Appendix B
Inspection Criteria for Animal Use Site Safety Visits

IACUC/EHS Semi-Annual Inspections

- An EHS representative participates in the IACUC inspection of animal housing room and service area, including the Flint and Dearborn campuses (when occupied). During the inspection, a general safety survey (i.e., review of appropriate signage, potential physical and toxicological hazards, safety devices) of each room is conducted. If possible, all items are resolved at the time of the inspection. An unannounced follow-up inspection can occur to assure that the concern is not recurring.

- If the concern is not resolved or is repeated, an email is sent to the appropriate individual (i.e., Principal Investigator (PI), supervisor or director of the lab) requesting a response. This response should indicate the resolution plan and time frame. Additional unannounced follow-up inspections may occur until the concern is resolved. All items of concern are reported semi-annually to the IACUC.

EHS Hazardous Materials Audits

- An EHS representative identifies a PI who has been approved for use of a hazardous material and is currently housing animals in a containment facility. An appointment is set up to meet with the PI and/or a lab supervisor who is knowledgeable of the policies and procedures of the lab. At the time of the audit, documentation is reviewed, including the mandatory supplement to the Chemical Hygiene Plan (Blue Binder), Exposure Control Plan, related SOPs, training records, and other general safety procedures involved in operating the laboratory. In addition, the physical lab space and animal containment space are inspected and procedures are reviewed for competency.

- All identified concerns and resolution plans are reviewed and prevention strategies are put in place. Additional unannounced follow-up inspections may occur.
Appendix C
UNIVERSITY OF MICHIGAN
FIRST AID FOR BITES OR SCRATCHES FROM RESEARCH ANIMALS
For life threatening or immobilizing injuries, call 911

The following steps should be taken for any RESEARCH animal bite or severe scratch:
1) Immediately wash the wound and surrounding area thoroughly with an antibacterial soap. It is recommended to scrub vigorously for 3-5 minutes, rinse, and repeat two more times.
2) Inform your supervisor of the incident.
3) If exposure was to a fish; frog; toad; snake; lizard; bird; rodent; pig; rabbit; sheep:
   a) If it has been greater than 10 years since you received a tetanus vaccine or booster, seek medical attention. Otherwise, observe the wound for several days and seek professional medical care if there are any signs of infection (redness, drainage, increased pain, etc.).
4) If exposure was to a bat; cat; dog; large wild mammal (porcupine, weasel, etc.); ferret; non-human primate:
   a) Seek medical attention.
   b) If bitten by a dog, cat, or other potential rabies carrier, notify the ULAM clinical veterinarian at 764-0277. DO NOT euthanize the animal or dispose of the carcass.
   c) If bitten or scratched by a macaque, you should be familiar with the Unit for Laboratory Animal Medicine (ULAM) Macaque Monkey Bite/Scratch Protocol.

Seeking medical attention: It is important to know in advance where you should report on weekdays during regular business hours, after hours, weekends, and holidays. Generally, university employees report to Occupational Health Services (OHS) at the C380 Med Inn Building on weekdays during normal business hours, and to the U-M Hospital emergency room after hours, weekends, and holidays. Medical care for students is covered by their personal health insurance policy.

Forms to be completed

- Work Connections Injury or Illness Report Form (the same form that is completed for any work-related injury). Even if an individual elects not to seek medical attention, the illness or injury report should be completed as a matter of record for each work-related injury. Follow the directions on the Work Connections website Forms Instructions to obtain proper medical treatment and follow-up.

Contact the ACUO at 763-8028 for additional information.

Pertinent Phone Numbers and URLs
UM Work Connections: 615-0643 www.umich.edu/~connect
U-M Hospital Emergency Room: 936-6666 www.med.umich.edu/em
ULAM: 764-0277 http://animalcare.umich.edu/unit-laboratory-animal-medicine
ACUO: 763-8028 http://animalcare.umich.edu/institutional-animal-care-use-committee
Appendix D

Informational Resources for Animal Handlers

Broadly speaking, there are four types of potential hazards you need to be aware of:

- Zoonotic diseases
- Animal bites and other traumatic injuries induced by animals
- Allergic responses
- Sharps

Zoonoses are infectious diseases transmitted from animals to man. Most animals used in research do not pose a risk to people handling them because whenever possible, disease-free animals are utilized as research subjects. Nevertheless, on rare occasions, animal handlers can contract diseases from research animals. For example, two serious zoonoses that are relatively rare but often fatal are rabies and *Macacine herpesvirus* 1 (Herpes b). Rabies can be carried by a number of wild mammals such as bats, raccoons and skunks, but may also occur in domestic carnivores such as dogs. By comparison, the *Macacine herpesvirus* 1 (Herpes B virus) is carried only by certain species of nonhuman primates, principally macaques such as rhesus and cynomolgus monkeys. Both diseases are transmitted through bites or scratches from infected animals. Less serious diseases can result following scratches from cats and bites from rodents.

Injury from animal bites or scratches presents two risks to animal handlers: tissue damage and secondary infections from some disease-causing agents (pathogens) that are found on the oral mucous membranes or in the saliva of laboratory animals. Although the bites and scratches inflicted by small animals usually result in only minor wounds, those inflicted by larger animals can result in substantial tissue damage. Proper handling techniques are essential in preventing animal induced injuries.

Animal allergies are among the most common conditions that adversely affect the health of personnel involved in the care and use of animals in research. Allergies can be manifested as allergic rhinitis (characterized by runny nose and sneezing), asthma, or contact urticaria (hives). Allergy to animals is particularly common in workers exposed to animals such as cats, rabbits, mice, rats, gerbils, and guinea pigs. Symptoms typically develop within the first year after a person begins working with animals but may appear even years later. Certain procedures should be routinely followed in order to prevent the development of animal allergy. Animals should be housed, as well as manipulated and/or handled, in extremely well ventilated areas. Gloves and protective clothing should always be worn to prevent direct exposure to animals, animal urine, and animal dander (small particles of animal hair, feathers, or skin). In order to prevent the inhalation of contaminated material, cages should be changed frequently, and surgical masks should be worn during the changing of cages.

Although latex gloves are effective in preventing transmission of infectious diseases and allergens, latex itself contains proteins which have been shown to cause allergy. Latex allergy is a reaction to proteins in latex rubber. The amount of latex exposure needed to produce sensitization or allergic reaction is unknown. Increasing the exposure to latex proteins increases the risk of developing allergic symptoms. In sensitized persons, symptoms usually begin within minutes of exposure; but they can occur hours later and can be quite varied. Mild reactions to latex involve skin redness, rash, hives, or itching. More severe reactions may involve respiratory symptoms such as runny nose, sneezing, itchy eyes, scratchy throat, and asthma.

Sharps are commonly encountered in research involving animals. Needles, broken glass, syringes, pipettes, and scalpels are all used in animal facilities and laboratories. Puncture-resistant and leak proof containers for sharps are available in the animal housing rooms and in laboratories. Basic rules to remember when working with sharps:

- Never recap needles after use (have a sharps container nearby).
• Dispose of syringes, needles, glass, vials, and scalpels in a sharps container only and do not overfill the container.
• If you cut yourself, perform first aid immediately and report the incident to your supervisor promptly.

Personal Hygiene
Conscientious personal hygiene practices establish an important barrier to infection by providing a first line of defense against pathogens. After handling animals or their secretions and excretions you should wash your hands with a disinfectant soap and water. Use protective clothing (laboratory coat, uniform, or surgical gown) and safety devices such as gloves, facemasks and safety glasses when working with animals. Never eat, drink, or apply cosmetics in animal rooms. Remember to keep your hands away from your mouth, eyes, nose and hair after handling animals; such inadvertent self-contamination with pathogens causes many of the reported illnesses among laboratory workers. You should avoid working with animals if you are ill, especially with respiratory problems. Take additional precautions if you have open wounds by wearing gloves.

Protective Clothing
There are numerous protective devices that animal handlers can use to minimize the risks associated with working with animals. A laboratory coat, uniform, or surgical gown, supplied by the University, should always be worn in an animal room. This clothing is laundered by the University (usually arranged by your department) and should not be taken home. In all animal-housing areas, gloves are available. In addition, in certain housing areas, disposable shoe covers, head covers and facemasks are provided by the University. Sealed eye protection is required for use in primate rooms and can be obtained from M-Marketsite. Special respirators for those with animal allergies also can be obtained from Environment, Health & Safety (EHS).

Restraint Devices
The use of restraint devices can provide an extra measure of safety when handling animals. Squeeze cages, nets, heavy leather gloves, and Kevlar sleeves are available for use when working with primates. Plastic restraint tubes and shields can be used to restrain rodents and canvas restraint bags can be used for cats. A plexiglass or metal restraint box is commonly used to restrain rabbits and a variety of muzzles are available for use with dogs. Contact the ULAM Training Core for training about proper handling and restraint techniques for animals.

Pregnant Women
Women who know or suspect they are pregnant must take special precautions when working with animals. There are certain pathogens that pose a serious health risk to the fetus and can, in fact, cause birth defects. If you know or suspect you are pregnant, you can contact EHS concerning additional information and a possible consultation with a physician. EHS provides technical support regarding occupational risk, as well as workplace safety assessments, fetal radiation dose monitoring, and educational materials, which focus on preventative and protective measures.
Appendix E

Protective Equipment for Animal Care Use

**Purpose:** To define minimum standards for personal protective equipment (PPE) when working with research animals at the University of Michigan for the purpose of preventing or controlling personnel exposure to zoonotic organisms and allergens inherent in the animals. Additional PPE may be required to protect personnel from additional hazards that may be encountered in the research setting including the following: chemicals, toxins, infectious organisms or radioactive materials purposefully administered to animals in an approved animal use protocol; physical, chemical or noise hazards present in cage wash facilities or diagnostic laboratories; and hazards associated with field research or wild caught animals. PPE required for use in these settings must be determined after consultation with the Department of Environment, Health & Safety (EHS). Contact EHS Biological Safety at 647-1143 for additional information. Use of additional PPE may be required by ULAM to help protect the health of the animals. Personnel with compromised immune systems or who are pregnant may need additional protections as required by a physician or occupational health specialist. EHS and UM-Occupational Health Services will evaluate potential risks and make recommendations for individuals upon request.

**Note** - Animal care personnel should be aware that exposure to infectious and/or hazardous materials can occur through cuts/punctures with contaminated sharp objects, blood or other potentially infectious materials entering a break in the skin, splashes to the eyes, nose or mouth. The proper use of standard personal protective equipment will significantly reduce the risk of exposure to potentially hazardous materials. If employees have an open cut, wound or skin abrasion, the affected area should be covered with a band-aid or other type of waterproof dressing and double gloves should be worn to prevent transmission through breaks in the skin before entering the space. Any exposure incidents should be reported immediately to the area supervisor and complete the Work Connections Illness or Injury Report Form. Treatment and counseling following such an incident is available through Occupational Health Services (734-764-8021).
Responsibilities:

1. It is the responsibility of the Laboratory Director to ensure that laboratory staff members are trained in the appropriate use of PPE when working with animals or tissues in research and that their staff appropriately utilize the required PPE.

2. It is the responsibility of EHS to periodically reassess potential risks within the animal facility that could be mitigated by use of PPE and amend PPE requirements as needed.

3. It is the responsibility of EHS to perform a risk assessment and determine the appropriate PPE for use in situations for which this policy does not apply (e.g., for pregnant or immunocompromised personnel).

4. It is the responsibility of the management of each animal facility to ensure the signage detailing required PPE is clearly visible to all facility users and that all users are monitored for appropriate PPE use.

For questions regarding this document please contact EHS at 647-1143.

Definitions:

Animal body substances – tissues or fluids of animal origin (e.g., urine, feces, blood, saliva).

Dedicated clothing- a garment (e.g., scrubs or laboratory coat) worn only in the animal facility or research laboratory but not in general public areas. These garments must not leave the workplace and must be laundered and stored in the workplace.

Face Mask- covering for the mouth or face that supplies splash and gross debris protection (should be water resistant), but is not intended to provide respiratory filtration (see EHS approved respirator). Fixed tissue - tissues processed with a chemical substance (e.g., formalin, formaldehyde, gluteraldehyde) known to inactivate select biological hazards.

In-room observation – visual observation of an animal within a room (e.g., housing room, procedure room, behavioral suite) of the animal facility that does not include touching of the animal or, when applicable, opening of a microisolation cage.

Personal Protective Equipment- protective coverings (e.g., clothing, gloves, hair covers, goggles, mask) designed to protect the wearer's body from exposure to infectious agents or allergens associated with animals.

EHS Approved Respirator- NIOSH certified N-95 or higher particulate respirator or positive air purifying respirator (PAPR).

Sealed eye protection- goggles with closed top, side, and bottom and indirect vents that fit snugly against the face forming a seal around the eyes, thus preventing liquids from splashing or dripping into the eyes. Goggles must meet standards described in 29 CFR 1910.133 Eye and Face Protection and ANSI Z87.1 - 1989.

Sheep with increased risk of Q Fever- Q fever is a zoonotic disease caused by Coxiella burnetii. Pregnant female sheep, newborn (up to 48 hours old) or nursing lambs can shed high levels of the organism in the placental membrane, birthing fluids, milk, feces and urine.
Attachment: Minimum PPE for Animal Handlers

1) **Minimum required PPE:** *Dedicated outer-covering or disposable outer-covering with long sleeves, disposable gloves, closed-toed shoes, & long pants*

2) Refer to Table 1 and Table 2 for additional PPE based on species and tasks.

3) Always consult room specific PPE requirements posted at the entrance.

**Table 1**

<table>
<thead>
<tr>
<th>Tasks or Animals Involved</th>
<th>Direct contact with animals (including post mortem examination of animals “necropsy”)</th>
<th>Contact with animal caging, bedding or equipment</th>
<th>In room observation only</th>
<th>Handling or processing animal body substances or unfixed tissues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working with Rodents and Rabbits</td>
<td>No additional PPE</td>
<td>EHS approved respirator (only for husbandry and dirty cage wash staff changing/dumping cages w/out engineering controls)</td>
<td>No additional PPE</td>
<td>No additional PPE</td>
</tr>
<tr>
<td>Carnivores (Dogs, Cats, Ferrets)</td>
<td>Waterproof shoe covers or waterproof dedicated shoes</td>
<td>Waterproof shoe covers or waterproof dedicated shoes (only required when in the animal room &amp; dirty cage wash)</td>
<td>Waterproof shoe covers or waterproof dedicated shoes</td>
<td>No additional PPE</td>
</tr>
<tr>
<td>Cattle, Pigs, Goats, and Sheep in a Research Building (See Table 2 below for Sheep with Orf lesions and/or increased risk for Q fever transmission)</td>
<td>Waterproof shoe covers or waterproof dedicated shoes</td>
<td>Waterproof shoe covers or waterproof dedicated shoes (only required when in the animal room &amp; dirty cage wash)</td>
<td>Waterproof shoe covers or waterproof dedicated shoes</td>
<td>No additional PPE</td>
</tr>
</tbody>
</table>
| Non-Human Primates:                  | • Sealed eye protection   
• 2 layers of disposable gloves  
• Surgical mask or EHS approved respirator (for procedures producing aerosols/particles)  
• Waterproof shoe covers or waterproof dedicated shoes | • Sealed eye protection   
• 2 layers of disposable gloves  
• EHS approved respirator  
• Waterproof shoe covers or waterproof dedicated shoes (only required when in the animal room & dirty cage wash) | • Sealed eye protection   
• 2 layers of disposable gloves  
• Surgical mask  
• Waterproof shoe covers or waterproof dedicated shoes | • Sealed eye protection   
• 2 layers of disposable gloves  
• Surgical mask or EHS approved respirator (for procedures producing aerosols/particles) |
| Birds                               | Shoe covers or dedicated shoes                                                        | Shoe covers or dedicated shoes (only required when in the animal room & dirty cage wash) | Shoe covers or dedicated shoes | No additional PPE |

Table 2

<table>
<thead>
<tr>
<th>Tasks or Animals Involved</th>
<th>Direct contact with animals (including post mortem examination of animals “necropsy”)</th>
<th>Contact with animal caging, bedding or equipment</th>
<th>In room observation only</th>
<th>Handling or processing animal body substances or unfixed tissues</th>
</tr>
</thead>
<tbody>
<tr>
<td>Working with Rodents and Rabbits</td>
<td>No additional PPE</td>
<td>EHS approved respirator (only for husbandry and dirty cage wash staff changing/dumping cages w/out engineering controls)</td>
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<td>No additional PPE</td>
</tr>
<tr>
<td>Carnivores (Dogs, Cats, Ferrets)</td>
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</tr>
<tr>
<td>Cattle, Pigs, Goats, and Sheep in a Research Building (See Table 2 below for Sheep with Orf lesions and/or increased risk for Q fever transmission)</td>
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<td>Waterproof shoe covers or waterproof dedicated shoes (only required when in the animal room &amp; dirty cage wash)</td>
<td>Waterproof shoe covers or waterproof dedicated shoes</td>
<td>No additional PPE</td>
</tr>
</tbody>
</table>
| Non-Human Primates:                  | • Sealed eye protection   
• 2 layers of disposable gloves  
• Surgical mask or EHS approved respirator (for procedures producing aerosols/particles)  
• Waterproof shoe covers or waterproof dedicated shoes | • Sealed eye protection   
• 2 layers of disposable gloves  
• EHS approved respirator  
• Waterproof shoe covers or waterproof dedicated shoes (only required when in the animal room & dirty cage wash) | • Sealed eye protection   
• 2 layers of disposable gloves  
• Surgical mask  
• Waterproof shoe covers or waterproof dedicated shoes | • Sealed eye protection   
• 2 layers of disposable gloves  
• Surgical mask or EHS approved respirator (for procedures producing aerosols/particles) |
<p>| Birds                               | Shoe covers or dedicated shoes                                                        | Shoe covers or dedicated shoes (only required when in the animal room &amp; dirty cage wash) | Shoe covers or dedicated shoes | No additional PPE |</p>
<table>
<thead>
<tr>
<th>Tasks or Animals Involved</th>
<th>Direct contact with animals (including post mortem examination of animals &quot;necropsy&quot;)</th>
<th>Contact with animal caging, bedding or equipment</th>
<th>In room observation only</th>
<th>Handling or processing animal body substances or unfixed tissues</th>
</tr>
</thead>
</table>
| **Sheep with ORF Lesions in a Research Building** | • Water-resistant jumpsuit/cover all that covers entire body and arms that is either discarded after each use or sterilized  
• Surgical mask  
• Eye protection  
• Waterproof shoe covers or waterproof dedicated shoes | • Water-resistant jumpsuit/cover all that covers entire body and arms that is either discarded after each use or sterilized  
• Waterproof shoe covers or waterproof dedicated shoes  
(only required when in the animal room & dirty cage wash) | • Water-resistant jumpsuit/cover all that covers entire body and arms that is either discarded after each use or sterilized  
• Waterproof shoe covers or waterproof dedicated shoes | dedicated outer-covering or disposable outer-covering with long sleeves can be worn in place of water resistant gown |
| **Working with Sheep with Increased Risk of Q fever Transmission in a Research Building** | • Water-resistant jumpsuit/cover all that covers entire body and arms that is either discarded after each use or sterilized  
• EHS approved respirator  
• Waterproof shoe covers or waterproof dedicated shoes  
• Hair bonnet  
• Sealed eye protection | • Water-resistant jumpsuit/cover all that covers entire body and arms that is either discarded after each use or sterilized  
• EHS approved respirator  
• Waterproof shoe covers or waterproof dedicated shoes  
(only required when in the animal room & dirty cage wash)  
• Hair bonnet  
• Eye protection | • Water-resistant jumpsuit/cover all that covers entire body and arms that is either discarded after each use or sterilized  
• EHS approved respirator  
• Waterproof shoe covers or waterproof dedicated shoes  
• Hair bonnet  
• Eye protection | • Water-resistant jumpsuit/cover all that covers entire body and arms that is either discarded after each use or sterilized  
• EHS approved respirator  
• Hair bonnet  
• Eye protection |
1) Minimum required PPE: **Disposable gloves**
2) Refer to Table 3 for additional PPE requirements based on species and task
3) Always consult room specific PPE requirements posted at the entrance

<table>
<thead>
<tr>
<th>Tasks or Animals Involved</th>
<th>Direct contact with animals (including post mortem examination of animals “necropsy”)</th>
<th>Contact with animal caging, bedding or equipment</th>
<th>In room observation only</th>
<th>Handling or processing animal body substances or unfixed tissues</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Terrestrial Amphibians and Reptiles</strong></td>
<td>No additional PPE</td>
<td>No additional PPE</td>
<td>No PPE required</td>
<td>No additional PPE</td>
</tr>
<tr>
<td><strong>Aquatic Amphibians, Reptiles, and Fish</strong></td>
<td>Disposable gloves of suitable length to prevent skin contacting water</td>
<td>Disposable gloves of suitable length to prevent skin contacting water</td>
<td>No PPE Required</td>
<td>Disposable gloves</td>
</tr>
</tbody>
</table>
Minimum Required PPE for Working with Sheep in a Farm Setting

General work in sheep corals, pens, pastures with No Animal Contact at all times of the year:

- Dedicated shoes or shoe coverings (for farm use only)
- During non-birthing season, street clothes may be worn in the animal areas

Cleaning of sheep areas with No Animal Contact:

- Dedicated shoes or waterproof shoe coverings
- Disposable gloves
- Clothing that is only worn while working with the sheep and is washed at the farm
- Consider the use of an EHS approved respirator – minimize aerosols

Any direct contact with Sheep (e.g. dyeing wool, shearing, blood collection):

- Dedicated shoes or waterproof shoe coverings
- Disposable gloves
- Clothing that is only worn while working with the sheep and is washed at the farm
- Consider the use of an EHS approved respirator – minimize aerosols

Any direct contact with sheep with ORF lesions:

- Dedicated outer-covering or disposable outer-covering with long sleeves
- Disposable gloves
- Waterproof dedicated shoes or waterproof shoe covers
- Eye protection
- Surgical mask (recommended)

Contact with newly parturient ewe, newborn lamb (less than 48 hours old) and/or fetal tissues during surgery or necropsy:

- Water-resistant jumpsuit/cover-all with hood or separate head covering - the suit must be discarded after each use or sterilized
- Sealed eye protection
- EHS approved respirator
- Disposable gloves
- Dedicated shoes or waterproof shoe coverings

Direct contact with birth fluids or milk products:

- NOTE: This level of protection must be used until ALL ewes are done birthing and the remains of the birth products and bedding have been removed
- Water-resistant jumpsuit/cover-all with hood or separate head covering - the suit must be discarded after each use or sterilized
- Sealed eye protection
- EHS approved respirator
- Disposable gloves
- Dedicated shoes or waterproof shoe coverings
Sheep with an increased risk of Q fever transmission include infected pregnant ewes.

- NOTE: There may be high levels of pathogenic organisms in these animal tissues at the time that they give birth, so particular care needs to be used in handling newborn (48 hours old) animals, placental or fetal tissues and other products of conception.
- For additional information on working with sheep with ORF lesions or increased risk of Q fever transmission refer to the ULAM SOP: Procedures to Reduce Human Exposure to Orf (Contagious Ecthyma) and Q Fever (*Coxiella burnetii*).
- Additional Q Fever precautions:
  - It is recommended that individuals with a history of heart conditions, women who are pregnant or individuals considered to have a higher risk for a severe outcome should wear full PPE covering (EHS approved respirator, sealed eye protection, dedicated shoes or waterproof shoe coverings and head covering) throughout the period of late pregnancy, parturition and lactation while in the corals or barns, whether in physical contact with the animals or not. The level of PPE can be reduced upon removal and disposal of animal products (e.g., birth products, urine, feces, bedding, or milk) and the area has been thoroughly cleaned.
  - Dedicated shoes or waterproof shoe coverings will be supplied at the farm. Following use, they must be rinsed off and disinfected by spraying with bleach or Lysol solution while outside, and then placed back in the storage area inside the East barn. Disposable shoe covers must not be reused.
  - All protective clothes worn on the farm during the period when ewes are giving birth should be washed at the farm. If clothing or surgical drapes used on pregnant animals are not placed immediately into the washer, they should be stored in a biohazard bag/container until ready for washing. The person unloading the biohazard bag/container should wear dedicated farm clothing (i.e., clothing cleaned at the farm), disposable gloves and an EHS approved respirator.
  - Disposable suits are meant for a one-time use, unless the suits are autoclaved. If the expectation is to re-use these suits, they must be autoclaved prior to re-use. No more than 3 cycles of autoclaving can be performed before the suits significantly deteriorate and must be replaced. *Note - A standard operating procedure must be developed if the suits will be autoclaved. Suits that are to be autoclaved must be placed in an approved autoclave bag after each use and transported directly to the autoclave for immediate treatment.*
  - Note: a surgical mask is not considered a respirator– the surgical mask is provided for the use of individuals concerned about developing allergies, for the protection of the animals, or for preventing splash exposure or ingestion of foreign objects by the wearer.
Appendix F
Animal Handler Program Instructional Flow Chart

RPC: Radiation Policy Committee
IBC: Institutional Biosafety Committee
IACUC: Institutional Animal Care and Use Committee
ULAM: Unit for Laboratory Animal Medicine
EHS: Environment, Health & Safety
Appendix G
Animal Handler Questionnaire

MEDICAL SURVEILLANCE QUESTIONNAIRE
For personnel working with research animals
CONFIDENTIAL MEDICAL INFORMATION

☐ New/Initial Screening  ☐ Annual/follow-up screening  ☐ Student  ☐ Temporary  ☐ Faculty  ☐ Staff
First Name  Last Name  Social Security #  Email  UMID#
Gender [ ] Male [ ] Female  Date of Birth (mm/dd/yy)  Uniname  Department
Projected Duration of duties Office phone#
Primary Language  Language you prefer used by your medical provider

Animal Contact
What species of animals will you be exposed to?
☐ Birds  ☐ Cats  ☐ Dogs  ☐ Guinea Pigs  ☐ Wild mammals
☐ Pigs  ☐ Rabbits  ☐ Rats  ☐ Mice  ☐ Field Research
☐ Fish  ☐ Chickens  ☐ Frogs  ☐ Cattle  ☐ Other (please list)
☐ Sheep requires review of O-fever precautions and Risks associated with working with this species.
Working with pregnant female sheep, newborn lambs, or nursing lambs Requires Respiratory Protection
☐ Non-Human Primates requires TB testing and Rabies immunity verification

What kind of contact will you have? [Check all that apply]
☐ Direct contact with animals
☐ Direct contact with non-fixed or non-sterilized animal tissues, fluids, or wastes
☐ Direct contact with non-sanitized animal caging or enclosures
☐ Service support to animal equipment, devices and/or facilities

Do you have contact with animals outside of work? ☐ No ☐ Yes If yes, please list the species

Allergy History
List any allergies to medications: ___________ Reactions: ___________

Do you have any of the following? [Check all that apply]
☐ Chronic cough  ☐ Hay Fever  ☐ Skin rash  ☐ Asthma
☐ Chronic allergies (food, pollens, dust)  ☐ Allergic rhinitis (runny nose due to allergy)
☐ Allergic conjunctivitis (itchy, watery eye from allergy)
☐ A natural parent or sibling with allergies to animals or their substances

Do you have allergies to any of the following? (check all that apply)
☐ Mice  ☐ Birds  ☐ Cats  ☐ Rats  ☐ Dogs  ☐ Cows/Horses
☐ Rabbits  ☐ Guinea Pigs  ☐ Sheep/Wool  ☐ Swine  ☐ Other (not listed) ___________
☐ Grasses/Alfalfa/Tree/Weeds  ☐ Latex

Do you have any of the following symptoms that you feel ARE CAUSED BY OR MADE WORSE because of your work with laboratory animals?
☐ Cough  ☐ Chest tightness  ☐ Hives  ☐ Rash  ☐ Runny nose
☐ Sneezing  ☐ Shortness of breath  ☐ Wheezing  ☐ Watery, burning, or itchy eyes

List any concerns or other information the provider should know
☐ I have previously reported my symptoms to Occupational Health Services, and there has been no change in my level of symptoms.
☐ I have previously reported my symptoms to Occupational Health Services and request another evaluation.

Review the statements below and check if any apply to you at this time.
Review the medical information links that apply to you. Contact the Medical Surveillance Coordinator if you need more information.
☐ I am pregnant or planning to become pregnant. Pregnancy Information
☐ I am immunocompromised due to treatment of certain diseases, chronic illnesses, splenectomy or taking immunosuppressive drugs. Immunocompromised Information
☐ I am exposed to sheep or cows and have a valvular heart disease. Q Fever and Valvular Heart Disease Information

Prior to submission review and check:
☐ I verify that all information is accurate and have been referred to and read all pertinent information related to the animals that I come in contact with in my department.
☐ I have reviewed all of the risk-related documents posted on the OSEH web site that refer to my current status.

TODAY’S DATE: ________________________

EMAIL COMPLETED QUESTIONNAIRE TO: MedSurv-OpQuestionnaire@umich.edu OR
FAX COMPLETED QUESTIONNAIRE TO: 847-4765