



Title	Personal Protective Equipment for Animal Care and Use
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I. BACKGROUND

Personal protective equipment (PPE) is a necessary part of vivarium safety in addition to engineering controls and good work practices. The proper use of appropriate PPE will significantly reduce the risk of exposure to potentially hazardous materials, helps to prevent cross contamination, and reduce the risk of pathogens.

The [Environmental Health & Safety Personal Protective Equipment Program Guidelines](#) (Program Guidelines, 2021) which are based on OSHA and MIOSHA requirements take precedence over this policy. Please refer to the hazard assessment for your area to determine if any additional PPE are required to protect personnel from additional hazards.

Examples of additional hazards that may be encountered in the research setting include the following: chemicals, toxins, infectious agents, or radioactive materials purposefully administered to animals in an approved animal use protocol; physical, chemical or noise hazards present in cage wash facilities or diagnostic laboratories; and hazards associated with field research or wild caught animals. PPE required for use in these settings must be determined after consultation with the [Office of Laboratory and Field Safety \(OLFS\)](#) at 989-774-4474 for additional information.

II. PURPOSE

This policy defines minimum standards for PPE when working with animals for teaching, research or outreach purposes at Central Michigan University for the purpose of (1) preventing or controlling personnel exposure to zoonotic organisms and allergens inherent when working with animals, (2) protection of animals from the introduction of disease and infectious agents, and (3) meeting the requirements of federal (e.g., [Occupational Safety and Health Regulations](#), 29 CFR 1910, Subpart I) and state (e.g., [MIOSHA Part 433 PPE](#), 2018) regulations, CMU policy (e.g., [CMU-Animal Research Occupational Health and Safety Program](#), 2022), and accepted standard practices (e.g., [Biosafety in Microbiological and Biomedical Laboratories](#), 2020).

III. DEFINITIONS

Animal facility/Animal use area – Any area used for animal housing, procedures, or support (e.g., cage wash, procedure room, surgery, necropsy, and testing rooms).

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

Surgical face mask – covering for the nose and mouth or face that supplies splash and gross

debris protection (must be water resistant) but is not intended to provide respiratory filtration (see OLFS approved respirator).

Personal protective equipment – protective coverings (e.g., scrubs, lab coat, jumpsuit, gloves, hair and shoe covers, safety glasses, goggles, masks, respirators, etc.) designed to protect the wearer's body from exposure to infectious agents or allergens associated with animals.

OLFS approved respirator – NIOSH certified N-95 or higher particulate respirator or powered air purifying respirator (PAPR). Prior testing and instruction for use is provided by OLFS.

Sealed eye protection – goggles with closed top, side, and bottom and indirect vents that fit snug against the face forming a seal around the eyes, thus preventing liquids from splashing, or dripping into the eyes. Goggles must meet standards described in 29 CFR 1910.133 Eye and Face Protection and ANSI Z87.1 - 2020.

Bio-exclusion – processes preventing the introduction of new diseases into a population from an outside source. Bio-exclusion can be achieved through facility design and procedures including requirements on PPE.

BSL-2 – Biosafety Level 2 is suitable for work with agents associated with human disease and pose moderate hazards to personnel and the environment. Building on BSL-1 practices, procedure, containment equipment, and facility requirements, BSL-2 requires specific training in handling pathogenic agents, restricted access to the laboratory, and that procedures producing infectious aerosols or splashes need to be conducted in BSC or other physical containment equipment ([Biosafety in Microbiological and Biomedical Laboratories](#), 2020).

ABSL-2 – Animal Biosafety Level 2 is suitable for work involving laboratory animals infected with agents associated with human disease and posing a moderate hazard to personnel and the environment. Building on ABSL-1 practices, procedure, containment equipment, and facility requirements, ABSL-2 requires BSC or other physical containment equipment when procedures involve the manipulation of infectious materials or where aerosols or splashes may be created, and appropriate PPE is worn to reduce exposure to infectious agents, animals, and contaminated equipment ([Biosafety in Microbiological and Biomedical Laboratories](#), 2020).

IV. POLICY

Required PPE should be donned and properly worn when entering the animal facility and when handling animals, animal body substances or soiled bedding to reduce exposure to allergens and zoonotic agents. PPE must be changed when soiled or contaminated. When exiting the animal facility, PPE must be removed in a manner that minimizes personal contamination and transfer of infectious materials outside of the areas where infectious materials and/or animals are housed or manipulated. All personnel should wash their hands thoroughly prior to or upon exiting the animal facility.

All individuals entering animal research facilities must be aware that exposure to infectious and/or hazardous materials can occur through cuts/punctures with contaminated sharp objects, blood, feces, urine or other potentially infectious materials entering a break in the skin, splashes to the eyes, nose or mouth. Scratches from mice or rats may also trigger an allergic response.

If individuals have an open cut, wound or skin abrasion, the affected area should be covered with an adhesive bandage or other type of waterproof dressing. If the affected area is on the hands, double gloves should be worn to prevent transmission through breaks in the skin before entering the space. Any exposure incidents or injuries should be reported immediately to your supervisor. To report incidents or injuries and seek medical attention, follow the process located at: [RMEHS - Accidental Personal Injury Report](#).

A. Responsibilities

1. **Individuals working with animals:** It is the responsibility of all individuals that work with animals to complete required trainings and to properly wear required PPE.
2. **Principal Investigators:** It is the responsibility of the Principal Investigator to ensure that anyone under their supervision is trained in the appropriate use of PPE when working with animals or tissues in research and that their staff appropriately utilize the required PPE.
3. **Vivarium management team:**
 - a. It is the responsibility of the management of each animal use area to ensure that the signage (see example on the final page of this document) detailing required PPE is clearly posted and that all users are monitored for appropriate PPE use.
 - b. It is the responsibility of the management of each animal use area to report repeated deviations from this policy to OLFS.
4. **Office of Laboratory Field and Safety:**
 - a. It is the responsibility of OLFS to periodically reassess potential risks within the animal facility that could be mitigated by use of PPE and amend PPE requirements as needed.
 - b. It is the responsibility of OLFS to evaluate potential risks and make recommendations for individuals upon request, e.g., personnel with compromised immune systems, allergies, or who are pregnant may need additional protections as required by a physician or occupational health specialist.
 - c. OLFS will work with individuals and/or PIs to ensure the compliance with this policy.
 - d. OLFS will work with IACUC leadership and Office of Research Compliance as needed to address continued noncompliance with this policy.

B. Fundamental Requirements

1. Long pants or equivalent leg covering (the area of skin between the pants and shoe should not be exposed) must be worn when occupying or entering a vivarium.
2. Shoes need to completely cover the feet. Open-weave, open toe, open-heel, sandals, or shoes with holes are not permitted.
3. Long hair should be restrained so that hair cannot contact hands, animals, specimens, containers, or equipment.

C. Facility and Task Specific PPE

A variety of animal species are housed and handled on campus facilities, and there are significant differences in the design and operation between animal facilities (Health Professions, South Research Lab, Bioscience, and Rowe Hall). Additional PPE (e.g., hair cover, shoe-covers, face

mask, eye protection, etc.) may be required for specific applications and animal use areas. Individuals entering vivaria must always follow PPE requirements posted at the entrance of animal use areas and animal rooms, and consult with the management of each animal use area.

Tasks Buildings and Animals	Entry to animal rooms	Direct contact with animals	Handling or processing animal body substances or unfixed tissues	Husbandry cage washing procedures (contact with animal caging, bedding, or equipment and splash hazards)
<u>HP and SRL</u> – Rodents (bio-exclusion/ABSL-1/BSL-1)	Safety glasses with side shields, shoe covers, clean lab coats or disposable outer-covering with long sleeves, hair cover, surgical face mask, disposable gloves (e.g., nitrile, neoprene, or latex)		Same as items listed for entry to animal rooms plus upgrade to sealed eye protection	Same as items listed for handling or processing animal body substances. Individuals performing husbandry activities and dirty cage wash changing/dumping cages w/out engineering controls (e.g., dump station) must also wear an OLFS approved respirator.
<u>Biosciences</u> – Rodents (ABSL-1/BSL-1)	Safety glasses with side shields	Same as item listed for entry to animal rooms plus clean lab coat or disposable outer-covering with long sleeves, disposable gloves (e.g., nitrile, neoprene, or latex)	Same as items listed for direct contact plus upgrade to sealed eye protection	Same as items listed for handling or processing animal body substances. Those involved in cage washing, changing/dumping cages w/out engineering controls must also properly use an OLFS approved respirator
<u>Biosciences</u> – Aquatic Amphibians, Reptiles, and Fish (ABSL-1/BSL-1)	Safety glasses with side shields	Same as item listed for entry to animal rooms plus disposable gloves (e.g., nitrile, neoprene, or latex)	Same as items listed for direct contact plus upgrade to sealed eye protection	Same as for handling or processing animal body substances.
<u>Biosciences</u> – Terrestrial Amphibians and Reptiles (ABSL-1/BSL-1)	Safety glasses with side shields	Same as item listed for entry to animal rooms plus disposable gloves (e.g., nitrile, neoprene, or latex)	Same as items listed for direct contact plus upgrade to sealed eye protection	Same as for handling or processing animal body substances.

Rowe – Birds and Rodents (ABSL-1/BSL-1)	Safety glasses with side shields, clean lab coats or disposable outer- covering with long sleeves, surgical face mask	Same as those listed for entry to animal rooms plus disposable gloves (e.g., nitrile, neoprene, or latex)	Same as items listed for direct contact plus upgrade to sealed eye protection	Same as those listed for handling or processing animal body substances. Those involved in cage washing, changing/dumping cages w/out engineering controls must also properly use an OLFS approved respirator
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D. PPE Signage

PPE signage is used to remind individuals of the PPE requirements for specific areas. These standardized signs may be posted at the entrance of vivaria or areas where PPE is required to be donned. In addition, signs may be posted in areas where there are additional PPE requirements (e.g., cage wash, isolation or quarantine rooms).

Below is an example of the standardized PPE signage in use for the CMU animal care and use program.



ARE YOU WEARING YOUR...
PERSONAL PROTECTIVE EQUIPMENT?

- Safety glasses with side shields
- Long pants
- Close-toed and close-heeled shoes
- Disposable shoe covers
- Lab coat or disposable outer-covering with long sleeves
- Hair cover
- Surgical face mask
- Disposable gloves (nitrile, neoprene, latex)

If not, turn around!

Remember to:

- Change or disinfect shoe covers upon entering and exiting
- Change gloves and wash hands between rooms

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