First Issued 1996, Revised 1999, 12/9/08, 3/11/14, 11/19/14, 1/30/15, 8/3/15, 11/4/15, 12/17/15, 1/21/16, 4/21/16, 8/24/17, 8/27/18, 10/19/18, 11/16/18, 11/10/21(11/10/21 version reviewed and approved by Dr. Francis Pien), 9/12/19, (version 11/10/21 **IACUC approved 12/2/21)**

# University of Hawaii

# Animal and Veterinary Services

# Occupational Health and Safety Program

UNIVERSITY of HAWAI'I SYSTEM

Office of Research Compliance
Animal and Veterinary Services Program

November 10, 2021

TO: Dr. Francis Pien

FROM: Dr Sylvia Kondo, UH Animal and Veterinary Services
Ph: 956-4444, Fax: 956-8528

SUBJECT: Request your review of the AVS Occupational Health and Safety Program (OHSP) Manual

Dr. Pien,

Could you please review the latest version of the AVSOHSP which was last revised on November 10, 2021. Most of the changes (highlighted in yellow or noted in the margins) have to do with the medical surveillance which we currently run through Straub Occupational Health. Could you please sign below after your review, and include any further recommendations to the policy. Please fax this back to me when done.

Recommended Changes to the Policy: None. Approve change

Reviewed and Approved by:

Francis Pien

Dr. Francis Pien

11/12/21

Date

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AVS Occupational Health and Safety Program
First Issued 1996, Revised 1999, 12/9/08, 3/11/14, 11/19/14, 1/30/15, 8/3/15, 11/4/15, 12/17/15, 1/21/16, 4/21/16, 8/24/17, 8/27/18, 10/19/18, 11/16/18, 11/10/21(11/10/21 version reviewed and approved by Dr. Francis Pien), 9/12/19, (version 11/10/21 **IACUC approved 12/2/21)**

## Table of Contents

## I. Policy

The University of Hawaii (UH) is committed to the health and safety of individuals exposed to research animals or their by-products. Individuals in Animal and Veterinary Services (AVS)-operated vivariums may be exposed to health risks such as but not limited to: bites and scratches, ergonomic hazards, falls, allergens, zoonoses, chemical and biological hazards, puncture wounds, machinery, flammable materials, pressure vessels, lighting, high noise levels, electrical shock, and housekeeping hazards. The AVS Occupational Health and Safety Program (AVS OHSP) is designed to promote the safety to those working with animals and minimize the risk of illness or injury associated with working with or around research animals through education, health assessments and medical evaluation.

The Program was developed in conjunction with UH Manoa (UHM) Environmental Health and Safety Office (EHSO), John A. Burns School of Medicine (JABSOM and UH Cancer Center (UH CC) EHSOs, JABSOM Human Resources, JABSOM Administration, UH Animal Welfare and Biosafety Program (Biosafety Office), and the UH Office for Research Compliance using guidance found in the *Guide for the Care and Use of Laboratory Animals, 8th edition*[1] , *Occupational Health and Safety in the Care and Use of Research Animals*[2], and the *Biosafety in Microbiological and Biomedical Laboratories, 5th edition*[3]. The Program manuals are reviewed bi-annually and approved by infectious disease physician Dr. Francis Pien.

It is the policy of UH to comply with all pertinent federal, state and local laws, regulations and guidelines regarding the protection of individuals who are exposed to research animals.

## II. Workplace Hazard Identification and Risk Assessment

Individuals exposed to animals or their by-products used in biomedical and neurobehavioral research may encounter health risks not normally associated with other activities. Identification

[1] *The Guide for the Care and Use of Laboratory Animals*, 8th edition, National Research Council, 2011.
[2] *Occupational Health and Safety in the Care and Use of Research Animals*, National Research Council, 1997.
[3] *Biosafety in Microbiological and Biomedical Laboratories,* 6th edition, Centers for Disease Control and Prevention, 2009.

of hazards is dependent upon a number of factors and is the responsibility of everyone. Those hazards involving animal research may depend upon:

1) The nature of the research for which the animals are used including chemicals, recombinant DNA, and infectious agents
2) The species and health status of animals
3) The duration and/or frequency of animal contact
4) An individual's health status

The AVS Manager or designee will conduct a general risk assessment to identify potential hazards encountered in the vivariums and develop plans and procedures to mitigate these risks. The JBF Director and/or Principal Investigator, in consultation with JABSOM EHSO and the Biosafety Professional will conduct a general risk assessment to identify potential hazards encountered in the JBF and develop plans and procedures to mitigate these risks. General workplace hazards are described in part A below. For protocol-specific activities involving potential hazards, the EHSO, and/or Biosafety Program (Biosafety Office) in conjunction with the Principal Investigator (PI) will provide their recommendations through the Institutional Animal Care and Use Committee (IACUC) and/or Institutional Biosafety Committee (IBC) protocol review process. Individuals requiring access to the JBF and using human pathogens or other biological agents, will also be provided with JBF-specific OHSP training.

Employees who are highly susceptible to infection under study (immunocompromised) or for whom infection might be unusually hazardous (e.g., pregnant women) may have restricted access to potential hazardous areas in the vivarium based on the Health History Questionnaire (HHQ) assessment by a Health Professional (HP), described in section VI.C. Access into these areas should also be restricted to these individuals where vertebrate animals are experimentally or naturally infected with hazardous materials. All employees and especially those of child-bearing age will be provided with information regarding immune competencies and conditions that may predispose them to infection. Individuals having these conditions will be encouraged to self-identify for appropriate counseling and guidance by a HP.

All employees will be advised of potential hazards in the vivarium. Only employees with training and demonstrated proficiency will be assigned to potentially hazardous work assignments.

Hazards that may be encountered in the Manoa and Kakaako vivariums (vivariums) include, but are not limited to:

## A. General Workplace Hazards

### 1. Animal Bites and Scratches

Rodents can bite and scratch people. Diseases and infections may spread by bites scratches; therefore, researchers must take special precautions when working with animals. Training and

documentation for safe handling of animals is required before working with animals in the vivarium.

2. Ergonomic Hazards.

Musculoskeletal injury (sprains and strains) from lifting heavy objects such as caging, racks, bags of feed and bedding is a problem for animal care staff. Repetitive motions may also pose a hazard in animal facilities. Employee education such as *Back Injury and Prevention,* and engineering controls are applied to reduce potential for ergonomic injuries.

3. Falls

Falls can occur on slippery floors or from unsafe steps. All persons entering the vivariums are required to wear closed-toe shoes. AVS employees are provided an allowance for slip-resistant, steel-toed safety shoes based on the completed risk assessment State of Hawaii Hazard Assessment Certification form. AVS Student Assistants are assigned safety shoes after completing a one-year probation at AVS. Prior to passing probation, students are provided rubber work boots, or may provide their own work shoes appropriate for the hazards encountered on the job. All AVS employees using ladders are required to take ladder safety training. Signage is used to indicate slipping hazards in the vivariums.

4. Allergens

Allergens include but not limited to, animal fur, skin flakes (dander), serum, urine, saliva, protein in animal feed, animal tissues and secretions, mite droppings, and fungal spores are commonly found in the vivariums. Persons exposed to animals may develop allergic reactions, including rhinitis[4], conjunctivitis[5], asthma, dermatitis[6], and may be as severe as anaphylaxis[7]. Because of their widespread use rabbits and rodents are the most common research animals that cause allergic reactions. A Health History Questionnaire (HHQ) is completed by individuals and reviewed by a HP, as described in section VI.C, to determine their risk for allergies.

"Allergic reactions to animals are among the most common conditions that adversely affect the health of workers involved in the care and use of animals in research. " (Occupational Health and Safety in the Care and Use of Research Animals, NRC, 1997, pp 51-64)

5. Zoonoses

A zoonoses is any disease or infection transmitted between animals and humans including bacteria, viruses, parasites, rickettsia, fungi, parasites. Examples include Leptospirosis and tuberculosis. The IACUC and Biosafety Office reviews potential risks and plans to mitigate

[4] rhinitis – inflammation of the mucous membranes of the nose
[5] conjunctivitis – inflammation of the membranes of the eye
[6] dermatitis – inflammation of the skin
[7] anaphylaxis – an unusual or exaggerated allergic reaction which may be life threatening

exposure to zoonoses. The University Veterinarian's office provides protocol specific zoonoses training.

6. Hazardous Chemicals

Hazardous chemicals commonly used in the vivariums include but are not limited to, cleaning fluids or powders, decontamination solvents, alkali or acids used in heavy equipment.

7. Noise

Exposure to high noise levels from the operation of equipment such as cage washers or noise associated with daily operations of the animal facility can pose a hazard. During new employee orientation, AVS staff are assigned hearing protection and educated on its use for high level noise operations such as in the cage wash area. In July 2019, noise levels were measured by JABSOM EHSO for both Manoa and Kakaako vivarium cage wash facilities while heavy machinery was running. Historically, machinery at both facilities operate for no more than four hours each day. The opinion of the audiologist, based on her assessment of the data and the cage wash staff's work schedule, was that a formal hearing conservation program was not currently needed. Although a formal hearing conservation program will not be initiated, the cage washers are required to wear AVS-issued hearing protection while working in the Kakaako cage wash facility. Individuals working in the Manoa cage wash are not required to use hearing protection because noise levels are much lower than 85 dBA and the staff work much shorter shifts in the facility than at Kakaako. Hearing protection is available upon request for the Manoa cage wash facility.

"Exposure to intense noise can result in loss of hearing. Chronic noise-induced hearing loss is permanent condition and cannot be treated medically. Exposure to an intense noise for a short period can cause temporary or permanent loss of hearing. OSHA limits employee exposure to noise to 90 decibels measured on the A scale of a standard sound-level meter at slow response (dBA) averaged over an 8-h workshift (29 CFR 1910.95). The time-weighted average must be lower than 90 dBA if the workshift is longer than 8 h (29 CFR 1910.95). Where level exceed 85 dBA, the exposed employees need to participate in a hearing-conservation program that includes monitoring, audiometric testing, hearing protection, training, and record-keeping (29 CFR 1910.95 c-o). Hearing loss is not the only adverse effect of exposure to noise. Noise can make speech difficult, cause loss of concentration, distract workers, and increase fatigue (NSC 1988). In an animal care facility, noise can result from animals, and from equipment, such s cage washers, high pressure air cleaning equipment, and wet vacuum systems operated in a confined space." (Occupational Health and Safety in the Care and Use of Research Animals, NRC, 1997, pp 41-42)

8. Sharps

Sharps include but are not limited to, puncture wounds from needles and sharp instruments. Puncture resistant red and yellow sharps containers are located throughout the vivariums. The Biosafety Office trains researchers and staff on safe handling and disposal of sharps.

"Improper disposal of sharps with regular trash can expose custodial staff to puncture wounds and cuts and potentially to exposure to infectious agents and hazardous chemicals. Special care is required in the use of needles and syringes to avoid needlestick injuries. This hazard presents a substantial risk for occupationally acquired infection in inoculating or drawing blood from laboratory animals (Miller and others 1987). Appropriate restraint or sedation of animals during procedures entailing the use of sharps decreases the risk of sharp injury to workers." (Occupational Health and Safety in the Care and Use of Research Animals, NRC, 1997, pp 34-35)

9. Flammable Agents

Flammable agents include but are not limited to, animal bedding, paper gowns, plastic animal cages, flammable solvents, sterilizers, and volatile anesthetic agents. Safety data sheets are available with information on flash point. Sterilizer training is required before an individual can work independently.

10. Pressure Vessels

Training on proper use of sterilizers is required before an individual can work independently.

11. Compressed Gas Cylinders

Compressed gases such as carbon dioxide are used for euthanasia of animals and oxygen for anesthetic machines.

Use of compressed gases requires anticipating chemical, physical, and health hazards. Cylinders that are knocked over or dropped can be very dangerous. If a valve is knocked off, the cylinder can be a lethal projectile. Accidental releases may result in an oxygen depleted atmosphere or adverse health effects. In short, improper handling and use can cause structural damage, severe injury, and possible death. Training is recommended when working with compressed gasses. Contact EHSO for training information.

12. Lighting

Poor lighting can cause visual fatigue or create safety hazards that cause trips, slips, or falls. Light levels are set to facilitate worker safety while working in the vivariums during the day. Those working at night under red light, are instructed to adjust their eyes to be accustomed to low lighting before starting their activities.

13. UV Radiation

UV radiation includes but is not limited to UV germicidal lamps in the vivarium. Employees are instructed to protect their eyes and skin when working around UV germicidal lamps.

14. Electricity

Ground-fault interrupters (GFI) outlets are used for equipment used in moist environments. Equipment permanently connected to electrical power strips are not allowed by EHSO, and this is checked during annual lab inspections.

15. Housekeeping

Work surfaces are kept clean and clear of obstructions, waste, and other materials. Clutter creates cramped and unsafe working conditions. This prevents trip hazards. Emergency egress routes, such as hallways, are kept clear of clutter and appropriate safety clearances observed.

16. Machinery

Include, but not limited to, conveyor belts such as the tunnel washer, floor polishers, cage washers, tissue digester, and other equipment have potential to cause injury. Signage is required outside cage washers with instructions on use of internal release mechanisms to allow emergency escape if the equipment is inadvertently started while operator is inside the chamber. Signage is required to be visible inside the rack washer to identify where specifically to push on the door to open it from the inside in case of an emergency. Signage is also provided near all external emergency stop buttons on the machines.

## B. Specific Hazards Associated with Experimental Procedures

1. Protocols Involving Biologicla materials or Recombinant DNA in Animals

Researchers who are planning studies involving experimentally or naturally infected animals should be familiar with the *Biosafety in Microbiological and Biomedical Laboratories (BMBL), 5th or latest edition.* In addition, the IACUC and the IBC will review all protocols that propose the use of these materials in animals. Training is required for individuals using infectious or recombinant DNA in animals. This training may include but is not limited to, *Blood Borne Pathogens, General Biosafety, Biological Items Transport Awareness Training, Understanding and Use of Biological Safety Cabinet, Respiratory Protection Training and Animal Biosafety Level 1, 2).* For more detail see *Policy for Protocols using Biological Materials/Toxin in Animals (AVS-Operated Vivariums)* **appendix 1**.

2. Protocols Involving Chemicals in Animals

Specific procedures describing handling of chemicals from receipt through disposal of animal waste and processing of tissues must be described in an IACUC protocol and approved. Safety Data Sheets should accompany the IACUC protocols in which chemicals will be used in animals. Chemicals of which the hazard is unknown and used in animals will require discussions between

the researcher and EHSO for guidance. Training is required for individuals using chemicals in animals. This training may include but is not limited to, *Hazard Communication Training,* and *Hazardous Waste Generator* training. The IACUC and EHSO will review all IACUC protocols involving chemicals in animals. For more detail see *Hazardous Chemicals in Animals Policy* **appendix 2**.

3. Protocols Involving Ionizing Radiation in Animals

Equipment involving ionizing radiation must be checked regularly and certified safe by the manufacturer, as well as approved by the UH Radiation Safety Office (RSO). All IACUC protocols involving ionizing radiation in animals will be reviewed by the IACUC and RSO. Training may include but not limited to, *Radiation Safety Training.*

4. Protocols Involving Animal or Human Blood

Individuals who have potential for occupational exposures to blood or other potentially infectious materials during their normal job duties must be covered by a Blood Borne Pathogen (BBP) Plan specific to the hazards encountered on the job. They must receive annual training on the BBP.

## III. General Health and Safety Requirements

The State of Hawaii Occupational Safety and Health (HIOSH) standards require that employers provide safe and healthful work places and practices by eliminating or reducing existing or potential hazards. The UH accomplishes this by:

### C. Posting of Notices/Emergency Telephone Numbers

1. Posting of Notices

Each department shall keep posted the orange and yellow poster “Safety and Health Protection on the Job” which informs employees of

1) Protections and obligations under the law
2) Availability of assistance
3) Information including copies of the law and specific safety and health standards from EHSO

Notices are posted in accordance with Section 12-51-2, Title 12 of the HIOSH regulations.

2. Emergency Telephone Numbers

Phone numbers and addresses of doctors, hospitals and ambulance services to contact in the event of an emergency, shall be posted in a prominent place in the lab. Campus emergency numbers: 956-6911 (X66911) for Manoa and 692-1911 (X21911) shall also be posted.

## D. Hazard Communication

### 1. Hazardous Communication Program

The term "hazardous" refers to any substance or material, which could cause personal harm or injury to persons who may become exposed to the substance(s). These include but are not limited to, cleaning solvents, disinfectants, radioactive isotopes, endotoxins, etc. Since the safe handling and use of chemicals is of primary concern, the Hazardous Communication Program was developed. This program introduces a set of procedures designed to minimize the risk of chemical exposure and to comply with the State of Hawaii Division of Occupational Safety and Health (HIOSH) Hazard Communication Standard (HazCom). The major components of UH's HazCom Program are provided on the EHSO website https://www.hawaii.edu/ehso/wp-content/uploads/2016/07/HAZCOM.pdf

The HazCom Program has two primary goals:

1) Clearly identify hazardous substances being used in the workplace.
2) Inform the individual about hazardous properties of the substances, as well as methods of personal protection or engineering controls that will ensure their well-being while handling the material.

The HazCom Program includes the following information:

1) Description of how labels, Safety Data Sheets (SDS) and training are used to inform employees
2) Description of the method the UH uses to inform employees about the hazards of non-routine tasks and unlabeled pipes
3) Description of how the UH informs contractors of hazardous substances that they may encounter
4) Standardized form for chemical inventories

### 2. Hazardous Substance Identification and Inventory

Each department is responsible for maintaining an inventory of all chemicals used in its operations. The inventory at a minimum shall include each chemical's name, manufacturer, and quantity. The inventory is to be updated at least annually, with obsolete items removed and new items added as necessary. All expired or unneeded hazardous chemicals will be submitted to EHSO for proper disposal.

### 3. Safety Data Sheets (SDS)

Manufacturers of chemical are required by law to develop SDSs for each of their products. A SDS is a standardized document which contains sections on safety information including but not limited to, methods of personal protection, flammability, reactivity, special handling instructions, spill cleanup information, waste disposal requirements. Most manufacturers

routinely include the SDS with their product shipped to campus. Companies must also provide a SDS for their products upon request.

4. Employee Information and HazCom Training

Each supervisor must provide training to their employees upon their assignment to a work area where hazardous substances are present. For details on the specific content of training refer to the UH's HazCom Program. UHM EHSO can also provide assistance to the departments for HazCom training.

5. Labeling

Primary labels affixed to manufacturer's original containers must be in good condition. Labels must be in conformance with the Globally Harmonized System Classification and Labeling of Chemicals (GHS) which provide information on health and physical hazards and other special hazards.

6. Chemical Hazards Used in Animals

All IACUC protocols involving chemicals used in animals are also reviewed by both EHSO during the IACUC review. Refer to *Hazardous Chemicals in Animals Policy* for more details in **appendix 2**. The respective safety offices will:

1) Clearly identify hazardous substances being used in the workplace.
2) Inform AVS management about the hazardous properties of the substances, as well as methods of personal protection that will ensure their well-being while handling the material.

## E. Waste Management

Details regarding the disposal of animal, chemical, and/or biological waste from the AVS vivariums can be found in *Waste Management Procedures* **appendix 3**. Training may include but is not limited to, *Hazardous Waste Generator.*

## F. Personal Protective Equipment (PPE)

Some animal species or their tissues, body fluids and excretions may transmit zoonotic pathogens to persons coming into contact with them. Therefore, persons handling animals or their tissues must take every precaution to lessen the zoonotic danger posed by the animals. At the same time they must protect the well being of the animals and minimize the effects of stress on the experimental parameters under study. It is incumbent upon the PI or supervisor for the facility to identify potential hazards and provide appropriate training and protection for these zoonotic pathogens.

Similarly, persons must take precautions when working with chemical agents or test materials as part of the animal care regimen or study. The use of chemical agents (disinfectants, cleaning

agents, etc.) and test materials (reagents, test kits, drug, and needle/syringes, etc.) shall conform with all safety policies and good laboratory practices as to lessen the physical danger of these items.

Protective clothing includes such items as lab coats, coveralls, disposable or chemical-resistant aprons, and boots. Protective devices include gloves made of vinyl, nitrile or latex, filter respirators, safety glasses or goggles, face shields, ear plugs and sharps containers. All of these items should be made available to employees who are involved with the care and use of animals. Records should be kept by each facility and its users as to when the equipment is assigned to employees, when training is provided, and ensuring that they are properly maintained and replaced as needed.

Some general guidelines to follow when using PPE are:

1) Carefully inspect all protective equipment prior to use. Do not use defective equipment.

2) Steel-toed shoes or protective boots should be worn by animal handlers when handling heavy items such as cage racks, cages, feed and corrosive chemicals. Shoes or sandals with open toes shall not be worn in the vivarium or labs.

3) Skid resistant shoes shall be worn where there is a slipping hazard.

4) Long pants shall be worn when working around chemicals.

5) Long hair shall be held in place behind the head.

6) A full-body-length rubber, plastic or neoprene apron, or liquid resistant gown, appropriate for the material being handled shall be worn if there is risk of splash or spill.

1. PPE for Non-biological Material Exposure

Requirements may be found in Section 12-64.1-1, Title 12 of the HIOSH regulations. This standard covers protective equipment for eyes, face, head, hands, and feet. For more details in identifying non-biological material hazards see Hazard Assessment Guide found at http://manoa.hawaii.edu/opf/documents/safety/Dept.%20Health%20&%20Safety%20Guide/Departmental%20Health%20and%20Safety%20Guide.pdf

If such hazards exist or potentially exist, the supervisors/PI, with the assistance of EHSO, shall select and require each affected individual to use the type of PPE that will protect against the identified hazards. PPE must properly fit each individual.

A. All chemicals including disinfectants and cleaning agents must be handled as to avoid splashes to the skin and eyes.

a. Eye protection (safety glasses, chemical-resistant goggles, or face shield) shall be worn at all times when handling chemicals. Ordinary prescription glasses are not considered effective eye protection since they lack necessary shielding. Chemical-resistant goggles should be worn over the glasses or prescription safety glasses be provided to employees required to wear corrective lenses.

b. The wearing of contact lenses when handling chemicals is very controversial. Safety glasses or chemical-resistant goggles shall be worn over contact lenses when handling chemicals.

c. Gloves made of material known to be resistant to permeation by the substance shall be worn when working with corrosive, toxic, allergenic or sensitizing chemicals, rough or sharp-edged objects, very hot or very cold materials. No one glove can protect against all hazards. Cloth gloves, while not appropriate for use around liquids, can protect against light abrasive materials and moderate temperature changes. Synthetic or rubber gloves protect against corrosives, solvents, and poisons. Consult the manufacturer's performance chart or contact EHSO for assistance.

2. Corrosive Chemicals

Materials are classified as corrosive if they are capable of rapidly eroding building material or metals, or burn, irritate or destructively attack organic tissues such as skin, eyes, lungs, and stomach. Employees caring for animals may use detergents, activators, de-scalers and disinfectants that contain corrosive chemicals in their formulation. Examples of chemicals in these products that have corrosive properties are:

Potassium hydroxide
Phosphoric acid
Sodium hydroxide
Hydrochloric acid
Chlorine
Sodium hypochlorite

Safe handling procedures will vary with each operation and the type and concentration of the corrosive chemicals; refer to product's SDS for more information. The following general guidelines should be followed for procedures involving acids and bases:

d. Never pour water into acid. Slowly add acid to the water and stir.

e. Suitable facilities, such as a safety shower and eyewash, shall be located within 100 feet of the work area for quick drenching or flushing of the eyes and body. EHSO personnel inspect and flush safety showers periodically. Eyewash stations should be flushed on a monthly basis by users.

f. When disposable containers are completely emptied of their contents, flush them thoroughly with water before throwing them away.

g. Never dispose of acids or bases in the sanitary sewer system (i.e. down the drain) until neutralized (pH 5.5-8.5). Neutralization should be conducted in a fume hood, then the solution poured slowly down the drain with copious amounts of water; i.e., leave the water running for approximately 5 minutes.

h. Contact Hazardous Waste Program at (808)-956-3202 for assistance with disposal of large quantifies (more than 2 gallons or 1 pound) of acids and bases.

i. All facilities should have access to a spill kit (specialized absorbents for acids and bases for neutralization). Never use combustible organic materials (sawdust, excelsior, wood scraps and shavings, paper, rags, or burlap bags) to absorb or clean-up spills.

3. PPE for Biological Material Exposure

All protocols using biological material in animals are reviewed by the IACUC and the IBC. Requirements for PPE and engineering controls may be found in the *Biosafety in Microbiological and Biomedical Laboratories, 5th edition (or latest edition) (BMBL)*. If hazards or potential hazards exist, the supervisors/PI, with assistance from the Biosafety Office, shall select and require each affected individual use the type of PPE that will protect against the identified hazards. PPE must properly fit each individual.

4. Training Requirements

Each department supervisor/PI or designated representative must provide training to each employee required to use PPE. Training will include but is not limited to:

1) When PPE is needed
2) What PPE is needed
3) How to wear PPE
4) Proper care, maintenance, service life and disposal of PPE

Supervisors/PIs must certify in writing that the individual has received and understands the training.

5. Respiratory Protection Program

Refer to UHM *Respiratory Protection Program, 2018 (or later version)* at http://www.hawaii.edu/ehso/wp-content/uploads/2016/11/RESP.pdf. See **appendix 4.**

Summary of requirements

1) Development of a written respiratory protection program.
2) Respirator users shall be evaluated by a licensed health care professional to determine if they are physically able to perform work while using a respirator. Follow-up medical evaluations occurs when:
    a. An employee reports medical signs and symptoms related to ability of respirator use
    b. The physician, health professional, supervisor or EHSO program manager deems it necessary; or
    c. A change occurs in the workplace conditions (e.t. physical work effort, temperature, etc.) that may result in a substantial increase in the physiological burden of the user.
3) Respirators shall be selected based upon the contaminant hazards presented to the wearer.
4) Training shall be provided annually and include information on selection of respirators; inspection, maintenance, storage and cleaning of respirators; limitations and emergency procedures; and methods of donning, adjusting and fit-checking.
5) NIOSH-certified respirators must be used. See links to NIOSH-Approved respirators https://www.cdc.gov/niosh/npptl/topics/respirators/disp_part/n95list1.html

    https://www.cdc.gov/niosh/npptl/usernotices/counterfeitResp.html

    https://www.cdc.gov/niosh/npptl/usernotices/AdditionalTips.html
6) All negative pressure respirators shall be fit-tested on an annual basis.
7) Compressed air used for supplied air respirators shall comply with the air quality requirements for Grade D Breathable Air described in CGA Commodity Specifications G-7,1-1989.
8) Current records for training, fit-testing, medical evaluation and hazard assessment should be maintained by the supervisors.
9) The UHM Respiratory Protection Program shall be reviewed annually with modifications implemented as necessary.

Voluntary Use of Respirators

When an employee chooses to use a dust mask but is not required to wear one for protection against a hazard, the employee does not need training or fit-testing but must be informed of **appendix 4** of the University's respiratory protection program. If an employee chooses to use a

non-disposable, tight fitting facepiece (i.e. rubber half-face) but is not required to, then the employee must comply with all requirements of the UH's respiratory protection program.

## G. Work Site Inspections

1. Hawaii Administrative Rules Section 12-60-1, Title 12 of the HIOSH Regulations

This regulations may be found at: http://labor.hawaii.gov/hiosh/files/2012/12/12-60-General-Safety-Health-Requirements.pdf This section specifies that periodic inspections to identify unsafe conditions and work practices must be conducted. The purpose of the inspections is to identify and correct potential problems before employees become injured or property is damaged. Conducting inspections serves as one of the elements of a good accident prevention program, which helps to maintain a greater safety awareness among all personnel.

2. EHSO Responsibilities

EHSO conducts annual inspections of the vivariums, labs, shops and administrative areas. EHSO also conducts inspections upon request. A Laboratory Inspection Checklist is used by EHSO.

3. Supervisor/PI Responsibilities

Inspections should be conducted at least biannually by the supervisor/PI or designated representative. Problems noted in the inspections should be addressed immediately by supervisory personnel. EHSO can assist with resolving problems.

4. The Biosafety Program (Biosafety Office) Responsibilities

Conducts annual inspections of areas in JABSOM and UH CC vivariums and labs where biological materials are used. IBC members may accompany the biosafety staff, especially if a new or renewed protocol is going through the review process.

5. The IACUC Responsibilities

Conducts semi-annual inspections of areas in JABSOM and UH CC where vertebrate animals are used.

## H. Worker's Compensation and Reporting

1. The PI/Supervisor Responsibilities

Is responsible for informing employees of their rights and responsibilities under the Worker's Compensation Law (WCL).

Under the WCL, every work related injury or illness to an employee resulting in the absence of one or more days and requiring medical services other than first-aid treatment must be reported and documented in Form WC-1. For further instructions, refer to *UH Procedure A9.720* on Worker's Compensation, found at:
http://blog.hawaii.edu/jabsomohr/files/2013/02/Workers-Compensation-A9.720.pdf

2. Reporting

All illness and injury experienced during work should be reported promptly to the supervisor. Records should be kept of such incidents, and appropriate medical attention should be sought when necessary.

1) *All UH employees*

The supervisor shall forward the worker's compensation (WC) form immediately to the WC Coordinator. File the form no later than seven days after the employee notifies the supervisor of the injury/illness. If the employee decides not to seek medical attention, a letter signed by the affected employee should be on file, stating that they did not choose to seek medical attention at this time.

2) *All RCUH and University Health Partners employees*

Any industrial accident related injury/illness shall be reported to the injured employee's PI/designee immediately after its occurrence. The employee must provide Medical Certification from any lost work time to accompany the employee's timesheet. The PI/designee shall conduct an accident investigation, complete the *Supervisor's Report of Industrial Injury Form* and submit it to Research Corporation of the University of Hawaii (RCUH) Human Resources Office within 24-hours of its occurrence. The completed form shall be forwarded to the WC Coordinator within 24 hours of its occurrence. The supervisor must report the accident immediately to the Director of Human Resources if the accident results in either the death of the employee, and/or hospitalization of 3 or more employees, and/or injury to employee and property damage of $25,000 or more.

The PI/supervisor maintains an accident prevention program which includes safe working procedures, holding periodic safety meetings with employees, documenting meetings and related safety issues, and conducting periodic self-inspections.

## I. Recordkeeping

All matters pertaining to employee/student health and safety concerns must be fully documented. Written records of activities, such as development of special safety policies and procedures, training sessions for managers and employees, and minutes of safety meetings, must be maintained at the appropriate level as specified in the following:

1. EHSO Responsibilities

Is responsible for documenting all education programs provided to individuals by EHSO staff, including a participant list, date of presentation and topic discussed.

2. Biosafety Responsibilities

Is responsible for documenting all education programs provided to individuals by Biosafety staff, including a participant list, date of presentation and topic discussed.

3. PI/Supervisor Responsibilities

Is responsible for but not limited to, maintaining records concerning employee injuries, incident reports, grievances involving safety matters, personnel exposure records, and training. Exchange of safety information through formal presentation and/or one-to-one meetings at the work site with employees must be documented.

Records of all safety-related matters are subject to periodic review by EHSO, HIOSH and applicable agencies conducting workplace inspections. They should be maintained in a clearly identified, central file within the department for ease of access.

### J. First Aid

Employers are required by OSHA Standard 29CFR 1910.151 found at: https://www.osha.gov/pls/oshaweb/owadisp.show_document?p_table=DIRECTIVES&p_id=1793 to have a person or persons properly trained to render first aid for worksites that are not in close proximity to a medical facility. The first-aid program for JABSOM/UH CC reflects the known and anticipated risks/hazards of the facility. The contents of the first-aid kit should be representative of what injury or illness might be anticipated. The kits should be checked regularly to ensure that they have adequate quantities and are readily accessible. Staff is made familiar with the location of the first-aid kit, the names of the first-aid providers and telephone number of medically qualified personnel.

## IV. Standard Operating Procedures

### A. Personal Hygiene

i. Standards

High standards of personal hygiene are essential. Hands must be washed after handling chemicals, infectious materials, animals, and before leaving the animal facility. Animal rooms shall be equipped with anti-microbial soap and dispensers and shall be utilized after hands-on work with animals. Shower facilities are also available for employees handling animals.

Note: Avoid the use of solvents for washing skin. Solvents remove the natural protective oils from skin and can cause irritation and inflammation. In some cases, washing with solvent may facilitate absorption of toxic chemicals.

ii. Personal Items from Outside Vivarium

Personal effects such as backpacks and books that can serve as fomites, and are porous, should not be taken into animal rooms. Notepads and computers dedicated for research use or

husbandry care are allowed in animal rooms. When possible they should be placed in a plastic bag and the outside disinfected with Clidox® before entering and exiting the vivariums.

iii. Protective Outer Clothing

Protective clothing and devices shall be worn by all individuals working with animals or their by-products. Outer garments (lab coats, gowns, coveralls and disposable aprons) shall be worn in animal rooms. Gowns and uniforms are not worn outside the animal facility. Covered shoes must be worn when working in the animal facility. Depending on hazards, other specifications for shoes and insoles may be required in the facility. For example, AVS employees routinely wear skid-resistant, steel-toed shoes dedicated to each animal facility.

Additional PPE is worn based on the risk assessment and identified hazards. These include but are not limited to, protective eyewear, hair bonnets, face masks, face shields, and respirators.

Researchers may wear a sturdy lab coat over street clothes when working with their animals in the vivarium, in addition to any protocol specific PPE requirements.

AVS staff in dedicated scrubs who briefly leave the vivarium to complete a task, such as emptying trash at the end of the day or receiving supplies in the dedicated vivarium loading dock may wear an AVS-issued blue lab coat over their scrubs to complete these tasks outside the vivarium.

iv. Gloves

Gloves are worn to protect hands from exposure to hazardous materials. Gloves must not be worn outside the animal rooms or labs. A risk assessment should be performed to identify the appropriate glove for the task and alternatives to latex gloves should be available.

v. Hand washing

Individuals must wash their hands after handling animals and before leaving the areas where infectious, chemical hazards, and/or animals are housed or are manipulated. Hand washing should occur after removal of gloves.

vi. No Eating, Drinking, Smoking, or Applying Cosmetics

Eating, drinking, smoking, applying cosmetics, handling contact lenses, and storing human food for consumption must not be permitted in laboratory areas and in the vivariums. Food must be stored outside the laboratory area in cabinets or refrigerators designated and used for this purpose.

AVS animal care staff may take their meal and rest breaks in AVS-dedicated break rooms wearing their work scrubs. The staff break rooms are designated transition zones, are secured, and restricted to AVS-authorized individuals only. The Vivariums Break Room Policy (**Appendix**

**11**) provides a plan to mitigate risks for individuals wearing street clothes who co-mingle with AVS staff for official business in the AVS break rooms.

vii. Vivariums Break Room Policy

The Vivariums Break Room Policy (**Appendix 11**) identifies potential hazards and ways to mitigate human health risks that may be associated with the AVS personnel break rooms. All persons requiring entrance into the break rooms will be pre-approved by AVS for access. All personnel will be educated on the potential hazards associated with the room (allergens, potential hazards that may be inadvertently carried into the room from the vivariums). A disclaimer as to the potential hazards will also be posted on entry doors to the break rooms.

## B. Housekeeping

Housekeeping is directly related to safety and must be given importance of equal value to other procedures. Lack of good housekeeping reduces work efficiency and may result in accidents.

1) Access to emergency showers, eyewashes, fire extinguishers, exits and circuit breakers shall never be blocked or obstructed. Eyewash stations should be flushed gently once a month to ensure that a fresh supply of non- contaminated water is readily available in the event of an emergency.

2) All aisles, corridors, stairs and stairwells shall be kept clear of chemicals, equipment, supplies, boxes and debris. Visible and audible fire alarms shall not be obstructed. This allows unobstructed egress from a building in the event on an emergency.

3) Food and drink for human consumption shall **not** be kept in the same refrigerator used to store chemicals, biological and research samples. Eating and office areas must be clearly separated from animal rooms.

4) All cages should be regularly inspected for sharp edges and protrusions to prevent cuts or abrasions from metal parts.

5) The floors of labs and the animal rooms should be kept free of spillage from water, chemicals, dirty bedding and dirt.

6) General housekeeping procedures which suppress the formation of aerosols such as the use of wet mop or a vacuum cleaner equipped with a high efficiency particulate air (HEPA) filter to remove particulates should be used.

7) In the labs, necropsy, and procedure rooms, sharp instruments and needles can cause severe lacerations and puncture wounds; correct methods of their use and disposal must be followed. Blood contaminated sharps must be disposed properly as described in section IV.3.d above.

8) Controlled substances must be kept in a locked cabinet and issued only to authorized staff.

9) Fire and shock hazards should be avoided by the proper use of electrical cords and proper design of electrical outlets suitable for the function. For example, extension cords shall not be used in lieu of permanent wiring for electrical equipment. GFI and waterproof covered duplex outlets shall be used in areas where water is used.

### C. Bites and Scratches

If an animal bite or scratch occurs, immediately secure the animals and stop working. Remove PPE and wash the affected area thoroughly with soap and water for 15 minutes. Topical antibiotic may be applied. All animal bites and scratches received during the workday will be recorded in the Bite/Scratch logs located in the AVS employee break rooms in Kakaako BSB 123 and Manoa Biomed T210. The log includes the injured person's name, date and time of incident, PI name and protocol number under which the animal was kept, whether the animal was genetically modified, and a brief description of the incident. The incident shall be reported to the supervisor/PI of the individual and the personnel officer of the respective department, for documentation for Worker's Compensation purposes. Incidents involving recombinant DNA, or infectious materials used in animals, must be reported to the Biosafety Program Manager within 24 hours. For mucocutaneous exposure see **appendix 4.**

### D. Use of Hazardous Materials in Experimental Animals

If a suspected biological or chemical exposure occurs, immediately stop work, secure animals, and contact a supervisor. If the exposure is through the skin or mucous membrane, immediately wash the area thoroughly with water for 15 minutes. If the exposure is through inhalation, get to a well ventilated area right away. Together with the supervisor, contact EHSO or Biosafety immediately for further guidance and documentation. Individuals working with ABSL3 agents should be familiar with and follow the *JABSOM Biocontainment Facility (JBF) Incident Response Plan.*

### E. Ergonomic Hazards

The following basic lifting procedures are recommended to reduce or prevent lifting injuries.

1) Plan your lift and test the load. Before you lift, think about the item you are going to move, and ask yourself: "Can I do this alone?" "Is it too awkward for one person?" "Is

the path clear?" Also, test the load to see approximately how heavy it is before lifting. For example, AVS limits the load in each garbage can to be dumped in the dumpster at Biomedical Sciences Building to 30 lbs., in order to facilitate throwing contents into upright dumpsters.

2) Ask for help. If the load is too heavy or too awkward for you to lift, ask for assistance.

3) Get a firm footing. Keep your feet apart for a stable base and point your toes out.

4) Bend your knees. Don't bend at the waist. Keep the principles of leverage in mind at all times.

5) Tighten your stomach muscles. Use intra-abdominal pressure to support your spine when you lift, offsetting the force of the load. Train your muscles to work together.

6) Lift with your legs. Let your leg muscles do the work of lifting. Don't rely on your weaker back muscles.

7) Keep the load close. Don't hold the load away from your body. The closer it is to your spine, the less force it exerts on your back.

8) Keep your back upright. Whether lifting or putting down the load, don't add the weight of your body to the load. Avoid twisting.

## F. Compressed Cylinder

The following guidelines will help ensure safe handling, use and storage of compressed gas cylinders.

Receiving and Storage

1) Be sure to have a return agreement for empty cylinders with suppliers prior to purchase since disposal of compressed gas cylinders is difficult and very expensive.

2) Cylinders should not be accepted unless the cylinder contents are clearly labeled. Color coding only should not be accepted, since it does not constitute adequate labeling.

3) Do not accept cylinders which are damaged or do not have a valve protection cap.

4) All gas cylinders in use shall be secured in an upright position in racks, holders, or clamping devices. When cylinders are grouped together, they should be individually secured and conspicuously labeled on the neck area. Do not secure with fiber straps which may lose its integrity in the event of a fire.

5) Oxygen cylinders shall never be placed near highly combustible materials, especially oil and grease, or near stocks of carbide and acetylene or other fuel gas cylinders, nor near any other substance likely to cause or accelerate a fire.

6) Cylinders should have current hydrostatic test date (normally less than 5 years old for steel and 3 years old for aluminum) engraved on the cylinder. Cylinders should be returned to the supplier for servicing prior to the expiration date.

7) Do not place cylinders near heat, sparks or flames or where they might become part of an electrical circuit.

8) Do not store cylinders in exit corridors or hallways.

Handling and Use

1) Only Compressed Gas Association fittings and components are permitted for use with gas cylinders. Only use regulators approved for the type of gas in the cylinder. Do not use adapters to interchange regulators.

2) Open cylinder valves slowly and away from the direction of people (including yourself). Never force a gas cylinder valve. If the valve cannot be opened by the wheel or small wrench provided, the cylinder should be returned.

3) No attempt shall be made to transfer gasses from one cylinder to another, to refill cylinders, or to mix gases in a cylinder.

4) All cylinders are to be considered full unless properly identified as empty by the user. Empty cylinders must be returned to the supplier and not accumulated.

5) Compressed gases must not be used to clean your skin or clothing.

6) Never heat cylinders to raise internal pressure.

7) Always leave at least 30 psig minimum pressure in all “empty” cylinders. Do not leave an empty cylinder attached to a pressurized system.

## V. Employee Safety Training

Effective dissemination of safety information is essential in the success of a health and safety training program. Hawaii Administrative Rules Section 12-60-2, Title 12 found at:

http://labor.hawaii.gov/hiosh/files/2012/12/12-60-General-Safety-Health-Requirements.pdf requires that safety training for employees be provided in the following: "general safe work practices and specific instructions with respect to hazards unique to the employee's job assignment."

The purpose of providing safety training to employees is to help them clearly understand the risks of hazards they face on the job and to provide information concerning methods of personal protection which will safeguard them while performing those tasks.
UHM and JABSOM EHSO provides training programs in Hazard Communication, Radiation Safety, Fire Safety and Infectious Waste Management. Biosafety can provide training on infectious waste management. Most training program material is general in nature so as to be applicable to a great number of departments.

Sessions can be scheduled through EHSO and/or Biosafety for presentation to AVS employees/students as needed. A complete listing of training classes may be found at the EHSO website www.hawaii.edu/ehso. Or JABSOM EHSO at https://jabsom.hawaii.edu/admin/afo/ehso/

Specialized training sessions dealing with an employee's unique job assignment must be developed by the PI or Supervisor. It is the supervisor's responsibility to understand his/her employee's job tasks and related hazards. For example, the operation of large autoclaves or incinerators may require specialized training. HIOSH standards require that supervisory personnel inform their employees about hazards they face on the job.

A long-range Departmental training plan should be developed which sets priorities for training sessions, including a schedule of presentations.
Consideration should also be given to frequency required for retraining purposes. These refresher programs should be incorporated into the long-range plan. Complete documentation of all training activities must be maintained.

## A. Training available for those enrolled in the AVS OHSP is as follows:

| Description of Training | Initial | Annual Refresher |
|---|---|---|
| Blood Borne Pathogen for anyone who may have potential exposure to human blood, body fluids or other potentially infectious materials or vertebrate animals | In class | On-line annually |
| General UH System Biosafety | In class | On-line annually |
| JABSOM Biosafety | On-line | On-line |
| Biological Items Transport Awareness | On-line | On-line annually |
| Biosafety Cabinet certification, followed by hands on training | | |

| | | |
|---|---|---|
| Animal Biosafety Level 1/Animal Biosafety Level 2 | | |
| Respiratory Protection informs on the selection, use and maintenance of respiratory protection equipment | In class | In class annually |
| Hazard Communication informs on requirements for labeling and safety data sheets (SDS) | In class | |
| Laboratory Safety informs on elements of the written chemical hygiene plan; safe lab practices; chemical use, storage and disposal; personal protective equipment; proper fume hood use; chemical spill clean-up procedures; compressed gas safety (more detailed gas safety training may be arranged through EHSO with Gaspro), and emergency preparedness | In class | On-line annually |
| Hazardous Waste Generator provides waste generators with EPA requirements and university hazardous materials waste policies and procedures. EHSO will not accept a request for disposal of hazardous waste unless the generator has attended the initial training, or a refresher training within the past year | In class | In class on-line annually |
| Radiation Safety for persons occupying a restricted laboratory. Health physics, exposure limits and risk. University policies for safe use and handling of radioisotopes, waste disposal, procurement procedures, inventory records and survey techniques are covered | In class | |
| Back Injury and Prevention covers anatomy of the back; causes and symptoms of back injuries; proper lifting techniques and other techniques to prevent back injuries (Optional) | In class | |
| Fire Extinguisher informs on use of class B fire extinguisher to actually access, approach, attack and successfully extinguish fires in the incipient stage (Optional) | In class | |
| Hearing conservation informs on the effects of noise on hearing; the fit, use and care of hearing protectors; and the need for audiometric testing (Optional) | In-class | In-class |
| Ladder Safety (Mandatory for those using ladders) | In Class On-line | |

## VI. Medical Surveillance Procedures for Enrollment in the OHSP (revised 7/7/2020)

### A. Scope

Enrollment in the Program is required of all individuals whose duties involve routine exposure to animals, animal waste, or animal tissues; and will be working with research animals on an IACUC protocol in the AVS-operated vivariums; individuals requiring access to the JBF and using human pathogens or other biological agents. The Program also applies to those that will not be working with research animals but will have exposure to areas where animals are located,

including but not limited to: personnel in non-research units such as Facilities Management, contractors, other support personnel, and visitors such as site inspectors who enter the vivariums.

## B. Identification

Individuals will be identified through the (1) new hire process, (2) when requesting access into Animal and Veterinary Services (AVS) operated vivariums, (3) Institutional Animal Care and Use Committee (IACUC) protocol review process, (4) Institutional Biosafety Committee (IBC) protocol review process, or (5) self-identification.

## C. Enrollment Faculty, Staff, Fellows, Students, Interns, Volunteers

Enrollment in the Program is required of all individuals whose duties involve routine exposure to animals, animal waste, or animal tissues; and will be working with research animals on an IACUC protocol in the AVS-operated vivariums. At minimum, access into AVS-operated vivariums requires individuals to 1) obtain medical clearance from a Health Professional licensed in the United States of America (USA), familiar with occupational health and safety medicine, and without a perceived conflict of interest (HP); and 2) complete required OHSP training.

1. Obtaining Medical Clearance from a Health Professional (HP)
    a. Health History Questionnaires (HHQ) Form A (**appendix 5**)

    HHQ forms are available on the Office of Research Compliance website.

        i. Initially, all individuals enrolling in the OHSP will be required to complete an Initial baseline HHQ Form A-Initial, which must be reviewed by a Health Professional (HP).
        ii. Every three years, researchers are required to complete a Renewal HHQ Form A-Renewal, which will be reviewed by a HP.
        iii. Annually, AVS staff are required to complete a Renewal HHQ Form A-Renewal, which will be reviewed by a HP.
        iv. After initial review or between HHQ reviews, if there are any changes in an individual's health status, such as pregnancy or intent to become pregnant, increased allergy symptoms, compromised immune system, or working conditions change, enrollees **must** update their HHQ to reflect these changes and by completing a Renewal HHQ Form A-Renewal that is reviewed by a HP.

    b. The Health Professional Medical Evaluation to Principal Investigator, Form B (**appendix 6**)

    The HP will review the HHQ and make recommendations. The HP may medically clear the individual to work in the vivariums, or the individual may be directed to seek further medical evaluation, immunizations, medical screening, diagnostic testing and/or referral.

2. Completing OHSP training
    a. Initially, individuals requiring access to AVS-operated vivariums will be provided education on the AVS OHSP manual. Individuals must complete an assessment tool with a passing score of 90% to demonstrate they have comprehended the information.
    b. Annually, all individuals will be required to complete AVS OHSP refresher training during the annual AVS vivarium orientation refresher training.

    To register for the training contact avsofc@hawaii.edu

### D. Short Term Visiting Scientists, Visiting Students for Class Demonstrations Working with Animals

Visiting Scientist working with animals for 2 weeks or less, from an AAALAC accredited program, will complete the AVS OHSP training described above in VI.A.2. Visiting Students for class demonstrations working with animals, will complete the AVS OHSP training described above in VI.A.2. After completing the AVS OHSP training, if individuals have a concern about their health and/or working conditions, they may opt to complete a HHQ Form A and receive medical clearance described above in VI.A.1. The department or program that the individual reports to will bear the costs of reviewing the HHQ (Form A) by a Health Professional, and any required immunizations, medical evaluations and screening, additional Personal Protective Equipment (PPE), and/or medical clearance and fit testing to wear respirators. For payment for occupational health services see section VI.I.10 under Principal Investigator/Supervisor responsibilities.

### E. Office Workers, Visitors, Short Term Contractors, Site Visitors Not Working with Animals

Individuals who will not be working with research animals but who will have exposure to areas where animals are located are educated about hazards associated with the vivarium. Other relevant animal facility policies and procedures are also provided prior to entry into the vivarium. Office workers, visitors, contractors who will be working in the vivarium for 2 weeks or less, and site visitors will not need to complete a HHQ, and will receive abbreviated occupational health education prior to entering the vivarium which is provided upon visitor request approval found at https://research.hawaii.edu/orc/programs/animal-veterinary-services/vivarium-visitor-registration-form/**.**

### F. Participation

Individuals are also expected to complete follow-up requests from the HP. Follow-up recommendations for the individual is strongly encouraged. While full participation in the program is strongly encouraged, individuals have the option of declining HP follow-up recommendations. Those individuals declining to complete follow-up recommendations, should

complete **Declination Form C** (**appendix 7**), provided the enrollee has first undergone required OHSP training. The individual acknowledges on Form C, his/her awareness of risks and by declining follow-up requests may encounter the possibility of adverse health effects related to the occupational exposure. The declination for follow-ups can be reversed at any point by contacting the clinic or resubmitting a Renewal HHQ Form A-Renewal. Because the program is designed to protect individuals, declining to participate may result in access to areas being limited or denied.

## G. Animal Related Illness, Injury, or Unsafe Conditions

Any on-the-job injury, accident, or disease arising out of and in the course and scope of employment – regardless of how minor it may seem – should be reported within 24 hours to an employee's supervisor or PI as required under UH Administrative Procedure A9.720 Worker's Compensation found at http://blog.hawaii.edu/jabsomohr/files/2013/02/Workers-Compensation-A9.720.pdf. Affected enrollees requiring medical attention should go to their primary care physician (PCP) or other health care provider. See section IV.C above for reporting animal bites and scratches in the vivariums.

## H. Enrollee Information

Protected health information of enrollees will be treated in a manner consistent with UH's applicable standards of privacy and confidentiality.

## I. Responsibilities

**Individuals** are responsible for:

1. Completing and sending the following forms found at https://researchcompliance.hawaii.edu/programs/animal-veterinary-services/occupational-health-safety-program/ to Straub Occupational Health Services, via email (Jennifer.oldershaw@straub.net and dora.sakata@straub.net) or Fax: (808)-529-4950, or send to an equivalent HP provider licensed in the USA.
    a. **Health History Questionnaire (HHQ) Form A**
        i. Filling out the Health History Questionnaire (HHQ). Seeking guidance from your supervisor/Principal Investigator (PI) in answering questions #1-3 regarding a risk assessment of your work assignment. Having your PI sign page one of the HHQ. Indicating which academic unit (JABSOM, UHCC, or AVS) the individual reports to.
        ii. Following up on recommendations made by the HP on **Health Professional Medical Evaluation to Principal Investigator Form B (appendix 6)**, for further medical evaluations, immunizations, medical screening, diagnostic testing and/or modifications. Providing written proof of completion of additional required medical evaluations recommended by the HP. Include the individual's name and birth date on any additional documentation via email or faxed to Straub, Fax: 529-4950.

iii. If individual choses to decline recommendations made by HP, complete **Declination Form C (appendix 7)** send via email or fax to Straub, Fax 529-4950, or to the equivalent HP provider who reviewed the individual's HHQ.

b. If using Straub, complete the top contact information section of Form B **(appendix 6), Straub Registration data sheet Form D (appendix 8),** and **Straub Authorization for Release of Medical Information Form E (appendix 9),** Send via email or Fax 529-4950.

2. If required to wear a respirator, individuals may use Straub or an equivalent provider for their initial or re-evaluation for medical clearance for respirators.

    a. If using Straub, complete and send to Straub **OSHA Respirator Medical Evaluation Questionnaire Form F (appendix 10) and Medical Clearance for Respirator Use Form H (appendix 12), and Forms D and E** described above.

3. Individuals requesting access into AVS-operated vivariums must provide proof of medical clearance, **Health Professional Medical Evaluation to Supervisor**, **Form B** to AVS Operations Supervisor, or designee.

4. Training Required prior to access into AVS-operated vivariums

    a. Initially completing AVS OHSP training.

    b. Annually completing refresher OHSP training during the vivarium orientation refresher training.

5. Always following pertinent standard operating procedures.

6. Informing Supervisor/Principal Investigator (PI) within 24 hours of any animal bites, scratches, illnesses, injuries or other exposure (aerosol release, spill exposure, etc.) received during the course of working with or around animals while in the vivariums.

7. Notifying Supervisor/PI within 24 hours in the event of a possible biological, radiological, chemical, or physical agent exposure.

8. After initial review or between HHQ reviews, if there are any changes in an individual's health status, such as pregnancy, or the intent to become pregnant, increased allergy symptoms, compromised immune system; or working conditions change, enrollees must update their HHQ to reflect these changes and have the HHQ reviewed by a HP.

9. During the COVID-19 pandemic, all individuals are required to wear face coverings in the vivarium. Individuals are required to complete a daily online UH health questionnaire before they are allowed to be on campus.

***Principal Investigators/Supervisors*** are responsible for:

1. Assessing the protocol-specific risks and recommending procedures and practices to mitigate risks.
2. Providing guidance to the individual completing HHQ Form A, items #1 - #3. After completing this step, the PI will sign off on page one of the HHQ.
3. Ensuring that the individuals under their supervision are up to date on all requirements to be enrolled in the OHSP.
4. Ensuring that individuals listed on their protocols update their HHQs based on new hazards proposed in their protocols.
5. Receiving and archiving completed Form B **(appendix 6)** information for individuals under their supervision. Ensuring that these individuals are enrolled in the OHSP prior to initiation of active work in the vivarium.
6. Using information provided by the HP on Form B, ensuring that the individual under their supervision follows up on further evaluations, including but not limited to, being provided additional PPE to mitigate risks. In some cases, the PI may limit or restrict access of an individual to certain areas or activities based on the HP‘s assessment, or if the individual chooses not to follow the HP‘s recommendations and signs Declination Form C.
7. PI’s department archives the current information for individuals they supervise, including but not limited to, Medical Clearance by HP to PI, written proof of completion of immunizations, medical screenings, respirator evaluation, issuance of PPE, and other related items required by their program. Maintaining this information in accordance with applicable standards for privacy and confidentiality.
8. Ensuring that staff under their supervision are educated on protocol-specific SOPs for hazard(s) used in animals in the vivarium. Protocol-specific SOPs are developed and updated as needed by the PI based on a risk assessment developed in conjunction with Biosafety Office, Environmental Health and Safety Office (EHSO), and AVS management. Protocol specific training will be provided and documented in writing for all individuals exposed to the hazard(s), prior to commencement of the activity. The PI will provide the appropriate PPE to their staff, and ensure proper facilities, engineering controls and practices are used, based on the risk assessment.
9. Ensuring that staff under their supervision are aware of the activities that they are approved to do on their IACUC and IBC protocols, and that they follow proper procedures to ensure their health and safety when working in the vivariums.
10. The PI’s department or program that the individual reports to will bear the costs of reviewing the HHQ (Form A) by a Health Professional, and any required immunizations, medical evaluations and screenings, additional Personal Protective Equipment (PPE), and/or fit testing to wear respirators. Funds to cover OHSP

expenses should not be billed to grants. Rather RTRF or TFSF should be used to pay for these expenses.

11. If the PI chooses not to use Straub for medical evaluations to wear respirators, they are responsible for setting up the account and paying for services directly to the alternate health provider.
12. In the event of a suspected Laboratory Acquired Infection (LAI).
    a. Directing JABSOM, UHCC users to consult with Drs. Shiramizu or Shikuma or the individual's Primary Care Physician (PCP).
    b. Directing AVS staff to consult with Dr. Francis Pien.

***Health Professional from Straub or Equivalent HP Provider Licensed in the USA*** is responsible for**:**

1. Reviewing HHQ Form A within 30 days of receipt, prior to initiation of an individual's active work.
2. If HP has questions about the individual's HHQ, contacting the individual to have them come in for an in-person medical evaluation. If necessary, the HP may refer individuals to their Primary Care Physician (PCP) for further medical evaluation, immunizations, diagnostic testing and/or referral and/or recommend further modifications such as additional PPE, based on information provided on Form A.
3. Completing Form B,
    a. Noting whether or not an individual is physically fit to be exposed to animals or animal by-products, OR
    b. Noting any recommendations to the individual for further medical evaluations, immunizations, diagnostic tests, and/or PPE. Receiving written proof of completion from the individual when these recommendations are completed, OR
    c. Noting on Form B if the individual declines to follow the HP's recommendations made on Form B, after receiving a signed copy of Declination Form C from the individual.
4. Sending a copy of Form B to the enrollee's academic unit listed on HHQ Form A.
5. Maintaining all employee health records in accordance with applicable standards for privacy and confidentiality.
6. Straub will bill either UH JABSOM, UHCC, or AVS for reviews of health history questionnaires and medical clearances for respirators. Straub will reference on the bill the PI's name to whom the individual enrollee reports.

***Infectious Disease Specialists*** are responsible for:

1. Providing guidance for development of the OHSP manuals. Dr. Pien reviews and approves the AVS OHSP manual every two years, and approves any revisions pertaining to medical questions for the manual.
2. Providing health care and/or consultation to enrolled individuals for any suspected LAIs Dr. Francis Pien is consulted for the AVS staff. Drs. Bruce Shiramizu and Cecilia Shikuma for others enrolled in the program.

***Primary Care Physician*** **(PCP)** is responsible for:

1. Providing medical care for individuals with worker's compensation claims.
2. Providing medical evaluation follow ups based on recommendations by the referring HP. Notifying the individual and/or the referring HP when the individual has completed the HP recommended medical evaluation follow up.

***Office of Research Compliance, or Designated Academic Unit*** is responsible for:

1. Processing for payment the invoices for individuals asssociated with AVS who use Straub for review of HHQs, any in-person medical exams required by the HP, and/or medical clearances to wear respirators.

***UHM and JABSOM Environmental Health and Safety Office (EHSO) and UH Biosafety Office*** are responsible for:

1. Conducting periodic inspections of the vivariums and the JBF. Providing expertise in such fields as chemical safety, biological safety, physical safety, industrial hygiene, radiation safety, fire safety, and regulatory requirements.
2. In case of life safety matters or imminent danger to life or health, EHSO and/or Biosafety, or their designee, have the authority to order the cessation of the activity until the hazardous condition is abated or adequate measures are taken to minimize exposure.
3. Reviewing IACUC and/or IBC protocols for potential biological material, chemical, and/or radiation hazards. Ensuring use of the proper laboratory practices and techniques, safety equipment (primary barriers and personal protective equipment), and facility design or construction are appropriate for safe handling of the materials to mitigate risks.
4. Providing subject matter expertise for developing OHSP educational materials and related information used by the UH.
5. Training
    a. Administering subject matter training to individuals.
    b. Assessing an individual's understanding of respective educational materials (e.g. administering a quiz, both written and/or oral).

c. Documenting all training provided to individuals and maintaining data bases of these trainings.

6. Providing subject matter expertise and providing requested pertinent educational information to the HPs reviewing Form A and completing Form B.
7. For more details see the EHSO UH Manoa at http://www.hawaii.edu/ehso/, JABSOM EHSO at https://jabsom.hawaii.edu/admin/afo/ehso/, or UH CC at MHiramoto@cc.hawaii.edu, or UH Biosafety Program at https://researchcompliance.hawaii.edu/programs/biological-safety/

**AVS** is responsible for:

1. Administering the OHSP training during Vivarium Orientation (initial and annual refresher training) to all individuals requiring access to AVS-operated vivariums. Assessing individuals' understanding (administering a quiz) of the OHSP training.
2. Maintaining a data base on AVS OHSP training. Provides a notice of completion to individuals completing this training.
3. Developing and updating OHSP educational materials in conjunction with subject matter experts regarding risk assessment and hazards associated with the vivariums.
4. Receiving a copy of the individuals completed Form B documenting that they are physically fit to work with animals or animal by-products and/or biological agents. This should be done or the individual will be denied access into the vivarium until this is step is completed.
5. Maintaining a data base to verify that individuals are enrolled in the OHSP (Approval of Form B medical clearances by HP and OHSP training assessment completion dates).
6. Sending email alerts to individuals before their annual refresher AVS orientation training due dates.
7. Ensuring that AVS staff complete and submit their initial and annual HHQ to the HP for review.
8. AVS veterinarians provide subject matter expertise on zoonoses. Periodically interfacing with the HPs on pertinent educational information for the vivariums.
9. Providing subject matter expertise on animal containment equipment, husbandry procedures, and safe handling of animals.
10. Updating Dr. Francis Pien of biological agents that are used in the vivariums. Seeking advice, and arranging for reviews of the AVS OHSP manual every two years by Dr. Pien. Seeking approval from Dr. Pien for any revisions pertaining to medical questions for the AVS OHSP manual before implementing changes.

11. Ensuring that all AVS staff are enrolled in the OHSP, trained on revisions to OHSP, and comply with the AVS OHSP requirements.

The ***UH IACUC*** is responsible for:

1. Overseeing the OHSP.
2. Reviewing and approving pertinent protocols, SOPs, and OHSP manuals.
3. Providing pertinent subject matter expertise.

The ***UH IBC*** is responsible for:

1. Reviewing and approving pertinent protocols, SOPs, and OHSP manuals relevant to biological agent use.
2. Providing pertinent subject matter expertise.

## VII. Additional Medical Surveillance Requirements Specific for AVS Employees and AVS Animal Care Student Assistants

### A. AVS Regular Employees and Animal Care Student Assistants

1) Upon hire, new AVS FTE employees will complete a health history questionnaire to Straub as a means to verify that the individual is medically cleared to work in the vivarium. In addition, employee completes Straub OSHA Respirator Medical Evaluation Questionnaire or equivalent (3-M) (**appendix 10**)

   The AVS Manager will receive a Form B *Health Professional Medical Evaluation to the Principal Investigator* (**appendix 6**) from Straub indicating whether the employee is fit to work for proposed assignments, or able to do proposed assignments only with modifications, or temporarily not fit until further evaluation, or not fit. If AVS staff uses Straub for medical evaluation to use a respirator, the AVS Manager will also receive Straub's *Medical Clearance for Respirator Use,* or equivalent, to determine if the employee is medically cleared to be fitted for a respirator.

   Based on the assessment by the Straub HP, the new employee may be directed for further medical evaluation, immunizations, diagnostic testing and/or referral.

   AVS covers the cost of the employee's medical evaluations and recommended follow up. In some cases, these aforementioned costs and recommendations by the HP for further medical evaluation, may be covered by the individual's health insurance plan. Protected health information of employees will be treated in a manner consistent with UH's applicable standards of privacy and confidentiality.

   Respirator medical evaluation and annual fit testing is required all regular AVS employees. TB testing is required of all regular AVS staff for protocol specific activities

(there are currently none). Otherwise, all individuals who work or go to school at the UH are tested or surveyed for TB at the beginning of their tenure. Students working or volunteering at AVS complete a TB surveillance with the UH Health Services as a requirement for enrolling at UHM.Other protocol specific activities may require additional PPE, e.g., when working in the ABSL3.

2) Initially, and then annually, AVS employees will complete a Health History Questionnaire (HHQ) (**appendix 5)** found on the ORC website https://researchcompliance.hawaii.edu/programs/animal-veterinary-services/occupational-health-safety-program/.

3) Between HHQ reviews, if there are any changes to the employee's medical history, they should notify their supervisor. Such changes include but are not limited to, increased allergy symptoms, compromised immune system, pregnancy or intent to become pregnant. The supervisor will encourage the employee to complete a HHQ for review by the participating clinic.

4) Employees will be educated on the AVS OHSP including the hazards associated with their work in the vivariums. Individuals will complete an assessment tool with a passing score to demonstrate they have comprehended the information.

5) During the COVID-19 pandemic, all employees are required to wear AVS-issued face coverings in the vivarium when in the same room with others. Staff do daily temperature checks and complete a online UH health questionnaire in order to be allowed on campus. A log-in sheet with notations that temperature and health history questionnaire has been completed by the AVS staff is maintained at both vivariums in the breakroom. Visitors to the vivarium are also required to sign into the log-sheet. Any deviations from normal will be reported by the individual to their supervisor.

## B. Immunizations

1) AVS employees and students working with research animals must receive Tetanus immunization every 10 years or following an injury on the advice of their physician. Proof of Tetanus immunization will be kept confidential.
Prophylactic immunizations may be made available through the institution for AVS employees who have responsibilities for animal care involving ABSL2 or ABSL3 biohazardous materials in animals. Hepatitis immunizations are not required as AVS staff do not work directly with human tissues or body fluids, however they are required annually to complete Blood Borne Pathogen training. Human cell lines used in animals are screen for pathogens such as HIV and Hepatitis. Thus far, AVS staff have not had to receive any special immunizations for working in the ABSL3, other than the COVID-19

vaccination series. All AVS staff working in the vivarium are fully vaccinated for COVID-19.

2) An AVS employee may decline vaccinations available to them through the institution, by completing the *Declination* form C (**appendix 7)**

## C. Required Personal Protective Equipment

Specific PPE will be made available to the employee by AVS based on a risk assessment prior to the initiation of animal activities. This may include participation in the Respiratory Protection Program (**appendix 4)**.

## D. Notification of Risks to AVS Employees

1) AVS supervisor shall notify employees of potential hazards that could be contracted as a result of animal exposure. Usually this involves a meeting with the PI and his/her staff, EHSO, and Biosafety Office to review the specific details of the study with the AVS staff. In the case of use of potentially biohazardous materials use in research animals, the PI will provide a description of symptoms that may be associated with the material. The information is reviewed by Dr. Francis Pien, infectious disease physician, or an MD knowledgeable in infectious diseases, prior to sharing this information during the educational sessions with staff. All training will be done prior to start of the animal experiment involving the potential hazard.

2) Personal health status may impact an employee's susceptibility to infection, as well as the ability to receive immunizations or prophylactic interventions. The employee shall be informed of the characteristics of the hazard, any special considerations such as risks to pregnant women and immunocompromised individuals, and infection rate among other individuals with substantial similar animal exposure. Individuals having these conditions will be encouraged to their immediate supervisor. The supervisor may put them in touch with an OH profession to provide them with information regarding immune competence and conditions that may predispose them to infection. The supervisor will use this information to appropriately assign work duties.

3) Protocol-specific SOPs will be developed and approved by the IACUC and/or IBC, with input from EHSO, BO, AVS based on the potential hazard prior to initiation of animal activities. AVS staff will be educated on SOPs prior to commencement of activities. Signs pertaining to the activity and SOPs will be posted in the vicinity of the specific activity.

4) A close working relationship with the research team and AVS will be maintained during the course of the activity with potentially hazardous materials involving animals. The AVS Operations Supervisor will serve as the communications point person for AVS.

5) Employees will be educated and training records documented prior to initiation of the animal activities. Training records are archived by the AVS Operations Supervisor.

## E. Reporting and Treatment of Illness or Injury

1) All illnesses and injuries experienced during work should be reported promptly to the AVS supervisor. Refer to section on Worker's Compensation III.H. Refer to http://blog.hawaii.edu/jabsomohr/files/2013/02/Workers-Compensation-A9.720.pdf.

2) Any employee bitten or scratched by a research animal should immediately report this to a supervisor, and record the injury in the *Bite Scratch* log located in either Biomed T210 office or Kakaako 123 staff break room. Wounds (bites, scratches, and abraded skin) should be cleaned immediately for a full 15 minutes immediately following the incident. Incidents involving recombinant DNA, or infectious materials used in animals, must be reported to the Biosafety Program Manager within 24 hours.

3) All mucocutaneous exposure from experimental animal excretions must be reported to the supervisor. Refer to Mucocutaneous Exposure SOP (**appendix 4).**

4) If the injury or illness requires medical attention, employees may see their private physician, Dr. Francis Pien, Straub Occupational Health, 800 South King Street, Third Floor, or go to the nearest emergency clinic or hospital. The University Health Service is also available on the UH Manoa campus.

   The healthcare provider should have a working understanding of the biohazardous materials present in the vivariums. Dr. Francis Pien, has been identified by AVS as the infectious disease physician for potentially biohazardous ABSL2 and ABSL3 materials used in animals. AVS employees will be advised to see Dr. Pien if it is suspected that they were exposed to a laboratory acquired infection (LAI) during their husbandry duties or are exhibiting symptoms associated with any of the pathogens used in specific studies. The AVS Manager will write a confidential referral letter to Dr. Pien, which will be hand carried by the affected individual or his/her designee. A copy of the letter will be kept in a confidential file at the workplace. The letter will include information on the potential laboratory acquired infection. Acute and convalescent serum samples may be taken by Dr. Pien in case of suspected LAI.

5) All LAIs will be reported immediately to the Biosafety Program Manager within 24 hours, so that an Incident Report can be generated and necessary steps instituted to prevent other LAIs and to notify the appropriate agencies. A Workers Compensation report will be generated as described in section III.H.2.

6) Fever Watch: AVS employees who have a fever over 100.4 degrees F or are showing signs of cold or flu-like symptoms shall not enter the ABSL3 or ABSL2 biohazard areas in the vivarium. If the employee has been inside the ABSL3 and develops a fever over 100.4 degrees F, or illness, or shows symptoms associated with pathogens being used in the areas where they are working, within 5 days of being in the areas, they should report this immediately to the AVS Manager, and may be referred to see Dr. Pien or to seek medical attention.

## F. Allergens and AVS employees

Refer to section II.A.4. The employee's HHQ will help guide the Health professional in identifying and alerting employees who may be at risk for developing laboratory animal allergy or asthma. Employees will be educated on protective measures such as using appropriate PPE or engineering controls. When operationally feasible, AVS will make every attempt to accommodate the employee at risk to be appropriately assigned job duties that reduce their exposure, and to provide appropriate PPE to mitigate risks.

## G. TB Testing (rev. 8/13/18)

Protocol specific activities may require AVS employees to have a tuberculin skin test prior to the start of a proposed IACUC- and IBC-approved study to which they are exposed. A one step PPD skin test will be done at Lanakila Health Care Center at no charge. Annual skin testing will be required for the duration of the study. The employee will be referred to Dr. Francis Pien, Infectious Disease Specialist, or to their primary care physician for further evaluation if they skin test positive during the current screening. Those who have skin tested positive in the past, will provide documentation that they have had a chest X-ray and have completed a 6-month course of Isoniazid antibiotics. Results of the skin test and any documentation related to the TB testing will be kept confidentially for AVS employees by the ORS Human Resource Specialist, and serve as a baseline for the employee.

UH Manoa students receive TB clearance through University Health Services
http://www.hawaii.edu/shs/downloads/Aloha%20Packet.pdf

**Appendixes**

# Appendix 1

# Biological Materials/Toxins in Animals Policy

# Policy for Protocols Using Biological Materials/Toxins in Animals (AVS-Operated Vivaria)

First Drafted 6/16/14, Revised: 10/14/14, 5/30/15, 6/24/15, 11/16/15, 10/29/18
IBC Approved: 6/24/15, 11/16/15 IACUC Approved: 2/18/16

In the course of research, laboratory animals may be inoculated with biological materials (refer to UH Biosafety web site for the definition of biological materials). The animals may excrete these materials, toxins, or their potentially dangerous metabolites.

This policy is designed to provide guidance to researchers when preparing their animal use protocols that involve the use of biological materials and/or toxins.

The following are general guidelines and Table BMBL MATRIX for Biosafety and Animal Biosafety Level determination (developed by Institutional Biosafety Committee (IBC)), which are applicable to projects involving biological inoculation of animals. The IBC protocols must be reviewed by UH Biosafety for animal activities occurring in Animal and Veterinary Services (AVS) operated facilities to determine any additional measures to prevent occupational exposure and environmental contamination on a case by case basis.

**Principal Investigator Responsibilities:**

1. Comply with guidelines and those specifically developed for their protocols.
2. Contact Biosafety for guidance as early as possible, as state or federal permits may be required for inoculation studies.
3. Provide a list of biological materials, toxins, and safety data sheets for each with information related to their hazards, and/or literature citation on the prior use of the particular materials in animals. Include appropriate PPE to use with the biological material, dosage, route of transmission, probability of exposure, and consequences of exposure. This information should be attached to the UH IBC protocol.
4. Provide an assessment of whether the wastes, including soiled bedding, cages, feed, water, and carcasses are considered hazardous. The assessment should include: (a) is the biological material broken down in the body? What are the metabolites? Are they hazardous? (b) is the material excreted intact? If so, how (urine, feces, exhaled, prespiration), and for how long? (c) How and over what period of time are the metabolites excreted? (d) is the decontamination procedure, the type of disinfectant and its metabolite (byproducts) cause more potential hazards and (e) will autoclaving cause additional issues.
5. Contact the AVS Operations Supervisor to arrange training at least 2 weeks prior to the start of the initiation of the project.
6. Provide protocol specific training to AVS staff and research staff and keep training records on file for reference during lab inspections.
7. IACUC activity involving special handling cannot begin before IBC approval

**UH Biosafety Responsibilities:**

1. Review the information provided by the PI and make assessment
2. Provide comments and recommendations regarding the protocol to the UH IBC.

**AVS Responsibilities:**

1. Inform PI of any additional costs associated with the safe handling of their animals prior to the start of the project.
2. Educate staff who will handle animals and/or caging used in the study on proper handling and disposal.

**Elements of Best Practices for Inoculated Animals that *May* be Required:**

1. **Personal Protective Equipment (PPE):**
    a. Wash their hands before donning and after removing gloves.
    b. Wear disposable gloves.
    c. Inspect gloves for tears or holes prior to donning, changed frequently, and do not reuse.
    d. Wear a closed-front gown and dispose of after each use.
    e. Wear safety glasses
    f. Wear a hair bonnet or tie long hair back away from face
    g. Follow Respirator Safety Program requirements for the specific hazard

# Policy for Protocols Using Biological Materials/Toxins in Animals (AVS-Operated Vivaria)

First Drafted 6/16/14, Revised: 10/14/14, 5/30/15, 6/24/15, 11/16/15, 10/29/18
IBC Approved: 6/24/15, 11/16/15 IACUC Approved: 2/18/16

**2. Engineering Controls:**

a. Use cages with High Efficiency Particulate Air (HEPA) filters.
b. House cages on a negative pressure, ventilated rack in a room under negative pressure.
c. Handle cages in a ventilated cage changing station or biological safety cabinet, determined by Biosafety.
d. Dump bedding in a ventilated dumping station or biological safety cabinet, which will be determined by Biosafety.
e. Properly decontaminate the work area before and after use
f. Take the "Understanding and Using Biological Safety Cabinets" informational course from UH Biosafety. Proficiency in properly working in a Biological Safety Cabinet must be provided by the PI and should be documented.

**3. Signage:**

a. Label cages: PI name, agent name, biohazard warning symbol, and date/time of administration
b. Place an "Active Manipulation" sign over the Edstrom keypad whenever infectious cages are opened to ensure no one enters the room.
c. Place an ABSL2 sign on the animal holding room door listing the PI name, contact information and agent name.

**4. Disposal:**

a. Place empty syringes/needles used to administer the biological materials in a red biohazard sharp's container.
b. Place sharps contaminated with biologicals in designated biohazard, sharps containers to be autoclaved.
c. Place carcasses in red carcass bags and decontaminate the outside of the bag prior to placement in refrigerator/freezer.
d. Dispose of carcasses through alkaline hydrolysis (tissue digester).
e. AVS disposes of bedding by (1) standard cage wash procedures, (2) autoclaving prior to washing, or (3) chemical decontamination prior to washing (determined by Biosafety).

# Appendix 2
# Hazardous Chemicals in Animals Policy

# Hazardous Chemicals in Animals Policy

First Issued: 6/15/06, Revised: 5/1/07, 7/18/07, 9/17/09, 5/19/14, 6/4/15, 9/22/17, **10/12/21**
IACUC Approved: 6/15/06, 9/17/09, 6/18/15**, 10/19/17**

Animal protocols involving hazardous chemicals must be planned and conducted appropriately in order to minimize the potential exposure to research personnel, facility animal care staff, and veterinarians. Hazardous chemicals used in laboratory animals, include known or suspect carcinogens, reproductive toxins or highly toxic substances (e.g. anti-neoplastic agents) and nanomaterials. The very nature of antineoplastic agents make them harmful to healthy cells and tissues as well as cancerous cells, even if they are FDA approved for use in human and/or animals. Animals that have been dosed with a toxic chemical may excrete that chemical or their potential toxic metabolites, particularly for seventy-two (72) hours after the last chemical administration. The following procedures are designed to ensure that individuals are:

1) Informed of the potential hazards;
2) How to minimize exposure when performing duties associates with protocols using toxic drugs.

As with any laboratory operation, the Principal Investigator (PI) and researchers must identify and understand the hazards associated with the chemical(s) being used (e.g. toxicity, reactivity, flammability, corrosivity, etc.) before they begin their work so that appropriate controls can be established. This information may be available from Safety Data Sheets (SDS) and other sources of safety information. It is important to understand all the hazards of the chemical and any other special considerations that may be required prior to beginning work. Research staff may be exposed to hazardous chemicals during preparation, handling, and animal dosing. These chemicals may be excreted from the animal and, therefore, be present in the animal's bedding in low concentrations. Researchers, animal care staff, and veterinarians may be exposed to these hazardous substances or their metabolites during cage handling or handling of medicated water and/or feed. The Institutional Animal Care and Use (IACUC) protocols must be carefully reviewed by EHSO (Environmental Health and Safety Office) for activities occurring in facilities where animals are housed or used to determine if the proposed chemicals are to be considered hazardous. Additional measures to prevent human exposure and contamination will be implemented for all hazardous chemicals. It is incumbent upon the PI to provide accurate hazard information about the research conducted and chemicals used and to comply with these standard procedures and any procedures specifically developed for their protocols. Failure to do so could results in the non-compliance being reported to the respective Federal agency as well as other negative consequences to the University.

This policy describes required procedures that the PI and the individuals involved with the care of animals must follow for:

A) Completion of the IACUC Protocol
B) Coordination with IACUC and EHSO
C) Hazardous chemical preparation and handling and animal dosing
D) Cage management and disposal

**Principal Investigator's Responsibilities:**

1. The PI must provide a list of chemicals and information related to their hazards, e.g. Safety Data Sheets (SDS) and/or literature citation on the prior use of the particular chemicals in animals. This information must be included in the UH IACUC protocol. The information should include but not limited to the following:
   a. Specific health risks to humans and animals from possible exposure.
   b. Proposed precautions to be taken to protect people and animals.
   c. Any information on recommended medical surveillance and/or use of antidotes.
   d. Information on how the chemical is metabolized in a specific animal species. Animals dosed with hazardous chemicals may excrete that chemical or metabolites, particularly during the first 72 hours after dosing. A review of peer-reviewed literature may provide this information if documented. Otherwise, in the absence of data, conservative measures will be required.
2. The PI shall provide protocol specific training to his/or staff, and the animal care staff prior to start of the project.

3. Must coordinate the use of the chemical with facility animal care Supervisor or designee prior to start of project (i.e two (2) weeks before beginning dosing project). Coordination includes confirmation of facility availability; room/facility assignment and provisions for appropriate cage labeling and waste management.
4. Must comply with health and safety requirements set forth by this policy, including the development of standard operating procedures (SOPs) when working with specific chemicals. At a minimum, the SOP should describe:
   a. Use of a chemical fume hood or other appropriate engineering controls.
   b. Appropriate personal protective equipment (PPE).
   c. Methods to restrain or sedate animals per IACUC protocol to reduce the possibility of accidental self-inoculation.
   d. Administration of chemical and methods to minimize risk of accidental exposures (e.g. use of safety syringe).
   e. Methods to be used to clean-up spills and decontaminate lab surfaces and equipment using wet wiping methods and an appropriate cleaning agent.

Training of staff on SOP (ensure research personnel are trained on the SOPs and specific hazards associated with the chemicals. Maintain training documentation). Include a subject matter expert from EHSO to attend the meeting.

**Environmental Health and Safety Office (EHSO) responsibilities:**

1. Will review the information provided by the PI to determine if it is a hazardous chemical. If it is hazardous, advise on:
   a) Specialized personal protective equipment (PPE) in addition to the standard, double nitrile gloves and front closing gown used during chemical administration, animal handling (opening cages), cage changes, waste collection, etc. as described in Work Practices.
   b) Waste disposal. If the method of disposal includes segregating and collecting the bedding for disposal as hazardous waste, facility animal care Supervisor will work directly with EHSO to determine how the waste will be stored while awaiting disposal by a licensed hazardous waste contractor. If the waste is a mixed waste (e.g. biological and chemical), procedures will be determined in collaboration with the Biosafety Office and EHSO.
2. Will review proposed IACUC protocol and provide their comments/re-commendations regarding the protocol to the UH IACUC.
3. Will provide appropriate general training such as Laboratory Safety, hazard communication, etc.

**IACUC and Animal Facility Responsibilities:**

1. IACUC incorporates EHSO's comments/recommendations into their review and approval process.
2. IACUC ensures that the protocol approval letter informs the PI of special handling and disposal methods of chemically contaminated animal carcasses, cages and bedding, and other associated wastes during the 72-hour period following the last chemical administration.
3. The facility animal care Supervisor or designee will inform PI of any additional costs associated with special husbandry procedures and hazardous disposal of animal carcasses, and/or waste that will be charges back to the PI if the method of disposal exceeds what is covered by the current per diem rate for the species.

4. The facility animal care Supervisor or designee will document and archive all training records for individual protocols involving hazardous chemical dosing in animals.

**Work Practices for Operations with Chemically Dosed Animals: (See Manoa & JABSOM EHSO SOPs for Tamoxifen and Azoxymethane (AOM) attached)**

1. Personal Protective Equipment (PPE) and Use:
   a. Double, disposable, nitrile glove shall be worn when handling contaminated animals and bedding. Gloves shall be inspected for tears or holes prior to donning, changed frequently, and not reused.
   b. PPE specific for the hazard is doffed before exiting the room where chemicals in animals are used.
   c. Individuals shall wash their hands, or use waterless hand soap immediately after removing gloves.
   d. A closed front, wrap around gown shall be worn when handling contaminated bedding. Gowns are disposed of after each use. Plastic apron, rubber boots or disposable booties may also be needed. The secondary, long-cuffed glove is pulled over the sleeve of the gown.
   e. A face shield or safety glasses shall be worn when handling contaminated bedding. Individuals wearing contact lenses MUST wear safety glasses. If there is potential hazard from chemical splash, then chemical goggles must be worn in lieu of safety glasses.
   f. If respirators are recommended and/or required, the appropriate elements of the Respirator Protection Program must be implemented. Contact EHSO for guidance on respirator use.
   g. Disposable gowns, gloves, respirators and paper towels are disposed of as hazardous waste.

2. Engineering Controls:
   a. Cages shall be equipped with filtered micro-isolator tops, preferably high efficiency particulate air (HEPA) filters, 0.2 um pore size.
   b. For all cages opened to manipulate animals and soiled bedding during the treatment period and up to 72 hours after the last administration, is done in a biosafety cabinet (BSC) or fume hood. animal care staff will collect bedding in clear, polypropylene bags and label with agent name and date.
   c. Decontamination of the BSC or fume hood shall consist of surface cleaning with water and detergent followed by a thorough rinsing with clean water. In some cases, regular vivarium cleaning with clidox 1:18:1, or equivalent, followed by 70% isopropyl alcohol may be sufficient. Cleaning shall proceed from the least to the most contaminated areas.

3. Signage:
   a. When animals are dosed with a toxic chemical, their cages must be labeled with:
      i) Name of Principal Investigator
      ii) Chemical name and chemical hazard warning sign
      iii) Date and time of chemical administration
   b. If hazardous chemicals are administered by water/feed, also label the water bottle/feeder with the above information.
   c. Maintain label on cage, water bottle/feeder for 72 hours after the last dosing AND until contaminated bedding is changed, unless longer time frames are required as identified in the risk assessment.
   d. The animal care staff are responsible for posting animal SOP signs on rooms housing dosed animals. Signage on door must include the following:
      . Name of hazardous chemical

- PI Name and IACUC Approval number
- Entry requirements
- Cage changing procedures
- Decontamination and spill procedures

4. Disposal:
    a. Disposal of residual and unused chemicals and solutions as well as animal bedding will be determined by EHSO.
    b. For disposal of sharps, including syringes, refer to: www.hawaii.edu/ehso/complaince/waste2htm#sharps or for questions, contact Biosafety Office or EHSO.
    c. Disposal of carcasses by animal care staff through alkaline hydrolysis (tissue digester) or equivalent.
    d. Disposal of bedding by animal care staff shall follow one of the below methods as determined by EHSO:
        i. For all bedding during the treatment period and up to 72 hours after the last administration, animal care staff will collect bedding in clear, polypropylene bags, label with agent name and date, and turn into EHSO for disposal as regulated waste.
        ii. For all bedding during the treatment period and up to 72 hours after the last administration, animal care staff will collect bedding in clear, polypropylene bags, label with agent name and date, and dispose of in the regular trash.

**John A. Burns School of Medicine and University of Hawai'i at Manoa**
**Collaborative Standard Operating Procedure (SOP)**

# Tamoxifen SOP

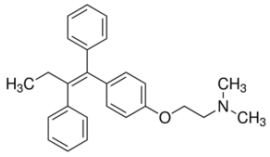
JABSOM EHSO Last Updated: September 10, 2021 by
Manoa EHSO Last Updated: September 9, 2021 by Michael Soles

**Principal Investigator (PI):**

**Start Date and Duration of Project:** **Room #:**

**Approximate # of Cages:** **Housing:**

**Hazardous Chemicals Used:** Tamoxifen



**General Information**
Tamoxifen is a white, odorless, crystalline solid with a melting point of 140-144 degrees Celsius. It is an antineoplastic agent used to treat breast cancer and is used in campus laboratories and animal facilities for cancer research studies. This document establishes procedures for the safe handling and use of Tamoxifen (CAS# 10540-29-1). Tamoxifen is a known carcinogen (IARC Group 1), toxic, and is considered a reproductive hazard. **Pregnant women should not be exposed to or handle this chemical in any form.** The Oral LD50 for Tamoxifen is 4,100 mg/kg. AVS staff shall read the safety data sheets (SDS) for all chemicals listed. SDSs are provided by the principal investigator (PI). Institutional Animal Care and Use Committee (IACUC) protocols that include Tamoxifen should reference this SOP to verify that the standard operating procedures are being followed.

**Acute Health Effects**
- Eyes: Irritation
- Skin: Irritation
- Ingestion: Harmful if swallowed
- Inhalation: Irritation of the respiratory tract.

**Chronic Health Effects**
Antineoplastic drugs may be potential carcinogens, mutagens, teratogens (harms the fetus), and reproductive hazards.

**Regulatory Limits**
There are no current established occupational exposure limits for Tamoxifen.There are no established safe levels of exposure to cytotoxic drugs. Medical opinion is that even small quantities of cytotoxic drugs and their metabolites should be avoided as much as possible.

**Notification**
PI group will email the Operations Manager (wongmich@hawaii.edu) to notify AVS of drug administration 24 hours in advance to request chemical caging if necessary. PI group will fill out the chemical hazard label and place it on the cage card holder. All information will be present, including cage card number, chemical used, start and end dates.

**Method of administration:**

**Cage Labeling**
- Chemical Hazard Label
- Tamoxifen
- Date Started

**If the PI needs to terminate a cage during the treatment period, date the granite card and turn it in as normal, leave the chemical treated cage on the rack and write "terminated" on the chemical label so AVS knows how to dispose of the cage bedding. Do not place the cage on the floor with other cages.**

**Disposal Procedures for Carcasses**
Place carcasses in the "hazard bin" in the procedure room freezer. Regular disposal in the tissue digester.

**Expected Observations of Animals:**

**What AVS should do if a sick animal is found:**

**What AVS should do if a dead animal is found:**

**PI and Technician Contact Information:**

**John A. Burns School of Medicine and University of Hawai'i at Manoa**
**Collaborative Standard Operating Procedure (SOP)**

## Tamoxifen SOP

JABSOM EHSO Last Updated: September 10, 2021 by
Manoa EHSO Last Updated: September 9, 2021 by Michael Soles

**General Information Continued**

The main routes of exposure to cytotoxic materials are through the inhalation of the material's particles or aerosols, skin absorption, inadvertent ingestion through contact with contaminated food or cigarettes, and needle stick injuries. Exposure may occur during preparation and administration of the material, handling of body fluids from animals receiving cytotoxic drugs, handling and disposal of cytotoxic wastes and related trace contaminated material, and transportation of cytotoxic materials. Some cytotoxic materials have a direct irritant effect on the mucous membranes, eyes and skin. Spills onto skin surfaces that have cuts or abrasions and punctures of the skin with a contaminated needle or broken glass can lead to severe soft tissue injury. They should be treated immediately and observed for potential problems.

- Review the Product Safety Data Sheet (SDS) prior to use of Tamoxifen.
- Personnel should not work with Tamoxifen if skin is cut or scratched.
- Pregnant or breast-feeding women should not work with Tamoxifen.

**Chemical Preparation:**

- Dose preparation work must be conducted in a chemical fume hood.

**Animal Handling and Dosing Controls:**

- Upon first dosage with Tamoxifen and all following handling, cages MUST be opened in the procedure room Biosafety Cabinet. Dosing of animals in a chemical fume hood or ducted (total exhaust) class II, type B2 biological safety cabinet (BSC) is recommended for maximum worker protection.
- Alternatively, when exhaust ventilation is unavailable, the use of a non-ducted class II, type A2 BSC, **OR** personnel using a powered air-purifying respirator (PAPR) may be considered. **The PAPR must be fitted with organic vapor cartridges and p-100 filtration.**
- PI will put mice in clean cage bottoms the first day of drug administration. Change filter top to a chemical, HEPA filtered lid. Treat / Dose mice in the BSC. Note on chemical hazard label the agent name and date. Please notify AVS for each cage treated. Where possible work on absorbent pads.
- Contaminated sharps must be placed in puncture proof and leak proof sharps containers. Label as Tamoxifen Sharps.

**PPE:**

- When in AVS facilities, PPE use must be consistent with the facility policy.
- Consider double gloving (nitrile or compatible cytotoxic-resistant gloves) especially when cleaning. Double gloving is also recommended during animal dosing if dexterity can be maintained.
- Always wash hands thoroughly after handling Tamoxifen.

**Cage Changes / Wash Out Period:**

- Cage bedding cleanout and waste processing work must be completed in either a chemical fume hood, ducted (total exhaust) class II, type B2 biological safety cabinet (BSC), **OR** in a non-ducted class II, type A2 BSC, **OR** personnel using powered air-purifying respirators (PAPRs). **The PAPR must be fitted with organic vapor cartridges and p-100 filtration.**
- AVS will change the cages in the procedure room BSC during the treatment period. AVS will remove the chemical label and change back to a normal filter top during the last cage change *at least 72 hours after the chemical is last administered.*
- Care should be taken to avoid exposure to bedding dust when handling exposed animals and their waste materials during this time.
- Consider using compressed cotton fiber bedding pads (iso-PADS) instead of standard bedding. The pads are very absorbent, will minimize the creation of aerosols and disposal is easier. AVS will collect bedding in clear polypropylene bags, label with "Agent name and date" and turn into EHSO.

**Normal Cleaning:**

- Decon areas where Tamoxifen is prepared and/or administered. The area must be cleaned and decontaminated with a 10% bleach solution immediately following each task. Leave the bleach solution in contact with surfaces for 5 minutes. After wiping up the bleach solution, clean the surface with soap and water. Potentially contaminated areas include bench tops, biological safety cabinet interiors, equipment, reusable personal protective equipment, intravenous bags, and tubing.
- Decon chemical fume hood or BSC after cleaning cages.
- Glassware and other non-porous materials may be decontaminated by soaking them in bleach.

**Small Spills (<10mL):**

- Spills inside of a chemical fume hood can be controlled by closing the sash to its lowest level. Clean up with dilute bleach followed by soap and water. Collect spilled material and clean up material into appropriately labeled, nonmetallic waste containers. All spill clean-up material should be disposed of as hazardous waste.
- Spills outside of a chemical fume hood must be covered with a paper towel and sprayed / soaked with a 10% bleach solution immediately.
- Do not attempt to clean-up if you feel unsure of your ability to do so or if you perceive the risk to be greater than normal laboratory operations.

**Accidental Release (Large Spills):**

- If a large spill occurs, notify others in the area and evacuate the room immediately. Contact EHSO during working hours and 6-6911 if after hours.

**Accidental Exposure:**

- Needle stick or animal bite - Return rodent to cage and wash area for 15 minutes. Immediately notify your supervisor. Seek medical advice immediately about Tamoxifen exposure. Take a copy of the product SDS with you.
- An emergency eyewash station and safety shower should be accessible nearby where Tamoxifen is handled.

**Storage, Transportation, and Waste**

- Keep containers tightly closed in a cool, dry, and well-ventilated area. Recommended storage temperature 2 - 8 °C. Light sensitive.
- When transporting Tamoxifen, the vials should be placed in secondary, sealed, plastic, labeled, non-breakable containers. Contact AVS Staff and PI for waste procedures.

**John A. Burns School of Medicine and University of Hawai'i at Manoa**
**Collaborative Standard Operating Procedure (SOP)**

# Azoxymethane (AOM) SOP

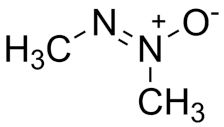
JABSOM EHSO Last Updated:
Manoa EHSO Last Updated: September 9, 2021 by Michael Soles

**Principal Investigator (PI):**

**Start Date and Duration of Project:** **Room #:**

**Approximate # of Cages:** **Housing:**

**Hazardous Chemicals Used: Azoxymethane (AOM)**



**General Information**
Azoxymethane is a clear oily liquid. It is a highly toxic and potent carcinogen used to induce colon cancer in rats and mice. It is a known teratogen that is harmful to the following organs: teeth, pancreas, liver, blood, central nervous system, large intestines, heart, nerves, and kidneys. Training on this SOP is required before working with Azoxymethane. This should include but is not limited to reviewing the SDS, training on the physical hazards of the cytotoxics, symptoms of exposure, appropriate work practices, and proper use of personal protective equipment (PPE). The Oral LD50 for Azoxymethane is 5.1 mg/kg.
Institutional Animal Care and Use Committee (IACUC) protocols that include Azoxymethane should reference this SOP to verify that the standard operating procedures are being followed.

**Acute Health Effects**

- Eyes: Irritation
- Skin: Irritation
- Ingestion: Fatal if swallowed
- Inhalation: Limited data; consult a physician

**Chronic Health Effects**
Antineoplastic drugs may be potential carcinogens, mutagens, teratogens (harms the fetus), and reproductive hazards.

**Regulatory Limits**
There are no current established occupational exposure limits for Azoxymethane. **There are no established safe levels of exposure to cytotoxic drugs. Medical opinion is that even small quantities of cytotoxic drugs and their metabolites should be avoided as much as possible.**

**Notification**
PI group will email the Operations Manager (wongmich@hawaii.edu) to notify AVS of drug administration 24 hours in advance to request chemical caging if necessary. PI group will fill out the chemical hazard label and place it on the cage card holder. All information will be present, including cage card number, chemical used, start and end dates.

**Method of administration:**

**Cage Labeling**

- Chemical Hazard Label
- Azoxymethane
- Date Started
- Date Ending
- Cage card number

**If the PI needs to terminate a cage during the treatment period, date the granite card and turn it in as normal, leave the chemical treated cage on the rack and write "terminated" on the chemical label so AVS knows how to dispose of the cage bedding. Do not place the cage on the floor with other cages.**

**Disposal Procedures for Carcasses**
Place carcasses in the hazard bin in the procedure room freezer. Regular disposal in the tissue digester.

**Expected Observations of Animals:**

**What AVS should do if a sick animal is found:**

**What AVS should do if a dead animal is found:**

**John A. Burns School of Medicine and University of Hawai'i at Manoa**
**Collaborative Standard Operating Procedure (SOP)**

## Azoxymethane (AOM) SOP

JABSOM EHSO Last Updated:
Manoa EHSO Last Updated: September 9, 2021 by Michael Soles

**PI and Technician Contact Information:**

**General Information Continued**

The main routes of exposure to cytotoxic materials are through the inhalation of the material's particles or aerosols, skin absorption, inadvertent ingestion through contact with contaminated food or cigarettes, and needle stick injuries. Exposure may occur during preparation and administration of the material, handling of body fluids from animals receiving cytotoxic drugs, handling and disposal of cytotoxic wastes and related trace contaminated material, and transportation of cytotoxic materials. Some cytotoxic materials have a direct irritant effect on the mucous membranes, eyes and skin. Spills onto skin surfaces that have cuts or abrasions and punctures of the skin with a contaminated needle or broken glass can lead to severe soft tissue injury. They should be treated immediately and observed for potential problems.

- Review the Product Safety Data Sheet (SDS) prior to use of Azoxymethane.
- Personnel should not work with Azoxymethane if the skin is cut or scratched.
- Pregnant or breastfeeding women should not work with AOM.

**Chemical Preparation:**

- Dose preparation work must be conducted in a chemical fume hood.

**Animal Handling and Dosing Controls:**

- Due to the limited exposure data of AOM, dosing of animals in a chemical fume hood or ducted (total exhaust) class II, Type B2 biological safety cabinet (BSC) is recommended for maximum worker protection.
- Alternatively, when exhaust ventilation is unavailable, the use of a non-ducted class II, Type A2 BSC **in conjunction with** personnel using a powered air-purifying respirator (PAPR) may be considered. **The PAPR must be fitted with organic vapor cartridges and p-100 filtration.**
- Where possible work on absorbent pads.
- Contaminated sharps must be placed in puncture-proof and leak-proof sharps containers. Transport and store sharps containers in a chemical fume hood after use. Label as Azoxymethane Sharps.

**PPE:**

- Personnel must wear appropriate PPE for animal work.
- Consider double gloving (nitrile or compatible cytotoxic-resistant gloves) especially when cleaning. Double gloving is also recommended during animal dosing if dexterity can be maintained.
- Always wash hands thoroughly after handling Azoxymethane.

**Cage Changes / Wash Out Period:**

- Recommend 72 hours. Contamination is likely to persist indefinitely as the waste is adsorbed and absorbed by the bedding limiting evaporation.
- Care should be taken to avoid exposure to bedding dust when handling exposed animals and their waste materials during this time.
- Consider using compressed cotton fiber bedding pads (iso-PADS) instead of standard bedding. The pads are very absorbent, will minimize the creation of aerosols and disposal is easier.
- Cage bedding cleanout and waste processing work must be completed in either a chemical fume hood, ducted (total exhaust) class II, Type B2 biological safety cabinet (BSC), **OR** in a non-ducted class II, Type A2 BSC **in conjunction with** personnel using powered air-purifying respirators (PAPRs). **The PAPR must be fitted with organic vapor cartridges and p-100 filtration**.

**Normal Cleaning:**

- Decon areas where Azoxymethane is prepared and/or administered. The area must be cleaned and decontaminated with a 10% bleach solution immediately following each task. Leave the bleach solution in contact with surfaces for 5 minutes. After wiping up the bleach solution, clean the surface with soap and water. Potentially contaminated areas include bench tops, biological safety cabinet interiors, equipment, reusable personal protective equipment, intravenous bags, and tubing.
- Decon chemical fume hood or BSC after cleaning cages.

**Small Spills (<10mL):**

- Spills inside of a chemical fume hood can be controlled by closing the sash to its lowest level. Soak a paper towel with a 10% bleach solution and cover the spill for 10 minutes. Collect the spill clean-up materials as hazardous waste.
- Spills outside of a chemical fume hood must be covered with a paper towel and sprayed/soaked with a 10% bleach solution immediately. Leave the bleach solution in contact with surfaces for 10 minutes. After wiping up the bleach solution, clean the surface with soap and water. Leave the area to allow AOM to dissipate if evaporation is suspected.

**Accidental Release (Large Spills):**

- Evacuate immediately and call 6-6911.

**Accidental Exposure:**

- Needlestick or animal bite - Return rodent to cage and wash area for 15 minutes. Notify your supervisor immediately. Seek medical advice immediately about Azoxymethane exposure. Take a copy of the product SDS with you.
- An emergency eyewash station and safety shower should be accessible nearby where Azoxymethane is handled.

**Storage and Transportation:**

- Keep containers tightly closed in a cool, dry, and well-ventilated area. Recommended storage temperature is -20 °C. Avoid strong oxidizing agents.
- When transporting Azoxymethane, the vials should be placed in secondary, sealed, plastic, labeled, non-breakable containers.
- Contact AVS Staff and PI for specific waste procedures.

# Appendix 3

# Waste Management SOP

# Waste Management Standard Operating Procedures – AVS Vivaria

First Issued: 11/19/14, Revised: 1/21/15, 4/24/15, 6/28/18 D Talerico
IBC Approved: 1/28/15, JABSOM EHSO Approved: 1/26/15

Biological Waste - Hazardous / Potentially Hazardous

1- AVS collects all procedure and animal room waste in red, biohazard, autoclave bags for sterilization prior to disposal
2- Waste bins in procedure rooms and animal holding rooms are labeled with a standard "Biohazard" symbol.
3- Protocol specific biohazard waste is collected in red, biohazard, autoclave bags, bags are closed by wrapping a piece of tape around the neck of the bag, and bags are labeled with the PI name, date, room number and agent prior to transporting to the cage wash for autoclaving. Transport the bags on a cart.
4- AVS autoclaves waste at 250 degrees F for a minimum of 30 minutes in the medium autoclave, room 128.
5- All red, biohazard bags are placed within regular, black trash bags before disposal in the facility dumpster. Bags are labeled autoclave tape and have noted the date, user initial, cycle, and "completed/passed"
6- Efficacy of the autoclaves is validated by monthly runs of *geobacillus stearothermophilus* biological indicators followed by incubation at 55 degrees C.
7- In the event of a bag rupture or spill of untreated, non-liquid, infectious waste, materials will be placed in non-red autoclave bags using non-breakable scoops or dustpan-like aid. Personnel performing the clean-up will be appropriately dressed in personnel protective equipment (e.g., laboratory coat, water resistant apron, utility gloves, and safety goggles). After pick-up, all surfaces exposed must be covered with paper toweling and moderately flooded with clidox 1:18:1 or agent specific disinfectant. The disinfectant must sit for a minimum 15 minutes. This toweling must be disposed of by autoclaving as above. All materials used to clean up the spill must be autoclaved.
8- In the event of autoclave failure, contact Facilities (692-0914) for Kakaako issues or Ryan Jefferies (916-549-8394) for Manoa concerns. Infectious waste must be sterilized in an alternative autoclave (bulk autoclave room 128 or ABSL3) or stored in a certified Biosafety cabinet until the repair is complete. Non-infectious waste can be stored in the dirty cage wash until the repair is complete.

Blood contaminated Sharps

Shall be discarded in biohazard red sharps containers, autoclaved at 250 degrees F for minimum of 30 minutes, and given to EHSO for disposal. Contact Kakaako EHSO 692-1855 or Manoa Biosafety 956-3197 for pickup.

Chemical Waste

1- All chemical waste, such as gloves, paper towels, and other disposables, are to be placed in polypropylene bags within yellow, chemical waste bins. Work with hazardous chemicals is designated to procedure rooms 135, 146 and 147 at Kakaako. At Manoa, chemical hazard waste disposal and handling is on a case-by-case basis.

2- AVS collects chemical waste and stores it in a chemical waste drum in the Kakaako loading dock until EHSO can coordinate a pickup. Each deposit is logged.
3- Glassware contaminated with hazardous chemicals shall be placed in a puncture resistant container, labeled with the chemical name and turned into EHSO for disposal.
4- Chemical contaminated Sharps Shall be discarded in yellow, chemical sharps containers and given to EHSO for disposal.

Animal Waste

1- Animal carcasses are disposed of via alkaline hydrolysis or incineration. *(See Tissue Digester SOP, Dead Animals and Carcass Disposal SOP for details)* Animals may be approved to be taken out of the vivarium for terminal procedures. Carcasses are either returned to AVS for disposal or certification of disposal by the PI is provided to AVS.
2- Bedding should be handled as to reduce aerosols, within a change station or biosafety cabinet. If animal bedding, feed or general debris is not radioactive or infectious and does not contain recombinant materials, it may be disposed as regular waste; otherwise disposal of animals wastes must follow protocol specific procedures set by the Biological Safety Office, Environmental Health and Safety Office, and/or Radiation Safety Office.

# Waste Management Standard Operating Procedures – AVS Vivaria

First Issued: 11/19/14, Revised: 1/21/15, 4/24/15, 6/28/18 D Talerico
IBC Approved: 1/28/15, JABSOM EHSO Approved: 1/26/15

## Non-Hazardous Waste

Non-hazardous waste outside of facility is handled by the custodial staff of the Facilities Management Office. Glassware not contaminated with radiological, biological or hazardous chemicals shall be placed in a trash bag within a puncture resistant container, labeled “glass or broken glass”. This can be disposed of in the facility dumpster.

# Appendix 4
# Respiratory Protection Program

AVS Medical Evaluation and Preventive Medicine Program
First Issue 1996, Revised 1999, 2003, 12/1/09, 2/12/10, 3/2/10,
3/11/14, **8/4/15** Approved by: IBC on 12/2/09, IACUC on
12/3/09 **RESPIRATORY PROTECTION PROGRAM FACT SHEET**

**General Scope**

A respirator is a personal protective device used to protect the wearer from inhalation of harmful levels of airborne contaminants. The use of respirators is acceptable only when engineering or work practice controls (e.g., local exhaust ventilation) are inadequate or not feasible, or while these controls are being designed or constructed. Respirators must be carefully selected, properly fitted, regularly inspected and cleaned, and repaired when broken. Wearers must be medically evaluated for respirator use and trained in the appropriate use, care, maintenance and limitations of respirator protective devices. Work areas must be periodically evaluated to determine the appropriate level of respirator protection necessary.

**Applicable University Policy/EHSO Contact**

UHM Respirator Protection Program; Industrial Hygiene section (956-3204)

**Applicable Regulations**

29 CFR 1910.134 - OSHA Respiratory Protection Standard

Note: More specific requirements for respirator use may be contained within substance – specific regulations (e.g., asbestos, formaldehyde, lead, etc.)

**Summary of Requirements**

- Development of a written respirator protection program.
- Respirator users shall be evaluated by a licensed health care professional to determine if they are physically able to perform work while using a respirator.
- Respirators shall be selected based upon the contaminant hazards presented to the wearer.
- Training shall be provided annually and include information on: selection of respirators; inspection, maintenance, storage and cleaning of respirators; limitations and emergency procedures; and methods of donning, adjusting and fit-checking .
- NIOSH - certified respirators must be used.
- All negative pressure respirators shall be fit-tested on an annual basis.
- Compressed air used for supplied air respirators shall comply with the air quality requirements for Grade D Breathable Air described in CGA Commodity Specifications G-7.1-1989.
- Current records for training, fit-testing, medical evaluation and hazard assessments should be maintained by the supervisors.
- The UHM Respirator Protection Program shall be reviewed annually with modifications implemented as necessary.

**Voluntary Use of Respirators**

When an employee chooses to use a dust mask but is not required to wear one for protection against a hazard, the employee does not need training or fit-testing but must be informed of Appendix B of the University's respiratory protection program.

If an employee chooses to use a non-disposable, tight fitting facepiece (i.e. rubber half-face) but is not required to, then the employee must comply with all requirements of the University's respiratory protection program.

05/06

Mucocutaneous Exposure

Mucocutaneous exposure, when working with primates or their wastes or other experimental animals, requires flushing of eyes and other mucous membranes for a full 15 minutes following accidental exposure using approved equipment and solutions. Care must be taken not to use towels to wipe out contaminating material, which may serve to enhance deposition of micro-organisms or infectious agents into delicate tissues. These incidents shall be immediately reported to the AVS Animal Care Supervisor and logged in the "Bite-Scratch" log book.

# Appendix 5

# Form A: Health History Questionnaire

UNIVERSITY of HAWAI'I® SYSTEM

**FORM A**

INITIAL (BASELINE) EVALUATION

# Health History Questionnaire (HHQ) for AVS-Operated Vivaria

To ensure a safe working environment for staff handling or being exposed to research animals or their by-products used in AVS-operated vivaria, complete an initial HHQ to enroll in the OHSP. Consult your supervisor/Principal Investigator (PI) for risk assessment for answering questions 1-3.

Email completed forms to Straub Occupational Health Services to jennifer.oldershaw@straub.net and copy dora.sakata@straub.net, or have it reviewed by an equivalent Health Professional provider licensed in the USA.

| **Enrollee and PI/supervisor complete questions 1-3** | | |
|---|---|---|
| **Enrollee Name:** *Type enrollee name here.* | | **Enrollee Email:** *Type enrollee email here.* |
| **Date of Birth:** *mm/dd/yyyy* | **Sex:** Select one | **Academic Unit:** *Select a unit* |
| **PI Name:** *Type PI name here.* | | **PI Email:** *Type PI email here.* |
| *PI Signature* | | *Date* |

| | |
|---|---|
| 1. How many months/years at your present position? | *Type number* Years, *Type number* Months |

2. Do you have exposure to the following (includes live animals, fresh tissue or products derived from live animals)? Check all that apply:

- ☐ Laboratory rodents (mice, rats, guinea pigs, hamsters)
- ☐ Laboratory rabbits
- ☐ Laboratory animals (other)—*Describe other animals*
- ☐ Human tissue/bodily fluids. List types (see question #4): *List types here*
- ☐ Infectious Organisms. List organisms (see question #4): *List organisms here*
- ☐ Chemicals in animals. List chemicals: *List chemicals here*
- ☐ Other—*Describe others here*

1. Protocol specific requirements that may apply
    a. Hepatitis B vaccination is recommended (if exposed to human tissues/bodily fluids).
    b. Provide date of last vaccination (if applicable): *Select a date*
    c. Tetanus vaccination. Provide date of last vaccination: *Select a date*
    d. Is a respirator required per the Institutional Biosafety Committee (IBC) protocol? *Yes or No*
    e. Other, describe, provide date of last vaccination or medical test:
    *Describe other vaccinations and/or tests here*

## CONFIDENTIAL

**Enrollee to complete questions 4-8**

3. TB Skin Test

   a. Researchers, provide date of your last test: *Select a date*
   Comments about your TB test results:
   *Type comments here*

   b. Are you a student enrolled at UH Mānoa? *Yes or No*
   If yes, your TB clearance is reviewed by UH Health Services.

4. Are you allergic to any animals or materials exposed to in the vivarium that you know of? *Yes or No*
   If yes, list those which you suspect or know you are allergic to: *Type allergies here*
   a. If yes, are your allergic symptoms controlled by PPE and/or medications? *Yes or No*

5. Are you pregnant or intending to become pregnant? *Yes or No*

6. Are you under a doctor's care for a medical condition(s) that may cause immune suppression (e.g. cancer treatment, chronic infection, etc.)? *Yes or No*
   If yes, describe: *Type description here*

8. ☐ The information provided is true and complete to the best of my knowledge and I am aware that deliberate misrepresentation may jeopardize my health. I understand that this information is confidential and will not be released without my knowledge or written permission. There may be follow up with the Health Professional regarding your questionnaire.

*Enrollee Signature* _____ *Date* _____

# Appendix 6

# Form B: Health Professional Medical Evaluation to Principal Investigator

**FORM B**

**Form B: Health Professional Medical Evaluation to Principal Investigator** *(rev. 08/12/19)*

*Form B: Indidvidual completes section 1 contact information and emails to Straub at Jennifer.oldershaw@straub.net and copy dora.sakata@straub.net. After reviewing the enrollee's Form A Health History Questionnaire, the HP will complete, sign, and **email** Form B to the enrollee's academic unit's point of contact: JABSOM meeksj@hawaii.edu; UHCC cmartin@cc.hawaii.edu; AVS stacyo@hawaii.edu*

**Section 1:** Contact Information (Individual completes this section)
Academic Unit (check one): ☐ JABSOM ☐ UH Cancer Center ☐ Animal & Veterinary Services

Name of Individual:

Individual's email:

Principal Investigator's (PI) Name:

PI's email:

**Section 2:** Health Professional's Assessment:

Based on the health history information available to me, the enrollee is (Check all that apply):

☐ Physically fit to work with animals or animal by-products and/or infectious agents

☐ Temporarily not fit until further evaluation described below:

- ☐ Refer to primary care physician for
  - ☐ Further medical evaluation, diagnostic tests
  - ☐ Immunizations recommended, describe:
- ☐ Additional Personal Protective Equipment (PPE's) required:
- ☐ Other, describe:

☐ Not fit to work with animals or animal by-products and/or infectious agents

Comments:

☐ Individual has declined further evaluation and has completed and signed Form C, dated _____
*(mm/dd/yyyy)*

Print name of Health Professional who reviewed Form A:

Organizational Affiliation:

_____ _____

Signature of Health Professional Date *(mm/dd/yyyy)*

# Appendix 7

# Form C: Declination

**FORM C**

**Form C: Declination** *(revised 08/12/19)*

You may choose to decline further medical evaluation and/or immunizations recommended by the Health Professional (HP) who initially reviewed your information on your Health History Questionnaire (HHQ) Form A. If you choose to decline, complete, sign, and **email** Form C to Straub, Jennifer.oldershaw@straub.net and copy dora.sakata@straub.net, or to equivalent Health Professional provider. HP completes Form B with this information and emails Form B to enrollee's academic unit's point of contact. At any time you have the option to reconsider, by completing a HHQ (Form A) and resubmitting it to the HP.

**Section 1:** Contact Information (Individual completes this section)

Individual's Name: Today's Date:

Individual's birthdate:

Individual's email address:

Academic Unit (check one): ☐ JABSOM ☐ UH Cancer Center ☐ Animal & Veterinary Services

Individual's Principal Investigator's Name:

Principal Investigator's email address:

**Section 2:** Further Medical Evaluation (check all that apply)

☐ I understand the risks associated with working with biological organisms and chemicals in research animals, or entering the vivariums and that the Health Professional has recommended that I be examined by a physician to assess risks to my health and ways to mitigate my risks. Nevertheless, I choose not to be examined by a physician.

**Section 3:** Recommended Immunizations (check all that apply)

☐ I understand that certain immunizations can be administered that may lessen the risk of acquiring specific serious or fatal diseases; nevertheless, I choose to decline these immunizations.

_____ _____

Participant's Signature Date *(mm/dd/yyyy)*

# Appendix 8

# Straub Registration Data Sheet

Form D

**Straub** Occupational Health Services

800 South King Street • Honolulu, Hawaii 96813 • Phone No. (808) 529-4949 • Fax No. (808) 529-4950

**REGISTRATION DATA SHEET**

Email completed Form D to Straub: Jennifer.oldershaw@straub.net and dora.sakata@straub.net

**Patient please print legibly**

Patient Name _____ _____ _____
First Middle Last

Birth date _____ Sex: (Circle One) Male / Female Age _____

Marital Status: (Circle One) Single Married Divorced

~~Social Security Number~~ Last 4 digits SS# _____ Race _____

Religion _____ Any Special Needs _____

Address Line 1 _____

Address Line 2 _____

City, State _____ Zip Code _____

Telephone _____ Work Phone _____ Cell Phone _____

Employer _____ Employment Status _____

Name of Personal Physician _____

**EMERGENCY CONTACT INFORMATION**

Contact Name #1 _____ Relationship _____
Telephone _____ Cell Phone _____

Contact Name #2 _____ Relationship _____
Telephone _____ Cell Phone _____

~~**INSURANCE INFORMATION**~~ (If available, Examination Costs are covered by your Company.)

Subscriber Name _____ Insurance Name _____

Policy Number _____ Effective Date _____

Relationship to Subscriber _____

# TERMS AND CONDITION OF SERVICES

1. ***Consent for Treatment***

I consent to medical care and treatment at this medical facility. Accordingly, I consent to the procedures, which may be performed during my clinic visits or this hospitalization, including emergency treatment. I authorize and consent to any of the following: X-ray examinations, laboratory procedures, other diagnostic procedures, medical or surgical treatment, or other clinical and hospital services including the use of telemedicine, photography, videotaping or other audio and/or visual recording, as directed by my physician(s) or my physician's (s) assistants, which my physician(s) believes are advisable to evaluate, diagnose, or treat me or document findings, and to other services rendered under the general and special instructions of my physician(s).

I am aware that the practice of medicine and surgery is not an exact science. I acknowledge that this facility has not made any guarantees to me as to the results of treatments or examinations. I am also aware that I should ask my physician any questions that I may have about my diagnosis, treatment, risks or complications, alternative forms of treatment, and/or anticipated results of treatment.

2. ***General Duty Nurses***

I understand it is the standard practice of this medical facility to provide general duty nursing care. This facility shall not be responsible to provide additional nursing care. If I need or desire additional nursing services, I will be responsible for obtaining and paying for such services.

3. ***Disclosure of Information for Payment Purposes***

I understand my medical information will be sent to my insurance carrier for billing purposes for any treatment I may receive at this medical facility including treatment for Human Immunodeficiency Virus (HIV) and/or Acquired Immune Deficiency Syndrome (AIDS), mental health diagnoses, and/or drug, alcohol or other substance abuse.

I understand according to Hawai'i law, I may choose to pay for services pertaining to HIV or AIDS treatment or any other services if I do not want my health information provided to my insurance company. I agree to notify this medical facility of my wishes regarding payments before these services are provided. I also understand that if I fail to pay for services, this information will be sent to my insurance company.

4. ***Information to Other Providers***

I understand that this facility may share my information electronically or on paper with other providers in the course of my treatment, and/or making arrangements for my continuing care, or upon request when seeking care from other providers. Examples of shared information may include, but are not limited to, mental health, cosmetic procedures, medications, and other past medical history. If I prefer that this medical facility not use or share my information, I may submit a written request for consideration per this facility's Notice of Privacy Practices.

5. ***Financial Responsibility***

I understand that I will receive a bill from this medical facility. The physician(s) may also bill me separately for their services provided to me while at this facility. I further understand not all physicians are employees of this medical facility. I understand and agree to pay for charges for services rendered and that I am obligated to pay for services in accordance with the regular rates and terms of this medical facility. This medical facility reserves the right to charge a Late Payment Fee and/or Returned Check Fee.

I understand that it is my responsibility to provide all applicable insurance information to this medical facility. I am aware that many insurances require preauthorization or certification, and I understand that I will be responsible for my hospital bill if I fail to provide complete and accurate information at the time of service or immediately following discharge.

If I do not want information regarding any services I receive shared with my insurance and/or choose to pay all charges myself, I will notify this medical facility prior to receiving services.

Should the account be referred to an attorney or collection agency for collections, I agree to pay any reasonable attorney's fee, collection expenses and interest at the statutory rate on all delinquent accounts, whether or not the account is referred to a collection agency.

6. ***Medicare Coverage (if applicable)***

I certify that the information I have been given in applying for payment under Medicare is correct. I authorize the Social Security Administration to release information about my Medicare effective dates and Medicare claim number to this medical facility. I authorize any holder of medical or related information about me to release my information needed to process this or a related Medicare claim to the Social Security Administration or its intermediaries. I request that payment of benefits be made on my behalf to this medical facility for any services provided to me by this medical facility.

7. ***Assignment of Benefits***
I hereby authorize assignment of my medical insurance benefits I am due to this medical facility for application to the bill for medical services and supplies I received. I further authorize this medical facility to receive direct payment from all such benefit payments. I agree to remain responsible and liable for payments of all amounts due to this medical facility and not received from my insurance carrier(s). I understand this medical facility is submitting claims on my behalf as a courtesy. I SHALL NOT REVOKE THIS ASSIGNMENT FOR ANY REASON.

8. ***Personal Valuables (in-patient only)***
To the extent that I am able to function without prosthetic devices (e.g., denture, eyeglasses, hearing aids, etc.), I am encouraged to send them and other valuables or personal property home while I am hospitalized. I will not hold this medical facility liable for loss of, or damage to, my personal property regardless of its nature or value.

9. ***Patient Rights and Responsibilities***
I acknowledge I have received my Rights and Responsibilities as a patient as well as information regarding non-discrimination and language access services.

10. ***In-Patient Directory Information Preference (initial)***
I understand this facility maintains a patient directory and may share information about my location or general condition to anyone who asks about me by name in accordance with my preferences, as indicated here. (Initial your preference)

_____FULL INFO – I agree to be listed in the patient directory

_____NO INFO – I do not want to be listed in the patient directory

---

***OUR USE of PHONE, TEXT and EMAIL***
I understand by giving my phone number and/or email address, I am agreeing to receive texts and/or phone calls (including those that are autodialed, automated or pre-recorded) and emails from HPH and its affiliates. HPH and its affiliates may send information to or contact me at this number and/or email address in connection with my care, appointments and services provided or available to me. I also understand my consent is optional and standard text messaging and/or data rates may apply. Initial: _____

CELL PHONE NUMBER: _____ EMAIL ADDRESS: _____

***MINORS OR INCAPACITATED PERSONS*** – This patient is:
☐ A minor _____ years of age.
☐ Incapacitated and unable to sign for the following reason(s): _____

I have read this consent and I am the patient, or the patient's duly authorized representative. On my own behalf (or on the behalf of the patient), I accept and agree to be bound by all these TERMS AND CONDITIONS OF SERVICES.

_____ _____ _____
**PATIENT OR REPRESENTATIVE'S SIGNATURE** **DATE** **TIME**

_____ _____
**PRINT NAME** **REPRESENTATIVE'S RELATIONSHIP TO PATIENT**

REPRESENTATIVE: (Please describe your authority to act on behalf of the patient)

---

***ACKNOWLEDGEMENT OF RECEIPT OF THIS MEDICAL FACILITY'S NOTICE OF PRIVACY PRACTICES***

_____ (Initial) I have received a copy of this facility's NOTICE OF PRIVACY PRACTICES.

The patient or their duly authorized representative is: ☐ unable or ☐ unwilling to make this acknowledgement.

---

HAWAI'I PACIFIC HEALTH | KAPI'OLANI PALI MOMI STRAUB WILCOX

☐ Inpatient ☐ Outpatient ☐ Emergency Room

# Appendix 9

# Straub Authorization for Release of Medical Information

**Form E** Attachment 5

Email completed Form E to Straub: Jennifer.oldershaw@straub.net and dora.sakata@straub.net

*Office use only:* ID Check: _____ MRN: _____
Source: _____ Released By: _____ Date _____

## AUTHORIZATION FOR RELEASE OF MEDICAL INFORMATION

I hereby authorize this provider/facility **STRAUB OCCUPATIONAL HEALTH SERVICES**

located at the following address 800 S KING ST 3RD FL, HONOLULU, HAWAII 96813

to use or disclose my individually identifiable health information as described below. I understand that this authorization is voluntary and that this facility will not withhold treatment if I refuse to sign this authorization.

Patient Name: _____ Date of Birth: _____ ~~SSN:~~ Last 4 digits SS# _____

Other names I may be known by: _____

Address: _____

Telephone: Work: _____ Home: _____ Other: _____

This authorization covers the services provided during the period of ___/___/___ (mm/dd/yy) to ___/___/___ (mm/dd/yy)

**I would like to** ☐ **Review** ☐ **Copy** ☒ **Request a release of the following information:** **(check as many as apply)**

- ☒ History and Physical Examination (clinic)
- ☐ History and Physical Report (hospital)
- ☒ Laboratory tests results
- ☐ AIDS or HIV infection/HIV Testing
- ☐ Treatment for alcohol and/or drug abuse
- ☐ Mental health or psychiatric services (*excluding psychotherapy notes*)
- ☐ Progress Notes
- ☐ Discharge Summary
- ☐ Pathology reports
- ☐ ER Records
- ☐ Clinic Visit Notes
- ☒ X-ray reports results
- ☒ X-ray Films
- ☐ Consultation Reports
- ☐ Surgery reports
- ☐ Billing Records
- ☐ Photographs, videotapes, digital or other images
- ☒ Other (please specify) DRUG TESTING AND/OR BREATH ALCOHOL TESTING RESULTS

**Note: Release of Psychotherapy Notes, as defined by HIPAA Regulations, requires a separate authorization**

~~1. My initials specifically authorize the release of any of the following kinds of information that are or may be in my record (Note: we will not release your records if they contain any of the following unless initialed by you):~~

~~AIDS or HIV infection or venereal disease _____ Treatment of alcohol or drug abuse _____ Mental health(including medications)/psychiatric services~~

2. This information is to be disclosed for the purpose of: ☐Continuing Health Care ☐Insurance ☐Legal Purposes
   ☒ Other (specify): PRE/POST EMPLOYMENT, ANNUAL AND COMPANY REQUIRED TESTING(S)
3. Information to be released or sent to:
   Company Name: Academic Unit Telephone: _____
   Address: _____ City _____ State _____ Zip _____
4. I understand that if the organization authorized to receive the information is not a health plan or health care provider; the released information may no longer be protected by federal privacy regulations.
5. This facility, its employees, officers, and physicians are released from any legal responsibility or liability for releasing the requested information as authorized.
6. My initials indicate I have read and agree to the following:
   a. **Initials:** _____ I understand that this authorization will expire 1 year from the date signed below or upon the following event or condition _____ unless revoked earlier.
   b. **Initials:** _____ I understand that I may revoke this authorization at any time by notifying this facility in writing. I also understand that revoking this authorization will not apply to any information released by this facility before they received the revocation. (See our *Notice of Privacy Practices* for instructions)
   c. **Initials:** _____ I understand that the provider/facility reserves the right to collect reasonable fees for the copies I have requested.

***(Form MUST be completed before signing)***

Signature: _____ Print Name: _____ Date: _____

If signed by someone other than the patient, please describe your authority to act on behalf of the Patient:

_____

MAIL OR FAX TO: STRAUB CLINIC AND HOSPITAL, MEDICAL REPORTS DEPARTMENT,
888 So. King St., Honolulu, Hawaii 96813 FAX#: ~~808/522-3207~~

HAWAIʻI PACIFIC HEALTH | STRAUB MEDICAL CENTER

ADDRESSOGRAPH: (Name / Life # / DOB / SS# / Age / Gender)

*Form# HPH00020 - Straub Occ Health Auth Release Info (91562 Rev.7/12)*

# Appendix 10

# Straub OSHA Respirator Medical Evaluation Questionnaire

Form F: Email completed Form F to Straub: Jennifer.oldershaw@straub.net and dora.sakata@straub.net

**Straub** Occupational Health Services
800 South King Street • Honolulu, Hawaii 96813 • Phone No. (808) 529-4949 • Fax No. (808) 529-4950

# OSHA RESPIRATOR MEDICAL EVALUATION QUESTIONNAIRE

To the employee: Can you read? ☐ Yes ☐ No

Part A. Section 1 Please print legibly.

| Legal Name | | Age | ☐ Male ☐ Female | Company Name |
|---|---|---|---|---|
| Social Security # XXX-XX- | Date of Birth | | | |
| Job Title | Department | A phone number where you can be reached by the health care professional who reviews this questionnaire (include area code): _____ The best time to call you at this number: _____ | | |

Has your employer told you how to contact the healthcare professional who will review this questionnaire? ☐ Yes ☐ No

Check the type of respirator you will use (you can check more than one category):

☐ N, R or P disposable respirator (filter-mask, non-cartridge type only).

☐ Other type (for example, half- or-full-facepiece type, powered-air purifying, supplied-air, self-contained breathing apparatus).

Have you worn a respirator? ☐ Yes ☐ No If "Yes", what type(s):

Part A. Section 2. Please check yes or no.

1) Do you currently smoke tobacco, or have you smoked tobacco in the last month? ☐ Yes ☐ No

2) Have you ever had any of the following conditions?

| | | |
|---|---|---|
| a) Seizures (fits) | ☐ Yes | ☐ No |
| b) Diabetes (sugar disease) | ☐ Yes | ☐ No |
| c) Allergic reactions that interfere with your breathing | ☐ Yes | ☐ No |
| d) Claustrophobia (fear of closed-in places) | ☐ Yes | ☐ No |
| e) Trouble smelling odors | ☐ Yes | ☐ No |

3) Have you ever had any of the following pulmonary or lung problems?

| | | |
|---|---|---|
| a) Asbestosis | ☐ Yes | ☐ No |
| b) Asthma | ☐ Yes | ☐ No |
| c) Chronic Bronchitis | ☐ Yes | ☐ No |
| d) Emphysema | ☐ Yes | ☐ No |
| e) Pneumonia | ☐ Yes | ☐ No |
| f) Tuberculosis | ☐ Yes | ☐ No |
| g) Silicosis | ☐ Yes | ☐ No |
| h) Pneumothorax (collapsed lung) | ☐ Yes | ☐ No |
| i) Lung Cancer | ☐ Yes | ☐ No |
| j) Broken Ribs | ☐ Yes | ☐ No |
| k) Any chest injuries or surgeries | ☐ Yes | ☐ No |
| l) Any other lung problem that you've been told about | ☐ Yes | ☐ No |

4) Do you currently have any of the following symptoms of pulmonary or lung illness?

| | | |
|---|---|---|
| a) Shortness of breath | ☐ Yes | ☐ No |
| b) Shortness of breath when walking fast on level ground or walking up a slight hill or incline | ☐ Yes | ☐ No |
| c) Shortness of breath when walking with other people at an ordinary pace on level ground | ☐ Yes | ☐ No |
| d) Have to stop for breath when walking at your own pace on level ground | ☐ Yes | ☐ No |
| e) Shortness of breath when washing or dressing yourself | ☐ Yes | ☐ No |
| f) Shortness of breath that interferes with your job | ☐ Yes | ☐ No |
| g) Coughing that produces phlegm (thick sputum) | ☐ Yes | ☐ No |
| h) Coughing that wakes you early in the morning | ☐ Yes | ☐ No |
| i) Coughing that occurs mostly when you are lying down | ☐ Yes | ☐ No |
| j) Coughing up blood in the last month | ☐ Yes | ☐ No |
| k) Wheezing | ☐ Yes | ☐ No |
| l) Wheezing that interferes with your job | ☐ Yes | ☐ No |
| m) Chest pain when you breath .deeply | ☐ Yes | ☐ No |
| n) Any other symptoms that you think may be related to lung problems | ☐ Yes | ☐ No |

| | | |
|---|---|---|
| 5) Have you ever had any of the following cardiovascular or heart problems? | | |
| a) Heart Attack | ☐ Yes | ☐ No |
| b) Stroke | ☐ Yes | ☐ No |
| c) Angina | ☐ Yes | ☐ No |
| d) Heart failure | ☐ Yes | ☐ No |
| e) Swelling in your legs or feet (not caused by walking) | ☐ Yes | ☐ No |
| f) Heart arrhythmia (heart beating irregularly) | ☐ Yes | ☐ No |
| g) High blood pressure | ☐ Yes | ☐ No |
| h) Any other heart problem that you've been told about | ☐ Yes | ☐ No |
| 6) Have you ever had any of the following cardiovascular symptoms? | | |
| a) Frequent pain or tightness in your chest | ☐ Yes | ☐ No |
| b) Pain or tightness in your chest during physical activity | ☐ Yes | ☐ No |
| c) Pain or tightness in your chest that interferes with your job | ☐ Yes | ☐ No |
| d) In the past two years, have you noticed your heart skipping or missing a beat | ☐ Yes | ☐ No |
| e) Heartburn or indigestion that is not related to eating | ☐ Yes | ☐ No |
| f) Any other symptoms that you think may be related to heart or circulation problems | ☐ Yes | ☐ No |
| 7) Do you currently take medication for any of the following problems? | | |
| a) Breathing or lung problems | ☐ Yes | ☐ No |
| b) Heart Trouble | ☐ Yes | ☐ No |
| c) Blood Pressure | ☐ Yes | ☐ No |
| d) Seizure | ☐ Yes | ☐ No |
| 8) If you've used a respirator, have you ever had any of the following problems? (If you've never used a respirator, check the following space and go to question 9) ____ | | |
| a) Eye irritation | ☐ Yes | ☐ No |
| b) Skin allergies or rashes | ☐ Yes | ☐ No |
| c) Anxiety | ☐ Yes | ☐ No |
| d) General weakness or fatigues | ☐ Yes | ☐ No |
| e) Any other problem that interferes with your use of a respirator? | ☐ Yes | ☐ No |
| 9) Would you like to talk to the health care professional who will review this questionnaire about your answers to this questionnaire? | ☐ Yes | ☐ No |

**Medications** (if none, write none) _____

_____

**Allergies** (If none, write none) _____

| Employee's Signature: | Date: |
|---|---|

**OFFICE USE ONLY**

**EXAMINATION**

| | | |
|---|---|---|
| Height | | |
| Weight | | |
| Blood Pressure | | |
| Pulse | | |
| Distance unc/corr | 20/ | |
| Near unc/corr | 20/ | |
| | **Normal** | **Abnormal** |
| Olfactory test | | |
| Whisper test | | |
| Facial configuration | | |
| Heart | | |
| Chest and lungs | | |
| Tympanic membranes | ☐ R ☐ L | ☐ R ☐ L |

**Additional Options (M.D. discretion)**

☐ **Full audiogram**

| Audiograms | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 250 | 500 | 1000 | 2000 | 3000 | 4000 | 6000 | 8000 |
| R | | | | | | | | |
| L | | | | | | | | |

☐ **Electrocardiogram**

☐ **Treadmill stress test**

☐ **Chest X-ray (one view)**

***Comments***

_____

_____

_____

_____

_____ _____

Examiner's Signature Date

# Appendix 11

# Vivarium Break Room Policy

# Vivaria Break Room Policy

First Issued: 12/4/15, Revised: 8/27/18
IACUC Approved: 1/21/16
IBC Approved:
Occupational Health Professional Name and Date Approved: 12/11/15

Policy and Rationale:
This policy identifies potential hazards and ways to mitigate human health risks that may be associated with the Animal and Veterinary Services (AVS) personnel break rooms at the JABSOM Kakaako and Biomedical Sciences Building (Biomed) vivaria. There may be potential for the AVS staff to carry allergens, such as animal dander, on their uniforms and into the break rooms.

This policy is also meant to mitigate potential risks of cross-contaminating resident animals in the vivarium. There may be potential for those in street clothes bringing contaminants (such as rodent pathogens) on their clothing from the outside into the break rooms. These contaminants might then be carried on AVS staffs' uniforms into specific-pathogen-free (SPF) areas of the vivarium, risking cross contaminating the resident animals.

Scope:

This policy covers the following individuals: AVS personnel dressed in facility-dedicated uniforms who regularly enter the break rooms for rest/water breaks, meals, meetings, and computer or telephone correspondence. Other AVS-associated personnel, who enter the break rooms include the veterinary staff, business office staff, interns, students, and volunteers. Occasionally individuals from the public must enter the break rooms. These non-AVS personnel include, but are not limited to, (1) speakers/vendors who educate the AVS staff, (2) individuals requesting access into the vivarium and who receive training by AVS personnel, (3) site visitors such as accreditors, architects, engineers and planners engaged in facilities projects in the vivarium, and (4) the UH Emergency Response Team (ERT).

Procedures:

1. The staff break rooms are designated as Transition Zones, restricted to AVS-authorized individuals only. Programmable proximity card access (at Kakaako) and PIN code authentication (at Biomed) are used to secure the break room from unauthorized access.

2. All persons requiring entrance into the break rooms will be pre-approved by AVS for access. All personnel will be educated on the potential hazards associated with the room (allergens, potential hazards that may be inadvertently carried into the room from the vivarium, etc.). They will be offered additional Personal Protective Equipment (PPE) to mitigate these risks, but have the option to decline in writing the use of additional PPE offered to them when in room. Acknowledgement of receiving education about the hazards and the offer of additional PPE will be signed and dated. All individuals actively accessing AVS break rooms will receive updated information and documented training for any new potential hazards identified in these areas. AVS Operations Manager will keep these signed acknowledgements on file. A disclaimer as to the potential hazards will also be posted on entry doors to the break rooms.

3. The following plan identifies potential hazards associated with the break rooms, provides a risk assessment, and specifies preventive measures and interventions. It also includes ways to mitigate risks of cross contaminating SPF animals in the vivarium by AVS staff who co-mingle with those wearing street clothes (potentially contaminated clothes and shoes) in the AVS break rooms.

| Potential Hazard | Risk Assessment | Preventive Measures and Interventions |
|---|---|---|
| Allergens (ie: animal dander on scrubs) | Minimal risk. Mice and a few rats and rarely other types of rodents are the only animals used, thus the dose of allergens in the environment and on uniforms is minimal. | 1) AVS staff working in the vivarium wear gloves when opening cages. 2) They remove gloves before exiting the room and wash their hands before existing the locker rooms. 3) AVS staff always open cages under an Animal Transfer Station (ATS). 4) 99% of the rodents are housed in individually ventilated cages. 5) Appropriate cage change schedules are adhered to which reduces ammonia and dander build-up. 6) Appropriate room air changes and pressure differentials minimize the spread of allergens in the immediate environment. |

| | | |
|---|---|---|
| Chemical and Biological Hazards | Minimal risk of AVS staff or researchers carrying chemical or biological hazards on their uniforms after working with hazard animals. | 1) Appropriate additional PPE is worn over AVS-dedicated uniforms or researcher's lab coats. Outer PPE is discarded upon leaving the room where hazards are used. 2) Staff utilize Biosafety cabinets and/or fume hoods when opening cages and/or working with hazard animals, and do not come in direct contact with the hazards. |
| Contaminants from Outside the Facility | Minimal risk of cross-contamination of AVS staff in dedicated uniforms co-mingling with individuals in street clothes in the break room. | 1) AVS staff don AVS-issued shoes when entering the vivarium proper to prevent contamination in the facility. 2) AVS staff don gloves and work in an ATS when opening cages and handling animals. 3) AVS staff "shower-in" and don additional, sterile PPE on top of scrubs when working with immune-compromised animals. 4) The break room areas are cleaned regularly. |

# Appendix 12

# Medical Clearance for Respirator Use

HAWAI'I PACIFIC HEALTH | STRAUB MEDICAL CENTER

CREATING A HEALTHIER HAWAI'I

Form H: Email completed Form H to Straub:
Jennifer.oldershaw@straub.net and dora.sakata@straub.net

# Medical Clearance for Respirator Use

## EMPLOYER COMPLETE THIS SECTION:

| EMPLOYEE NAME | SOC. SEC. NO. | DATE OF BIRTH |
|---|---|---|
| COMPANY NAME | SUPERVISOR NAME | DEPARTMENT |

Circle Type or Types of Respirator(s) to be Used:

Atmosphere-supplying respirator
Open-circuit SCBA
Supplied-air respirator
SCBA Air-purifying (non-powered)
Continuous-flow respirator
Closed circuit SCBA
Combination air-line and
Air-purifying (powered)

Level of Work Effort (Circle one):

Light Moderate Heavy Strenuous

Extent of Usage:

1. On a daily basis
2. Occasionally- but more than once a week
3. Rarely or for emergency situations only

Maximum Respirator Weight _____

Length of Time of Anticipated Effort in Hours: _____

Special Work Considerations (i.e. high places, temperature, hazardous material, protective clothing, etc.
If none, state "none". _____

_____

_____

_____ _____

Date Safety Representative Signature

## EMPLOYEE COMPLETE THIS SECTION:

Have you ever worn a respirator before? ☐ YES ☐ NO

If YES, describe any apparent difficulties noted with respirator use: _____

_____

_____ _____

Date Employee's Signature

## PHYSICIAN'S EVALUATION:

CLASS: (Circle)
1. No restrictions on respirator use
2. Some specific use restrictions
3. No respirator use permitted

Next Exam Due: _____

Restrictions: _____

_____

_____ _____

Date Michael Kusaka M.D. / Elisa L. Chong P.A.C.

STRAUB OCCUPATIONAL HEALTH
800 S. King St., 3rd Floor | Honolulu, HI 96813 | Phone: (808) 529-4949 | Fax: (808) 529-4950