Animal Worker Protection Program

Laboratory Animal Resources Center (LARC)

in cooperation with

Environmental Health, Safety and Risk Management (EHSRM)

&

Occupational Health Program (OHP)
NIH PHS policy requires an AWPP for all personnel in contact with lab animals
The AWPP is part of the IACUC required training for animal users at UTSA.

The IACUC requires all training to be completed, including the AWPP, to gain access to LARC animal facilities.

The “Training Checklist” provides a list of IACUC requirements and links for training.
Animal Worker Protection Program (AWPP)

This presentation is designed to promote a safe work environment by:

- Educating you on the health risks associated with working with or around research animals
- Providing practices to minimize your risks
- Information on how to enroll in the UTSA OHP program
Occupational Health Program (OHP)

- Enrollment is **mandatory** for all animal users
- Provides professional medical information & assessment to promote a healthy work environment
- The AWPP presentation **does not** fulfill your requirement for enrollment into the OHP
- OHP information and forms can be found at: [http://www.utsa.edu/Safety/#/workplace/occupational](http://www.utsa.edu/Safety/#/workplace/occupational)
Environmental Health Safety and Risk Management (EHSRM)

- This handout does not replace any lab safety training requirements of EHSRM for UTSA
- For specific information and training on lab safety, contact EHSRM x-5250
  [www.utsa.edu/safety](http://www.utsa.edu/safety)
Completing the AWPP?

- Review the information in this presentation
- Complete and submit the “Acknowledgment Form” to: LARC main office (PNB 2.104) via fax to x-6087 or email larc@utsa.edu
- The link to download the form is located below the AWPP presentation link on the LARC training page
Animal Worker Protection Program (AWPP)

Let’s get started.....
Risks…

- If you work with or around research animals, tissues or waste
- Most common risk: Allergies
- Zoonosis: Disease transmission from animal to human (can be serious)
- AWPP helps you minimize exposure by
  - Assessing your risks
  - Providing you training and information
  - Providing you with PPE
AWPP Risk Assessment is for All Personal with Animal Contact

Based on

- Animal related hazards
- Hazards related to facility/lab operation
**Risk Categories**

Based on type/frequency of direct/indirect contact w/ live animal, tissues or waste

<table>
<thead>
<tr>
<th>Cat</th>
<th>Contact</th>
<th>Example</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>No direct/one time entry</td>
<td>Vendors, one time trainee</td>
</tr>
<tr>
<td>B</td>
<td>Reg indirect</td>
<td>Facilities, IACUC member, EHSRM, Police, Custodial</td>
</tr>
<tr>
<td>C</td>
<td>Freq direct</td>
<td>LARC, Res staff, Facilities that work with HVAC</td>
</tr>
</tbody>
</table>
Consultation with UTSA occupational health physician/staff may be requested based upon

- Health history/status
- Species involved
- Type of research
Health Risk Topics

- Animal Allergens
- Latex Allergies
- Sharps/needles
- Zoonosis
- Bites/Scratches
- Protocol Related Hazards
Animal Allergens

Allergies are by far the most important occupational health issue

- Prevalence of allergic symptoms in regularly exposed personnel ranges from 10% to 40%
- Estimated 10% of laboratory animal workers will develop occupation-related asthma
## Reactions to Allergens

<table>
<thead>
<tr>
<th>Disorder</th>
<th>Symptoms</th>
</tr>
</thead>
<tbody>
<tr>
<td>Urticaria</td>
<td>Redness, itchy skin, welts, hives</td>
</tr>
<tr>
<td>Allergic Conjunctivitis</td>
<td>Sneezing, itchiness, clear nasal drainage, nasal congestion</td>
</tr>
<tr>
<td>Allergic Rhinitis</td>
<td>Sneezing, itchiness, clear nasal drainage, nasal congestion</td>
</tr>
<tr>
<td>Asthma</td>
<td>Cough, wheezing, chest tightness, shortness of breath</td>
</tr>
<tr>
<td>Anaphylaxis</td>
<td>Itching, hives, throat tightness, dizziness, fainting, nausea, vomiting, diarrhea, cardiopulmonary arrest</td>
</tr>
</tbody>
</table>
## Major Allergens

*Sources: Urine, dander, fur, saliva, feces, serum, feathers, etc.*

<table>
<thead>
<tr>
<th>Animal</th>
<th>Relative Risk</th>
</tr>
</thead>
<tbody>
<tr>
<td>Birds</td>
<td>+</td>
</tr>
<tr>
<td>Guinea Pigs</td>
<td>++</td>
</tr>
<tr>
<td>Rabbits</td>
<td>+++</td>
</tr>
<tr>
<td>Mice</td>
<td>++++</td>
</tr>
<tr>
<td>Rats</td>
<td>++++++</td>
</tr>
</tbody>
</table>
Routes of Exposure

- Rodent allergens are present on bedding particles
  - Disturbing bedding increases exposure
- Practices that minimizes aerosolization of bedding particles minimizes exposure
Routes of Exposure

The following slides will discuss solutions/practices to...

Minimize Risk = Minimize Exposure
Animal facilities have

- 10 – 15 air changes per hour
- HEPA filtered or ventilated caging minimizing allergen contamination
Reduce Exposure…

Wear **Personal Protective Equipment (PPE)** per signs posted on animal room door
Reduce Exposure…

Wear gloves

Wear gowns
Reduce Exposure...

- Masks/respirators offer protection from inhaling allergens
- Type based on individual need or required level of protection
- Respirators require fit testing by EHSRM
Reduce Exposure
Manipulate Rodents in either…

Biosafety Cabinet (BSC)

Animal Transfer Station (ATS)

Contact LARC for BSC/ATS Training
Reduce Exposure...

Cages must have **lid** & **cover** when *leaving* facility.
Reduce Exposure…

Minimize the transportation and movement of animals outside facility to reduce exposure

- Must cover animal cages when moving/transporting between facilities and labs
Reduce Exposure...

- Must use *freight elevator only* to move animals between floors to reduce exposure of animal allergens to non-animal research personnel.
- To avoid suffocation/overheating, do not leave animals covered longer than 10 minutes.
Reduce Exposure...

- Movement of animals via stairwells or passenger elevators is prohibited
If Allergy Develops…

- Consult a physician
- Pulmonary function test may be performed
- Changes in procedures/practices may include
  - Minimizing exposure
  - Additional PPE
  - Respiratory protective equipment
- Medications
- Ongoing reassessment may be needed
Latex Allergy

- Latex
  - Latex gloves are **tan** or **yellowish** in color
- Allergy manifested as:
  - Skin rashes, hives, nasal, eye or sinus symptoms
  - Asthma
  - Acute anaphylactic shock (rarely)
Latex Allergy?

- Contact EHSRM - Occupational Health Coordinator x-5304
Sharps – What are They?

- Ex: Needles, razor/scalpel blades, lancets, broken glassware, glass and hard plastic pipettes and pipette tips
- Dispose of in sharps container
- Sharps should be considered a *potential* bio-hazard even if you are not working with infectious agents
Sharps Containers

- Present in every animal housing and procedure room
- Contact LARC when replacement needed
- Removed by EHSRM

Questions about sharps? Contact EHSRM
Zoonotic Diseases

Diseases transmitted between animals and humans
Zoonotic Diseases

Rodents (examples)

- Lymphocytic Choriomeningitis (LCM)
- Hantavirus
- Rat-Bite Fever (*Streptobacillus moniliformis*)
- Leptospirosis
- Salmonellosis
- Campylobacteriosis
- Dermatomycosis (Ringworm)
Zoonotic Diseases

Non-Human Primates (examples)

- Monkey B-Virus
- Tuberculosis
- Hepatitis virus group
- Shigellosis
- Salmonellosis
- Campylobacteriosis
- Dermatomycosis (Ringworm)
Zoonotic Diseases

Non-Human Primates

- Currently no primate work is done at UTSA, however, some research staff do participate in offsite or field primate research

- For more information contact EHSRM
Disease Transmission

- Ingestion – ex. Salmonella, Toxoplasmosis
- Penetration of mucous membranes or through broken skin – ex. Brucellosis, Rat Bite Fever, Cat Scratch Fever, Rabies, Herpes B Virus
- Penetration through intact skin – ex. Ringworm
- Inhalation – ex. Tuberculosis, Q-fever
Prevention of Zoonoses

DON’T:

- Eat, drink, smoke, apply cosmetics or insert contact lenses in the animal facility
- Wear open-toed shoes in the animal facility
- Wear scrubs, gowns and lab coats outside of the animal facility
- Recap used needles
- Pipette by mouth
Prevention of Zoonoses

**DO:**
- Wear gloves
- Wear scrub suits or lab coats over street clothes
- Use proper animal handling and restraint
- Use proper protective and containment equipment and devices
- Wash hands after handling animals, even > wearing gloves
Prevention of Zoonoses

Wear PPE according to signs posted in LARC facilities

LARC Personal Protective Equipment

Conventional

- Gown
- Gloves (When handling cages or animals)
- Long Pants
- Shoe Cover

No open toed shoes, sandals or flip flops are allowed in vivarium

**RED:** Required at all times

**BLUE:** Required when handling animals
Animal Related Injuries

- The potential for receiving a bite or scratch is an ever-present hazard with lab animals.
- Prevention of injury depends on proper training of personnel in animal behavior, handling and restraint.
Bitten/Scratched or Injured?

- Before anything else, *seek immediate medical attention* - First Aid kits located in animal facilities
- Contact your supervisor immediately (even if injury is minor)
- Contact EHSRM
Bitten/Scratched or Injured?

- Fill out “Employee Report of Injury” Form
- Obtain from supervisor/department “Notification of On-The-Job Injury” form to give to Doctor (if necessary)
- Contact EHSRM http://www.utsa.edu/safety for documents & information
Protocol Related Hazards

- Infectious Disease
- Ionizing Radiation
- Recombinant DNA
- Carcinogens
- Waste Anesthetic Gases
- Other toxic chemicals
Infectious Diseases

- Viruses
- Mycoplasma
- Bacterial
- Prions
- Fungal
Infectious Diseases

- Protocol related
- Containment dictated by agent type
- Special training for containment & use
- Federal regulations apply
- Most are BSL2 and BSL3 containment
- BSL3 access & training through EHSRM
Agents that Can Cause Genetic/Cellular Changes

- **Carcinogen** - a substance that can cause cancer
- **Mutagen** - a substance that can cause chromosomal damage
- **Teratogen** - a substance that can produce birth defects
Ionizing Radiation

- **X-rays**
  - Especially pregnant women should avoid x-ray exposure

- **Radioisotopes**
  - Risk depends on isotope, chemical form & dose
  - Use appropriate shielding, maximize distance and minimize time of exposure
Ionizing Radiation

- Maximum permissible dose = 500 mrem/9 mos (1/10 non-pregnant exposure limit)

- Questions/Training
  - Contact EHSRM Radiation Safety Office: x-5813
Potential Chemical Exposures

- Formaldehyde
- Halothane
- Isoflurane
- Miscellaneous laboratory chemicals
Formaldehyde Hazards

- Carcinogen
- Readily absorbed through skin
Exposure Controls/PPE

- Use downdraft table or a chemical fume hood, whenever possible
- Wear appropriate gloves, lab coat and safety glasses
- Wash your hands thoroughly after handling
Isoflurane Hazards

- Isoflurane is a stable, non-explosive inhalation anesthetic
- There are few significant side effects, except for being an anesthetic
- Caution if pregnant, esp. 1st trimester
Exposure Control/PPE

- Use in chemical fume hood or gas scavenging equipment
- Wear appropriate gloves, safety goggles and lab coat
- Avoid inhalation
- Do not get in eyes, on skin or clothing
- Wash thoroughly after handling
Pregnant? Or Plan to Be..

- Relative risk of protocol-related hazards to fetus during pregnancy
  - 0-3 mo: period of greatest vulnerability
  - 3-9 mo: growth retardation, premature birth

Contact EHSRM for more information
Other Potential Chemical Hazards

- Acetone
- Ethanol
- Other solvents
- Phenols
- Biological reagents
- Etc.
Work with Hazardous Agents?

- Infectious Diseases & Recombinant DNA
  - IBC x-7733
  - EHSRM - Lab Safety Division x-6101

- Radioisotopes
  - EHSRM - Radiation Safety x-5807
Work with Hazardous Agents?

- Carcinogens and Other Toxic Chemicals
  - EHSRM - Lab Safety Division x-6101
Questions??....
Contact Information

- LARC x-6692
- http://vpr.utsa.edu/larc/index.php
- EHSRM x-5250
  - www.utsa.edu/safety
Don’t Forget…. 

To sign and submit the “Acknowledgement Form” to the LARC to complete your AWPP training

To ensure your LARC facility access is processed please be sure to complete and submit the form
Final Important Reminder.....

Before beginning any animal work you must also complete....

all IACUC *required training* as outlined in the Animal Research Workers training requirements checklist
The End

Finally!!!