

University of Maryland
Laboratory Animal Allergen
Exposure Control Plan
20 June 2014

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Introduction

University of Maryland faculty, staff and students may work with a variety of animals and animal products when engaged with biological research, teaching or animal care. These activities may expose employees to animal urine, dander and saliva. Certain proteins, associated with these animal products can trigger an allergic reaction in some employees and may lead to the development of other conditions (e.g. asthma). The development of an allergic response to animal or animal products while working with research animals is an occupational health concern at the University of Maryland (UMD). Prevention of animal allergies depends on controlling exposure in the work environment. Controlling occupational exposure to animal allergens can involve a broad range of prevention measures. The University of Maryland applies a comprehensive approach to control exposure to animal allergens through the use of engineering controls, administrative controls and personnel protective equipment (PPE).

This document comprises the allergen control and prevention policies and recommendations for faculty, staff and students working with animals or animal products in association with UMD facilities and laboratories.

The laboratory animal allergy exposure control guidance provided in this plan does not address chemical, biological, and physical hazards that may be present during work with animals. Additional engineering, administrative and PPE may be required based on the identification of such hazards in the research environment. Research programs involving immune compromised animals or requiring a sterile environment may also have specific environmental controls. When a facility or research plan has more stringent exposure or environmental controls in place they supersede the control guidance provided in this plan. These environmental controls may adequately address allergenic particulate exposure. Questions regarding allergy exposure controls in these environments should be directed to the facility manager, PI or DES.

Responsibilities

The principal investigator (PI) is directly and primarily responsible for the safe conduct of research in UMD laboratories. His/her knowledge and judgment are critical in assessing the risks involved with animal related research and appropriately applying the guidance

presented in this plan. However, responsibility for safe research practices is shared by all laboratory and facility personal. Many resources exist to assist the PI with these responsibilities including the Department of Laboratory Animal Resources (DLAR), the Institutional Animal Care and Use Committee (IACUC), the UMD Health Center, Occupational Health Clinic and the Department of Environmental Safety (DES).

A. Principal Investigator

1. Ensure that all eligibleⁱ personnel are enrolled in the Animal Handler Health and Safety Program and have submitted the Animal Handler Risk Assessment Form to the UMD Health Center Occupational Health Clinic.
2. Ensure all visitors and support services personnel entering the PI's work area are appropriately informed of the potential for exposure to animal allergens within the PI's specific area of responsibility.
3. Ensure the use of effective control measure(s) and other procedures are implemented to minimize human exposure to these hazards.
4. Develop and employ standard operating procedures (SOPS) that reduce the potential for allergen exposure, injury or illness to the lowest practical level.
5. Ensure that faculty, staff or students who become ill or are injured pursuant to performance of official duties in the laboratory have access to appropriate first aid and/or medical attention.
6. Ensure all employees and contract personnel under the PI's direct responsibility are instructed and/or trained on the effective practices and procedures that safety minimize the impact of animal allergen contamination within the work environment.

B. Supervisory faculty, staff, and teaching assistants (TA) shall—

1. Ensure all eligibleⁱ personnel are enrolled in the Animal Handler Health and Safety Program and have submitted the Animal Handler Risk Assessment Form to the UMD Health Center Occupational Health Clinic.
2. Review the contents of this plan with researchers, students, staff and visitors working in their specific laboratory;

3. Implement appropriate practices, procedures, and personal protective equipment (PPE) to minimize allergen exposure.
4. Provide specific instruction on the proper use of the required or recommended engineering controls, administrative controls and PPE.
5. Provide specific instruction for the proper disposal of the products and material directly related to working with animals.
6. Ensure that all personnel requiring a respirator or voluntarily using a respirator comply with the UMD Respiratory Protection Program.

C. Non-supervisory faculty, staff and students enrolled in the AHHSP

1. Complete and submit the Animal Handler Risk Assessment Form to the UMD Health Center, Occupational Health Clinic.
2. Complete all required training prior to commencement of work with animals related to this document as well as specific laboratory, research standard operating procedures and facility health and safety controls.
3. Adhere to the instructions provided by the laboratory or facility supervisor, and report any potentially hazardous conditions, actions or infractions to the appropriate UMD official.
4. Perform work in a safe manner by utilizing appropriate control measures and procedures to ensure they do not place themselves, coworkers, visitors or support personnel at risk.
5. Use the engineering controls, administrative controls and PPE required by the PI, laboratory supervisor or research standard operating procedure (SOP).
6. Adhere to the instructions provided by the laboratory or facility supervisor regarding the proper disposal of products and material directly related to assigned responsibilities when working with animals.

D. Department of Environmental Safety

1. Support and review the UMD Laboratory Animal Allergy Exposure Control Plan and update as necessary to maintain alignment with actual working conditions involving animals.

2. Provide respirator training and fit-testing in accordance with the UMD Respiratory Protection Program.
3. Provide consultation, exposure monitoring, risk assessment, advisory assistance and information concerning control of animal allergens.

E. The University Health Center

1. Review and update the Animal Handler Risk Assessment Form to collect health status information pertinent to the maintenance of an appropriate animal allergen medical surveillance program.
2. Review the completed Animal Handler Risk Assessment Form forms submitted by faculty, staff and students enrolled in the AHHSP:
 - i. Recommend additional medical testing or surveillance.
 - ii. Provide personal protective equipment recommendations (PPE) or animal work restrictions.
3. Provide occupational health consultation services for faculty, staff and students reporting animal allergies.

Laboratory Environment

When animals are brought into the general laboratory setting, precautions are necessary to prevent sensitization of faculty, staff and students to laboratory animal allergens and to protect individuals who have pre-existing animal allergies or asthma. Laboratory in this section refers to any analytical or teaching facility on the UMD College Park campus or affiliated off campus sites approved by the DLAR Attending Veterinarian for temporary animal care and use.

This section of the plan provides further guidance for containing laboratory animal allergens and preventing sensitization for investigators who must remove animals from an animal facility and work with them in a laboratory setting.

A. Signage

Posters entitled "Safety Concerns in Animal Areas" shall be posted in laboratories that use animals and associated common areas. The posters address allergies, zoonotic diseases and traumatic injuries. A list of common practices that can protect personnel

from animal related hazards is also provided. The appropriate signage required when animals are present in laboratories are available in English and Spanish from the UNIVERSITY Attending Veterinarian.

B. Use of Primary Barrier Equipment

When animals are brought into a laboratory, primary barrier equipment such as biosafety cabinets, filter top cages, ventilated dump stations, etc. shall be used when available to minimize allergen exposure. (See Appendix One for additional primary barrier guidance).

Clean benches do not provide personnel protection and should not be used for animal procedures, handling or cage cleaning.

When possible, animal procedures on an open bench should be avoided. When work on an open bench is unavoidable:

1. The work should be restricted to a designated area to prevent dispersal of animal allergens in the laboratory;
2. Administrative and/or PPE may be assigned to minimize allergen exposure.

C. Administrative Controls

Administrative controls provide the second level of exposure controls and when appropriate assist with exposure mitigation. Administrative controls are usually behavior based and consist of practices intended to reduce or control exposures. See Appendix One for additional administrative control guidance. Appendix Four provides an example of a standard operating procedure to control animal allergen emissions.

D. Personnel Protective Equipment and Laboratory Clothing

PPE such as protective clothing, gloves, eyewear, face shields and respirators may be assigned or recommend when engineering and/or administrative controls cannot sufficiently mitigate allergen exposure. When possible, exposure of bare skin and street clothing to laboratory animals should be avoided. Appendix Two provides additional PPE selection guidance. Both disposable and durable laboratory clothing should not be worn outside approved animal care and use laboratories.

1. Disposable Laboratory Clothing

To afford maximal protection, personnel working with animals in the general laboratory setting should wear disposable laboratory coats or other disposable coverings to prevent contamination of street clothing with animal dander and other allergenic materials.

Disposable garments at the end of their life cycle should be removed, carefully turned inside out, rolled and placed in a sealable plastic bag and disposed in the municipal trash or biological waste, as appropriate

2. Durable Laboratory Clothing

If durable laboratory coats or other clothing are employed, they should be removed prior to exiting the laboratory and laundered frequently. If a laboratory or building does not have designated laboratory laundry equipment, used laboratory clothing can be bagged and transported to the laundry facilities at the Central Animal Research Facility (CARF). (Durable laboratory clothing may not be taken home for laundering.)

E. Laboratory Hygiene

1. Animal carcasses, bedding materials, and other waste must be bagged and removed from the laboratory as soon as practical. (Carcasses are normally bagged and placed in a freezer while awaiting pick up by DES for disposal.)
2. For transport, animals should be placed in an approved and clean container. Unless other particulate release mechanisms are integrated with the container, it should be covered to control release of allergenic materials during transport.
3. Animal transport containers should be cleaned as soon as practical and removed from the laboratory for storage. (Transport containers may not be stored in corridors or other public spaces).
4. All laboratory surfaces involved with animal procedures should be cleaned by an appropriate method to remove dander, hair or other animal-related allergens such as urinary proteins.
5. Hands and forearms should be washed with soap and water after removed of PPE.

Animal Facility Environment

This plan provides guidance for animal facility's program management to minimize occupational exposures to animal allergens. It is intended to be adaptable to accommodate facility design and animal care practices with the intent of containing and/or minimizing animal allergens in the environment. Facility in this section refers to any building or room on the UMD College Park campus or affiliated off campus sites approved by the University Attending Veterinarian for animal care and husbandry.

A. Use of Primary Barrier Equipment

UMD animal facilities utilize various primary barrier equipment i.e. ventilated cage racks and isolators, to help minimize the level of allergens and dander within the environment of the animal facility. These devices are specific to the animal facility's husbandry and veterinary procedures with emphasis on the animal housing.

When animal are handled in a facility, local exhaust ventilation (LEV) such as biosafety cabinets shall be used whenever possible to minimize allergen exposure. (See Appendix One for additional primary barrier guidance and LEV guidance).

Clean benches do not provide personnel protection and should not be used for animal procedures, handling or cage changing.

Whenever possible, animal procedures on an open bench should be avoided. When work on an open bench is unavoidable:

1. The work should be restricted to a designated area to prevent dispersal of animal allergens in the laboratory;
2. Administrative and/or PPE may be assigned to minimize allergen exposure.

B. Administrative Controls

Administrative controls provide the second level of exposure controls and when appropriate assist with exposure mitigation. Administrative controls are usually behavior based and consist of practices intended to reduce or control exposures. See Appendix One for additional administrative control guidance. Appendix Four provides an example of a standard operating procedure to control animal allergen emissions.

C. Personnel Protective Equipment and Vivarium Clothing

PPE such as protective clothing, gloves, eyewear, face-shields and respirators may be assigned or recommended by the University Attending Veterinarian, PI, or DES when engineering and/or administrative controls cannot provide sufficient allergen exposure mitigation. When possible, exposure of bare skin and street clothing to laboratory animals should be avoided. Laboratory clothing that has been in contact with animals or animal products should be removed and placed in a designated location prior to exiting an animal research or housing area. Appendix Two provides additional PPE selection guidance.

1. Disposable Vivarium Clothing

To afford maximal protection, personnel working with animals in the general laboratory setting should wear disposable laboratory coats or other disposable coverings to prevent contamination of street clothing with animal dander and other allergenic materials.

Disposable garments, at the end of their use life, should be removed, carefully turned inside out, rolled and placed in a sealable plastic bag and disposed in the municipal trash or biological waste, as appropriate.

2. Durable Vivarium Clothing

If reusable laboratory coats or other coverings are employed, they should be laundered frequently. If a laboratory or building does not have a designated laboratory laundry capacity, used laboratory clothing can be bagged and transported to the laundry facilities at the Central Animal Research Facility (CARF). (Reusable laboratory clothing may not be taken home for laundering)

D. Laboratory Hygiene

1. Animal carcasses should be bagged and placed in a freezer until removed by DES for disposal.
2. Animal bedding materials, and other waste must be bagged and removed from the facility as soon as practical.
3. For transport, animals should be placed in an approved and clean container. Unless other particulate release mechanisms are integrated with the container, it should be covered to control release of allergenic materials during transport.

4. Animal transport containers should be cleaned as soon as practical and removed from the laboratory for storage. (Transport containers may not be stored in corridors or other public spaces).
5. All laboratory surfaces involved with animal procedures should be cleaned by an appropriate method to remove dander, hair or other animal-related allergens such as urinary proteins.
6. Hands and forearms should be washed with soap and water after removed of PPE and prior to exiting an animal facility.

Medical Evaluation and Management

Faculty, staff and students with pre-existing animal allergies (sensitive workers), asthma, allergies not related to animals (atopic workers) or a family history of these conditions maybe be predisposed to developing laboratory animal allergies or worsening of pre-existing conditions. Pre-employment screening for disclosure of existing allergies, asthma or other respiratory complications assists in determination of appropriate PPE and work practices for sensitive and atopic workers. The Animal Handlers' Health and Safety Program screening consists of a self-administered questionnaire—Animal Handler Risk Assessment Form and review of this document by a licensed medical professional. All information disclosed on the Animal Handler Risk Assessment Form or discovered in the course of medical surveillance is privileged information and may not be shared or made public without the express consent of the employee.

- A. All eligible employees working with animals or animal tissues must be enrolled in the Animal Handlers' Health and Safety Program and submit the Animal Handler Risk Assessment Form to the UMD Health Center, Occupational Health Clinic for evaluation (see AHHSP for eligibility requirements).
- B. All self-identified sensitive or atopic workers may request additional guidance for exposure mitigation or symptom recognition from the UMD Health Center, Occupational Health Clinic.
- C. When advised of the required respirator use (N95ⁱⁱ or PAPR) or when voluntarily using a PAPR, all employees must complete and submit the Respirator Questionnaire

to the UMD Health Center Occupational Health Clinic, enroll in respiratory protection training, and schedule a respirator fit test for N95 or tight fitting negative pressure respirator use.

- D. Employees are encouraged to promptly report symptoms of animal allergies or respiratory complaints to the UMD Health Center, Occupational Health Clinic for medical evaluation and recommendations for additional protective measures.

Supporting Programs

- A. UMD Animal Handlers' Health and Safety Program.
- B. UMD Respiratory Protection Program.

Points of Contact

University Health Center (UHC)
Urgent Care: (301) 314-9144
Occupational Health: (301) 314-8172
<http://www.health.umd.edu/>

Department of Environmental Safety (DES)
Ms. Glynnis Anne Bowman, Senior Industrial Hygienist, Research Safety
(301) 405-2313
<http://www.essr.umd.edu/>

Institutional Animal Care and Use Office (IACUC)
Dr. Pamela Lanford, Director of Animal Research Support and IACUC Manager
(301) 405-0413
<Http://www.umd.edu/IACUC/>

Department of Laboratory Animal Resources (DLAR)
Dr. Doug Powell, University Attending Veterinarian
(301) 405-4920
<http://www.umd.edu/IACUC/carf/htm>

Program Evaluation

DES will periodically review and update this plan when circumstances with animal care and use change to ensure that the program is effectively meeting the goal of occupationally acquired laboratory animal allergy prevention.

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Appendix One: Laboratory Animal Allergen Exposure Control Guidance

Health and safety programs routinely apply an ordered approach for exposure controls placing the greatest emphasis on primary barriers or engineering controls (Tier 1), followed by administrative controls (Tier 2) and personnel protective equipment (Tier 3). Primary barrier equipment and administrative process modification involved with exposure control implementation can substantially reduce the need for personnel protective equipment.

Tier 1 – Primary Barrier or Engineering Controls

Engineering control strategies for animal allergens and other related particulate matter rely largely on local exhaust ventilation equipment (LEV). Appropriate use of LEV can substantially reduce the need for administrative controls and PPE.

Many LEV devices rely on high efficiency particulate air (HEPA) filtration to remove allergenic particles from the worker's breathing zone. A task performed under LEV may be assigned a lower risk than the same task without LEV.

Local exhaust ventilation (LEV) includes biosafety cabinets, ventilated dump stations, ventilated cage racks, down-draft tables, chemical fume hoods and negative pressure HEPA hoods. These units provide exposure protection for the user

Positive pressure horizontal laminar flow clean benches push air from a HEPA filtration unit across the surface of the bench and toward the user. This units produce a sterile work environment for product protection. They do not provide user protection and are not considered LEV for the purposes of exposure control. Biosafety cabinets are the only LEV systems that provide both worker and product protection.

Tier 2 – Administrative Controls

Administrative controls provide the second level of exposure controls and when appropriate assist with exposure mitigation. Administrative controls are usually behavior based and consist of practices intended to reduce or control exposures. A task performed with administrative controls may be assigned a lower risk category than the same task without administrative controls. Examples of administrative controls for laboratory animal allergen exposure include:

- Training:
 - Awareness training for laboratory animal allergens, symptom recognition and application of exposure controls for general understanding (NIOSH bulletin is attached for example of recommended training topics);
 - Research project, process, facility or species specific training to demonstrate competence;
- Access controls—limit the number of people entering animal care and use facilities;
- Use of less allergic species, sexes or age where possible (female and/or juvenile rats produce less allergenic materials than adult male rats)
- Use animal transport containers, designed to contain particulates and allergens during transport, shall be used for transport;
- Designate specific areas for animal care and use (isolation);
- Good animal care hygiene—
 - Limit animal density—especially when housing does not have LEV or filter top controls;
 - Maintain the cleanliness of cages and animal manipulation areas;
 - Decontaminate animal manipulation surfaces after each use;
 - Replace dry sweeping with static cling disposable dust mops;

- Use HEPA vacuums for fine particulate in place of household or shop vacuums;
- Use low dust bedding (corn cob for example) or non-contact absorbent pads where possible;
- Adopt 'wet methods' to control dust emissions as well as to deactivate water soluble allergens;
- Good personal hygiene:
 - Frequent washing of hands and exposed skin;
 - Limit the use of 'street' clothing in animal care and use facilities;
 - Limit wearing scrubs, lab coats or disposable clothing used for animal care and use in areas not approved for animals;
 - Provide access to on site laundry facilities or procedures for transferring laundry to an appropriate cleaning facility.

Tier 3 – Personal Protective Equipment (PPE)

The third tier of exposure control is provided by personnel protective equipment (PPE). PPE should be relied on for exposure control when engineering and/or administrative controls are not available or are insufficient. PPE selection guidance provided in this plan is designed for allergen exposure controls for non-sensitive and non-atopic workers. Sensitive or atopic individuals may require a higher level of PPE and/or activity restrictions.

PPE for animal allergen exposure control may include:

- Disposable clothing;
- Washable scrubs, lab coats (durable clothing);
- Hand protection (nitrile or latexⁱⁱⁱ gloves);
- Safety glasses and/or face shields;
- Respirators.

Table One: Protective Equipment for Allergenic Material Control for Work with Research Animals in Laboratories and Facilities

Activity	Personal Protective Equipment
Enter animal holding room for visual inspection	Durable or disposable laboratory clothing, shoe covers, Respirator optional ¹
Contact with animals or primary enclosures	Durable or disposable laboratory clothing, Shoe covers, Gloves, Respirator optional ¹
Cage cleaning or change out with LEV (no dumping or dust generating activities)	Durable or disposable laboratory clothing, Shoe covers, Gloves, Respirator optional ¹
Cage cleaning or change out without LEV or administrative controls (no dumping or dust generating activities)	Durable or disposable laboratory clothing, Shoe covers, Gloves, Respirator optional ¹
Cage dumping with LEV and/or administrative controls	Durable or disposable laboratory clothing, Shoe covers, Gloves, Respirator optional ¹
Cage dumping without LEV and/or administrative controls	Durable or disposable laboratory clothing, Shoe covers, Gloves, Respirator—N95 or PAPR
Cleaning floor pens or other dust generating activities—animal bedding/gross debris removal (guinea pigs, rabbits, poultry, sheep, swine)	Durable or disposable laboratory clothing, Shoe covers, Gloves, Respirator—N95 or PAPR
Cleaning flight cages	Durable or disposable laboratory clothing, Shoe covers, Gloves, Respirator—N95 or PAPR

¹ Respiratory protection (N95 or PAPR) optional unless medically required or otherwise specified. Alternate PPE may be required to maintain sterile environment or provide greater protection (ABSL2 and ABSL3). See the AHHSP for additional requirements.

Principal investigators and/or vivarium managers should review all animal care and use practices with available engineering and administrative controls and personal protective equipment guidance from the University Attending Veterinarian and incorporate these safety systems in research standard operating procedures and research project specific training. The DES Research Safety and Biosafety offices will provide hazard assessment assistance when requested.

Summary

When available, LEV equipment should be used to the fullest extent possible for point source exposure control. Where feasible DES strongly recommends the acquisition of ventilated cage racks for rat and mice housing as well as ventilated dumping stations or biosafety cabinets for handling rat, mice and other small animal cage dumping and/or exchange.

When engineering equipment is not feasible, the tasks and vivaria involved should be reviewed for appropriate administrative controls. When administrative controls are appropriate, they should be available as written documents with detailed instructions. Engineering and/or administrative controls may sufficiently mitigate animal allergen and other associated particulate exposures such that respirator use is unnecessary.

PI's, supervisors and facility managers should carefully review the necessity for PPE and determine an appropriate PPE selection that will compliment engineering and administrative controls. While PPE such as respirators can dramatically reduce small particulate exposures, wearing respirators can increase physical demand on the worker and should be required only when engineering and/or administrative controls cannot sufficiently protect the worker's breathing zone exposures. See Appendix Two for further respirator guidance.

Appendix Two: Respirator Selection and Use Guidance

All respirator use including loose-fitting power air purifying respirators (PAPR) and filtering facepiece respirators (N95, N99 and N100 masks) is governed by the Department of Environmental Safety Respirator Protection Plan (RPP). PAPRs and filtering facepiece respirators are air purifying devices—when properly donned and used in the appropriate conditions, air is forced through a filtration medium thereby reducing particulate exposures. The RPP is managed for compliance with the State of Maryland Occupational Safety and Health (MOSH) respiratory protection regulations.

Respirator usage is defined as **required** (mandatory) or **voluntary** (optional). Required or voluntary respirator use should be determined by task and exposure oriented hazard assessments.

Required Respirator Use

When respirator use is required, the employee may not choose to opt out of wearing the respirator. Therefore, respirator use should be required only when engineering controls and/or administrative controls cannot mitigate the exposure.

If a Principal investigator or animal care facility requires respirator use, the following are mandatory:

1. Annual respirator training;
2. Annual medical evaluation (complete and submit the respirator questionnaire to the University Health Center);
3. Annual fit-testing for N95 or tight-fitting PAPR (not required for loose fitting PAPR).

Required respirator use is usually based on exposure to a specific occupational exposure limit enforced by MOSH as a permissible exposure limit (PEL) or adopted by an employer in the case of consensus values published by the ACGIH (TLV) or NIOSH (REL)^{iv} for example. There are no established exposure limits for animal allergenic

materials. Respirator selection and requirements to use respiratory protection should be carefully reviewed and the following taken into consideration:

1. Availability of engineering or administrative controls for exposure mitigation;
2. Animal species and gender;
3. Proximity to animals and/or animal products.
4. Specific task(s)—especially those likely to generate dust;
5. Duration of the task(s);
6. Environmental conditions—airflow patterns, room air changes, and temperature.

DES will provide specific respirator selection guidance and/or PPE review as requested.

Surgical masks are not respirators and are not designed to provide the wearer with protection from very small particles. Surgical masks are also not subject to NIOSH performance and testing requirements and are not addressed by the Respiratory Protection Program. Animal allergen particulate sizes are difficult to broadly characterize and may be small enough to pass through or around surgical masks and be inhaled. If no respirator use is required or recommended, surgical masks can be worn at the user's discretion. However, if respirator use is required for a specific task, work area or research project, surgical masks may not be used in place of assigned respiratory protection.

When it is necessary to maintain a human vectored pathogen free environment and no respiratory protection is required, surgical masks are appropriate. Well fitted N95, N99 and N100 respirators provide both personal respiratory protection and environmental protection as they filter both inhaled and exhaled breath. Loose fitting PAPRS filter only the air available for inhalation and therefore do not provide environmental protection.

Voluntary Respirator Use

The RPP covers employees who voluntarily use respiratory equipment. Voluntary use is defined as an employee who wishes to wear a respirator even though it is not required by the employer or regulation.

The RPP includes the following provisions for voluntary use of disposable filtering face piece respirators (N95 for example):

1. Provide the employee a copy of the “Voluntary Use of Respirator Fact Sheet” (Appendix Three).
2. Supervisors are encouraged to document employee receipt of the fact sheet.
3. Medical clearance is not required.
4. Respirator fit-tests are not required.

If the PI or facility manager permits voluntary PAPR respirator use, the following apply:

1. Supervisor must review the written UM Respiratory Protection Program located on the Department of Environmental Safety website.
2. The employee must receive medical clearance to use the respirator (submit the Respirator Questionnaire to UMD Health Center, Occupational Health Clinic for evaluation).
3. The employee must receive initial PAPR proficiency training from the Department of Environmental Safety.
4. Respirator fit-tests are not required.

The Respiratory Protection Program (RPP) defines respirator use as required or voluntary. If a PI or vivarium manager determines required respirator use is necessary, it

must be managed according to the RPP. The RPP mandates annual medical surveillance, training for N95 and loose fitting PAPR. N95 use also requires annual fit-testing.

When respirator use is not required, employees may elect to wear N95 respirators.

Voluntary use in accordance with the RPP does not require annual medical surveillance and fit-testing.

DES strongly recommends that all animal handlers attend Respiratory Protection and Respirator Training for Animal Handlers.

The RPP manual is available electronically at:

<http://www.essr.umd.edu/os/respirator/manual/resp.pdf>

Appendix Three: Voluntary Respirator Use Fact Sheet^v

Respirators are an effective method of protection against designated hazards when properly selected and worn. Respirator use is encouraged, even when exposures are below the exposure limit, to provide an additional level of comfort and protection for workers. However, if a respirator is used improperly or not kept clean, the respirator itself can become a hazard to the worker. Sometimes, workers may wear respirators to avoid exposures to hazards, even if the amount of hazardous substance does not exceed the limits set by OSHA standards. If your employer provides respirators for your voluntary use, or if you provide your own respirator, you need to take certain precautions to be sure that the respirator itself does not present a hazard.

You should do the following:

1. Read and heed all instructions provided by the manufacturer on use, maintenance, cleaning and care, and warnings regarding the respirators limitations.
2. Choose respirators certified for use to protect against the contaminant of concern. NIOSH, the National Institute for Occupational Safety and Health of the U.S. Department of Health and Human Services, certifies respirators. A label or statement of certification should appear on the respirator or respirator packaging. It will tell you what the respirator is designed for and how much it will protect you.
3. Do not wear your respirator into atmospheres containing contaminants for which your respirator is not designed to protect against. For example, a respirator designed to filter dust particles will not protect you against gases, vapors, or very small solid particles of fumes or smoke.
4. Keep track of your respirator so that you do not mistakenly use someone else's respirator.

Appendix Four: Administrative Control Standard Operating Procedure Example

Mice Cage-changing in ABSL2 rooms^{vi}

Purpose: to explain the cage changing system and minimize the exposure to animal allergens

Procedures

Changing mice to clean cage

1. Mice are changed once a week for conventional cages and at least once every two weeks for the IVC cages
2. Transfer mice one at a time from the dirty cage to the clean one.

ONLY change ONE mouse cage at a time to avoid mistakes.

Cleaning and disinfecting dirty cages

1. Dirty cage bedding must be wetted down thoroughly before it is dumped. Remove the lid, spray with disinfectant solution, put the lid on and let it sit for at least 5 min.
2. Dump dirty cage bedding into the biological waste container
3. Spray the cage with disinfectant solution and let it sit for 15 min.
4. Rinse the cage with water and bring into the cage washer room

NEVER REMOVE EQUIPMENT FROM THE ANIMAL ROOMS WITHOUT PREVIOUS DESINFECTION

Disposable Laboratory Clothing

1. Personnel working with animals must wear disposable PPE to prevent contamination of clothing with animal dander and other animal associated allergens.

“Avoid wearing street clothes while working with animals. The use of scrubs under disposable PPE is beneficial to prevent contamination of clothing with animal dander and other animal associated allergens.”

2. Disposable PPE must be removed before exiting the animal room.
3. Disposable PPE should be removed, carefully turned inside out, rolled and placed in the biological waste container.

Hands and forearms should be washed with soap and water immediately after exiting the animal room.

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- ⁱ See AHHSP Eligibility section for specific animal care and use requirements for AHHSP enrollment.
- ⁱⁱ Guidance and requirements for N95 respirators also applies for N99 and N100 filtering facepiece respirators.
- ⁱⁱⁱ Latex sensitization can also result in allergenic responses. If latex gloves are available, they should be clearly labeled and the facility or laboratory should also provide an alternate glove material i.e. nitrile for individual's with latex allergies.
- ^{iv} ACGIH: American Congress of Governmental Industrial Hygienists;
TLV: Threshold Limit Value.
NIOSH: National Institute of Occupational Safety and Health;
REL: Reliable Exposure Level.
- ^v Information for Employees Using Respirators When Not Required Under the Standard (29 CFR 1910.134 Appendix D (Mandatory))
- ^{vi} Prepared by Andrea Ferrero-Perez on 5/28/14.