I. PURPOSE

The purpose of this standard operating procedure is to provide general guidance on the objective assessment of risks associated with the care and use of animals at Central Michigan University. A complete risk assessment should take into consideration all hazards that a worker might be exposed to including chemical hazards, biohazards, radiation and radioisotopes as well as hazards associated with animal contact (1,2,3,5). Exposure to allergens is the most common risk associated with animal contact (6,8). The main source of allergenic proteins is the urine of rats and mice, however allergens may also be found in dander, hair, saliva and serum (9,10).

Risk factors for developing allergic reactions include an allergic reaction to another animal species, the intensity of exposure, the duration of exposure and the route of exposure (6,7). Duration of exposure may be a less significant factor than intensity or a personal history of allergy (atopy) although personal history alone is not a reliable predictor (6,7,9). The most effective route of exposure (for the development of allergy or asthma) is respiratory (6). Since animal allergens including proteins in urine can become aerosolized and remain airborne for extended periods of time, the use of engineering controls, the use of personal protective equipment (PPE), and using cage-changing stations and ventilated or barrier top cages can significantly reduce risk of exposure (1,4,5,8).

Most animal care personnel will be exposed to moderate or high level of risk from allergens regardless of full or part time status of their position and as such should submit an Initial Medical Questionnaire for Individuals Who Work with Animals (IMQ). The exposure risks of research and instructional personnel including volunteers and students in classroom and directed research settings are highly variable and as such a detailed risk assessment should take place.

II. Definitions:

a. **Animal:** Any live or dead vertebrate animal used or intended for use in research, research training, teaching, experimentation, demonstration, or biological testing or for related purposes.

b. **Animal Contact:** any contact with animals based on hazard identification and relative risk assessment. Animal contact may be direct or indirect. Indirect contact is contact with animal products or items that have been in contact with animals. Animal products include: unpreserved tissues, blood, excreta, body fluids or discharges, hair, dander etc. Items that could be contaminated include sharpen, pens and cages, bedding, clothing, gloves etc. (11,12).

c. **Animal Facility:** Any and all buildings, rooms, areas, or enclosures, including satellite facilities, used for animal confinement, maintenance, breeding, or experiments inclusive of surgical manipulation. A satellite facility is any containment outside of a core facility or centrally designated or managed area in which animals are housed for more than 12 hours.

d. **Animal Handler:** anyone who has animal contact related to classroom, teaching, research or outreach activities at CMU.

e. **Risk Assessment:** The process by which risks associated with working with animals (such as hazardous biological, chemical, or physical agents; allergens; or zoonoses) are identified.
f. **Risk Management:** The process by which identified risks are managed through such actions as education, training, personal protective equipment, zoonosis surveillance, or immunization.

g. **Risk Training and Education:** A program of training and education about areas of risk when working with animals in general or with specific species or conducting specific experiments.

h. **Supervisors:** Department chairs, faculty, and other CMU employees or affiliates who have oversight of University employees, students, or other individuals and who are involved with animals; those individuals who are not CMU employees but are affiliated through courtesy or adjunct appointments may serve as supervisors.

III. **Procedures:**

1. **Risk assessment must be completed prior to initiating work with animals.** If an individual elects to participate in medical surveillance by submitting an Initial Medical Questionnaire (IMQ) to the Occupational Health Physician (OHP), they must complete all medical appointments and address any recommended medical restrictions or respirator fit testing (if applicable) prior to initiating work with animals.

2. To facilitate risk assessment, supervisors will direct each new animal handler to contact the **Office of Research Compliance (989-774-1152)** to obtain the **risk self-assessment document and animal allergen information sheet** and will provide information regarding hazards specific to their laboratory and the level of risk associated with the tasks the individual will be performing.

3. **Supervisors are prohibited from directing the decision of an animal handler regarding completion of their risk assessment or the decision to submit an IMQ.** Questions are to be directed to the **Office of Laboratory and Field Safety (989-774-4189)** or the **Office of Research Compliance (989-774-1152).**

4. Following the instructions provided and using the tables in the self-assessment document and any protocol specific considerations, each individual involved in animal care, research or classroom settings will assess their risk. **Exceptions may apply to centrally scheduled courses.**

5. The tables in the self-assessment document will guide each individual to consider their exposure level and individual susceptibility to animal allergens and other hazards based on their medical history. Individuals with allergies, asthma or other pre-existing conditions should be considered as moderate or high risk regardless of the level of exposure and should submit an Initial Medical Questionnaire (6,7,9).

6. If an individual is uncertain about personal medical risks they should consult a medical professional for assistance in making this determination.

7. CMU Students should consult Student Disability Services to determine if accommodations are available prior to submitting an Initial Medical Questionnaire.

8. To conduct a complete assessment, each individual will enter an occupational exposure score and their personal susceptibility.
   - The resulting scores will generate a risk assessment level of low, moderate or high.
   - The form will generate a recommendation for medical surveillance based on the risk assessment score,
9. If an individual is determined to be at high risk, it is strongly recommended that they obtain an Initial Medical Questionnaire from the Office of Research Compliance (774-1152) and submit it to the CMU consulting Occupational Health Physician at the fax number provided on the form.

10. If an individual is determined to have low or moderate risks associated with their animal contact, they are advised that they may still choose to submit an IMQ.

11. Individuals may choose to opt out of medical surveillance at a later date, particularly if their risks change to a lower level, by obtaining and submitting a signed declination statement (opt out form) to the Office of Research Compliance or by redoing their risk assessment and opting not to submit an IMQ.

12. Under CMU Policy 13-6 sections 8-9, CMU reserves the right to require participation in preventative medicine programs. An individual who was previously enrolled in medical surveillance and was approved with restrictions by the Occupational Health Physician (OHP), may not opt out of medical surveillance without the OHP removing those restrictions.

13. Individuals are advised that they are required to report any work related illness or injury including the onset or worsening of symptoms of allergy associated with exposure to animals. If they develop symptoms of allergy associated with animal care and use they should conduct a new risk self-assessment and submit an IMQ.

14. Risk level must be re-assessed after any change in tasks that results in a change in the duration or intensity of exposure.

15. Risk assessment must be reviewed periodically. At a minimum any time exposure level or susceptibility changes it should be re-assessed.

16. Any questions regarding risk assessment procedures or submitting risk assessment or IMQ forms are to be directed to the Office of Laboratory and Field Safety or the Office of Research Compliance.

IV. References:

1. Occupational Health and Safety in the Care and Use of Research Animals (NAS, 1997)
3. Institutional Animal Care and Use Committee Guidebook (OLAW 2008)
4. The National Institutes of Health Laboratory Animal Allergy Prevention Program (2014)
5. Preventing Asthma in Animal Handlers (CDC/NIOSH, 1998)
6. Allergies to Laboratory Animals A Significant Health Risk (2014)
7. Prevention of Laboratory Animal Allergy (Occupational Medicine, 2003)
9. Exposure of Laboratory Animal Care Workers to Airborne Mouse and Rat Allergens (JAALAS, 2012)
10. Influence of 5 Different Caging Types and the Use of Cage-Changing Stations on Mouse Allergen Exposure (JAALAS, 2014)
11. Occupational Health Programs for Animal Workers, University of Michigan, Michigan State University, University of Massachusetts, Vanderbilt University and National Institutes of Health.
V. Related Documents:

Health and Risk Assessment for Animal Care and Use Personnel
Initial Medical Questionnaire for Individuals Who Work with Animals
Laboratory Animal Allergens Information
Medical Surveillance Declination Statement