Animal Allergen Exposure Reduction Program Goals

1) Prevent WSU Animal Research Personnel From;
   a) Developing animal allergy symptoms
   b) Exacerbating animal allergy symptoms
   c) Developing or exacerbating asthma or other medical conditions

How Exposures Occur

1) Exposure to Animal Proteins By Way Of;
   a) Inhalation of air borne animal allergens
   b) Animal bites and scratches
   c) Injuries from sharps used on animals
   d) Skin contact with animals, animals’ excretions, or animals’ waste
   e) Animal waste or excretions splashed into eyes, nose, or mouth

2) Human Immune System Response;
   a) Exposure to animal proteins can trigger the human immune system to release histamines and Immunoglobulin E (IgE) into blood the system.
   b) The release of histamines and IgE antibodies into blood system results in an inflammatory responses in various organ tissues, such as, lungs, eyes, or skin.

Individual Risk Factors

1) Exposure to Animal Allergens;
   a) Frequency of exposure (e.g., number of hours/day)
   b) Intensity of exposure (e.g., change animals' bedding, etc..)
   c) Conditions (e.g., using an N95 mask, gloves, etc…)
   d) Environmental Conditions (e.g., animal room ventilation, etc…)
   e) Lifestyle (e.g., smoking, etc…)
2) Medical History & Genetic Component;
   a) Pre-existing personal history of allergies or respiratory disease
   b) Family history of allergic conditions

Animal Allergens Common Sources
- Mice (most common in research)
- Rats (most common in research)
- Rabbits
- Gerbils
- Guinea pigs
- Cats
- Dogs
- Birds

Animal Allergy Symptoms (symptoms listed are not exhaustive)
- Skin rash
- Eye Irritation
- Throat Irritation
- Nasal Drainage
- Sneezing
- Coughing
- Chest Tightness
- Wheezing
- Difficulty Breathing
- Facial Swelling
**Allergic Reactions Range: Mild → Severe**

1) Early Symptoms: red irritated eyes, watery eyes, hives, rash, sneezing, “runny” nose, throat irritation, facial swelling.

2) Later Symptoms: coughing, wheezing, chest tightness, difficulty breathing, and shortness of breath. Shortness of breath can result in chronic disease, e.g., Asthma.

3) Asthma Triggered by Allergic Reactions: can lead to asthmatic symptoms that can result in a medical condition known as Status Asthmaticus: an acute exacerbation of asthma. Status Asthmaticus can deteriorate into anaphylactic shock. Anaphylaxis requires emergency treatment.

4) Onset of Allergy Symptoms: can occur after a few minutes of exposure or be delayed up to 8 hours after exposure and can result in a severe systemic allergic reaction that will require emergency treatment.

5) Generally Allergies to Animals: develop within 3 years of exposure; however allergy symptoms can develop much later than 3 years of exposure.

**The Most Important Element of Protection Are Engineering Controls**

1) Heating, Ventilation, & Air Conditioning Systems;
   a) Ventilation: proper air exchange & air flow
   b) Temperature & Humidity: proper levels
   c) Animal Room Air Flow: Negative pressure to corridors

2) Employ Safety Equipment and Materials;
   a) Filter Top Cages & Ventilated Cage Racks, Corncob Bedding
   b) HEPA Filtered Dumping Stations, Bio-safety Cabinets
   c) Hand-washing Sinks and Shower Facilities
   d) Eye-wash Stations and Emergency Showers
   e) Laundry Machines, cleaning equipment, and housekeeping supply
Administrative Controls - Follow Safe Practice Guidelines

1) Adhere to Safety Standards
   - Bio-safety Level
   - Standard Operating Procedures (SOP)
   - Personal Hygiene
   - PPE Use & Disposal
   - Animal Allergy Surveillance Program

2) Avoid Work Hazards
   - Use Proper Technique when; restraining, transporting, or caring for animals.
   - Timely service micro-isolators, Bio-bubbles, cages, and feeding systems.
   - Adhere to work assignments and avoid working alone when possible.

Personal Protective Equipment (PPE) Significantly Reduces Allergen Exposure

- N95 Mask*. *N95 Mask: A properly fitted N95 respirator (mask) filters out at least 95% of airborne particles, including sub-micrometer particles.
- Gloves (nitrile)
- Lab Coat, Scrubs (long sleeves)
- Eye protection
- Hair Bonnets
- Protective Sleeves
- Shoe covers
Medical Evaluation & Treatment
1) One may visit OHS-4K clinic for any medical concern, e.g.,
   o New onset allergy symptoms
   o Worsening allergy symptoms
   o Worsening asthmatic symptoms
   o An initial N95 Mask fit test or an annual N95 Mask Fit Test
   o Medical evaluation of animal allergy symptoms
   o Bites, scratches, or any injury resulting from handling animals
2) Notify WSU Occupational Health Specialist
   o 313-577-5917 re: medical referrals, questions, or concerns

How to Manage Acute Exposures
1) Animal Bite, Scratch, or Sharp Injury
   o Apply pressure to bleed out the wound, wash with soap and water for 5 minutes, then cover with a bandage.
2) Splash to Eyes
   o Irrigate the eye(s) for 15 minutes at an eyewash station or sink.
3) After Initial First Aid Treatment of Acute Injury
   o Promptly proceed to UHC- Occupational Health Services-4K clinic,
   o Monday - Friday, 6:30 am to 5:00 pm. After hours, proceed to Detroit Receiving Hospital Emergency Department, 4201 St. Antoine. Inform your Supervisor or PI, and the Occupational Health Specialist of injuries.
4) Emergency Transportation
   o Call WSU Public Safety: 313-577-2222

To document this training, complete and submit the quiz at this link: **Animal Allergy Exposure Reduction Quiz**