

NIH Animal Research Facility Orientation Course



Training Topics

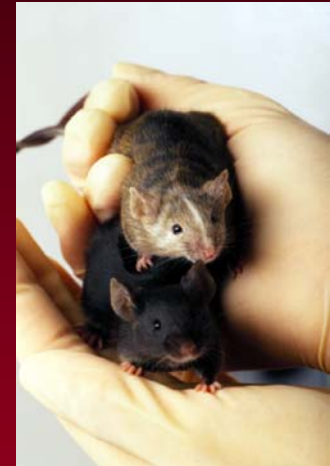
- **Animal research at NIH**
- **What makes a building an animal research facility**
- **How to properly navigate in an animal facility**
- **PPE – what is it and why is it *important***
- **Hazards you may encounter**
- **Animal facility scenarios**

Animal Research at NIH: WHY use animals in research?

- **There is no complete replacement for a living system**
- **Striking similarities between the genetic, anatomic, and physiologic systems of animals and humans**
- **Animal research played a vital role in every major medical advance in the last century**

Animal research at NIH: Which animals are used?

- **91% are MICE and RATS**
- **Other species include:**
 - **Fish and frogs, 7%**
 - **Birds, 1/2 %**
 - **Guinea pigs & hamsters, 1/4 %**
 - **Nonhuman primates, 1/4 %**
 - **Rabbits, dogs, cats, pigs, sheep, 1/4 %**



Animal research at NIH: How is their welfare ensured?

Regulations and guidelines:

**Multiple federal
animal welfare
regulations and
NIH guidelines
govern the care
of the research
animals**



Animal research at NIH: How is their welfare ensured?

Written plan

and approval:

**An Animal Study
Proposal has to
be written and
approved by the
IC's Animal Care
and Use Committee**

**What Is an Animal Care and Use Committee*?
*ACUC**

NIH
Animal Awareness

The ACUC:

- Reviews Animal Study Proposals
- Reviews Animal Programs and Facilities
- Advises on the Care and Use of Animals
- Identifies Training Needs
- Responds to Concerns

A program sponsored by the NIH
Animal Research Advisory
Committee, 496-5424

Animal research at NIH: How is their welfare ensured?

Daily oversight and care:


**Provided by
highly trained
veterinarians,
vet technicians
and animal
husbandry staff**



Animal research at NIH: How is their welfare ensured?


AAALAC accreditation:

Outside oversight of the animal care program provided by the Association for Assessment and Accreditation of Laboratory Animal Care




NIH Animal Awareness

NIH is AAALAC Accredited

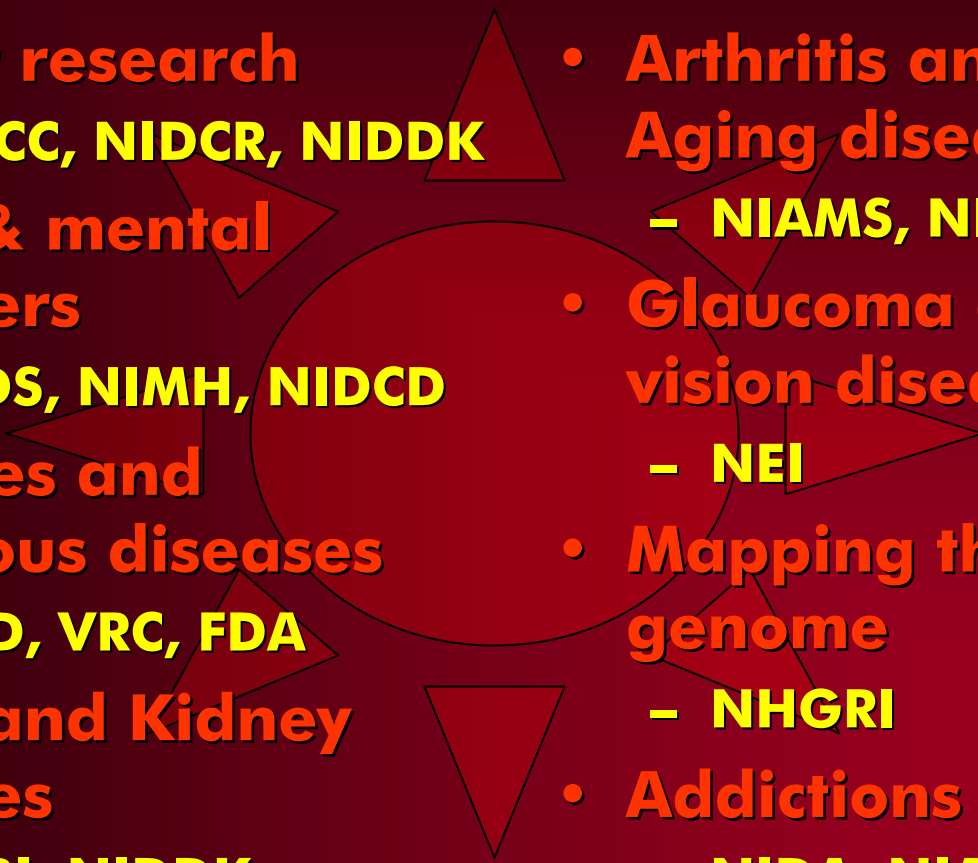


The NIH animal care and use program is accredited by the Association for Assessment and Accreditation of Laboratory Animal Care International

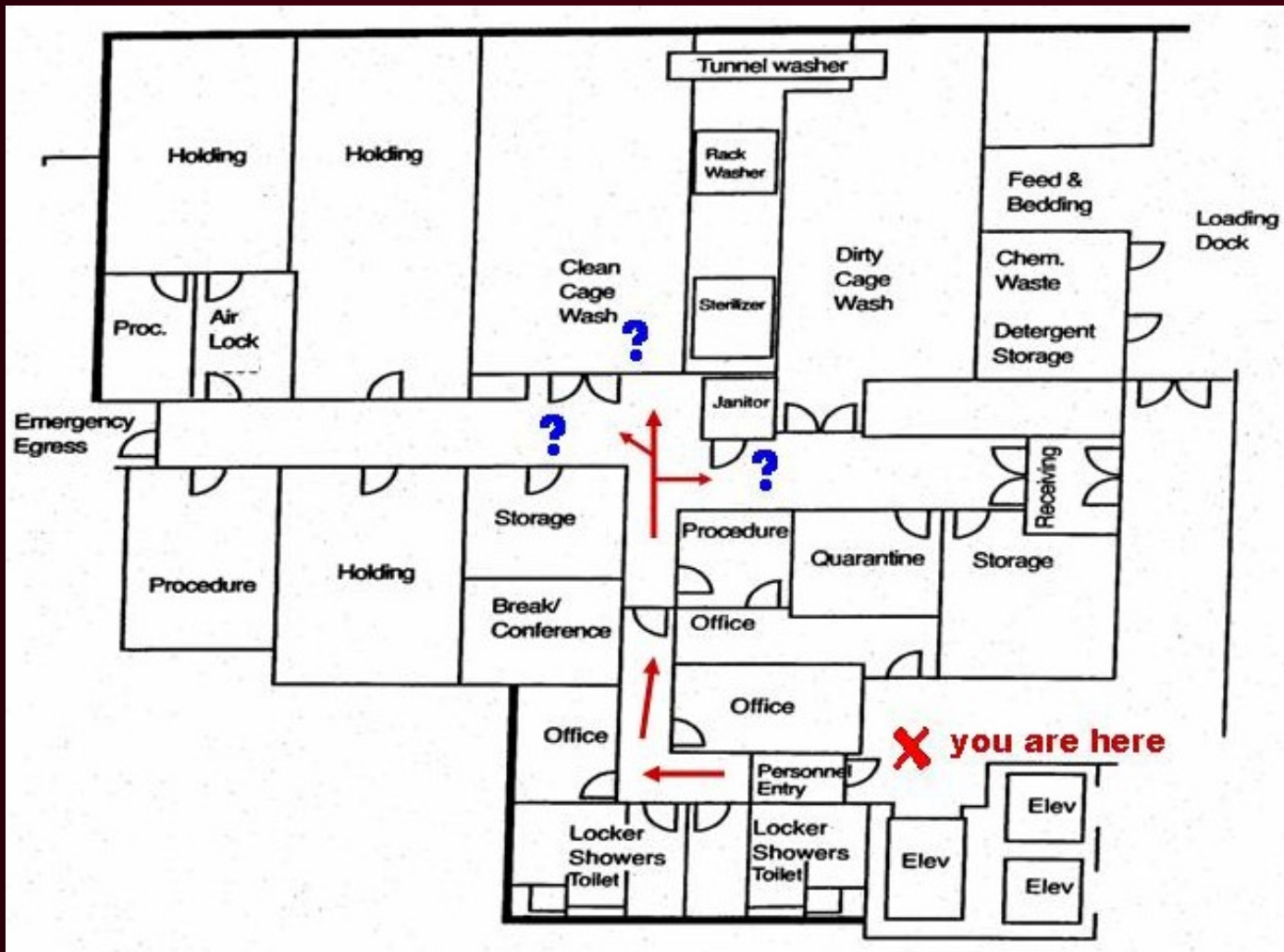


A program sponsored by the NIH Animal Research Advisory Committee, 496-5424

Animal research at NIH: How do we benefit?

- 
- **Cancer research**
 - **NCI, CC, NIDCR, NIDDK**
 - **Brain & mental disorders**
 - **NINDS, NIMH, NIDCD**
 - **Vaccines and Infectious diseases**
 - **NIAID, VRC, FDA**
 - **Heart and Kidney diseases**
 - **NHLBI, NIDDK**
 - **Arthritis and other Aging diseases**
 - **NIAMS, NIA**
 - **Glaucoma and other vision diseases**
 - **NEI**
 - **Mapping the human genome**
 - **NHGRI**
 - **Addictions**
 - **NIDA, NIAAA, NICHD**

What makes a building an Animal Research Facility?



What makes a building an Animal Research Facility?

Entrances & Exits:

secured with controlled access
for both exterior and interior
doors



What makes a building an Animal Research Facility?

Animal holding rooms:



these rooms contain the animals that are held inside different types of caging; they may also have a separate security code

What makes a building an Animal Research Facility?



Animal holding rooms:

these rooms may be used for special needs such as quarantine space for sick or infectious animals or barrier space for disease free animals

What makes a building an Animal Research Facility?

Procedure rooms:

These rooms will have countertop work areas and equipment for supporting research such as anesthesia machines, downdraft work stations, fume hoods, and biosafety cabinets.



What makes a building an Animal Research Facility?

Cage wash area:

the cage wash area will have both a dirty side for staging and prepping dirty cages and a clean side for clean cage removal and possible cage and rack storage



What makes a building an Animal Research Facility?

Feed Storage room:

The feed room will often be chilled to prolong food shelf life; there may be fruits, vegetables, cereal, peanut butter and other common foods that are used as food treats for the animals



What makes a building an Animal Research Facility?

Bedding Storage Room:

The sacks of bedding material will be on shelves or pallets; this room may also be used for other dry storage



How to Properly Navigate in an Animal Research Facility

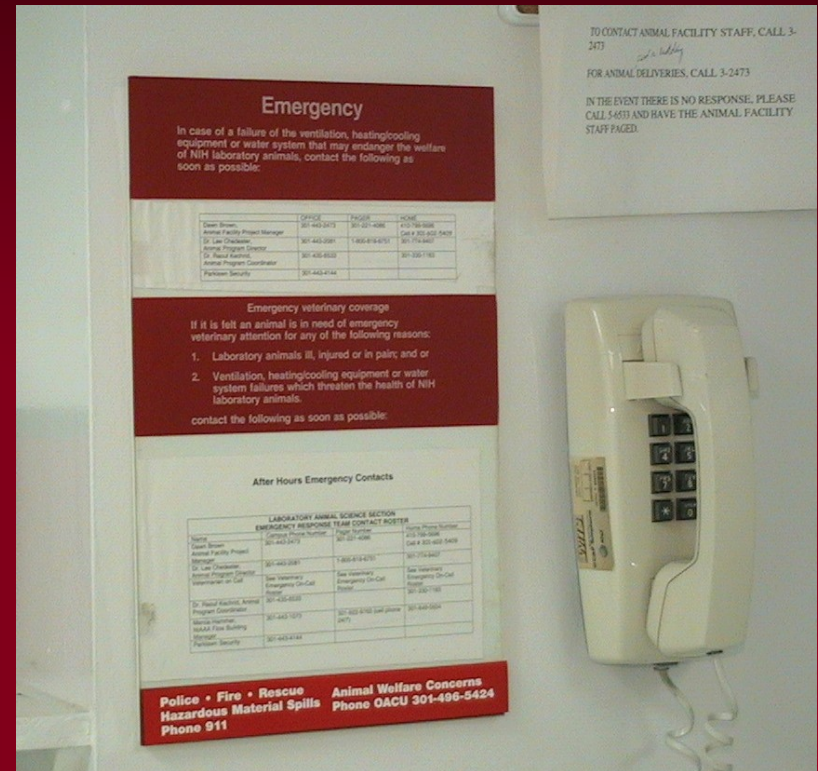
***SIGNS* are very important!**

- **Emergency contact rosters**
- **Required PPE (personal protective equipment, i.e. lab coat, booties, etc.)**
- **Hazards within the facility**
- **Status of room (i.e. quarantine, clean, dirty, isolation)**

How to Properly Navigate in an ARF: Signs

Emergency Contact Rosters:

These rosters are posted at the entry of each ARF and provide work, home, and pager/cellular numbers for the facility manager, veterinarian, and key technicians.



How to Properly Navigate in an ARF: Signs

Required PPE:

Personal protective equipment is required for all ARFs. Posted signs will show/list the PPE needed. The type and amount of PPE will vary with the type of animals housed in the ARF and their health status.

APPLIES TO INDIVIDUALS WEARING STREET CLOTHES

To enter the *Main Corridor*
you **MUST** wear:



TYVEK
NOTE: Worn over clean street clothes!
If you have had substantial rodent contact within the past 24 hours, then you **MUST** shower and change into clean clothes prior to entering the facility.

HEAD COVER

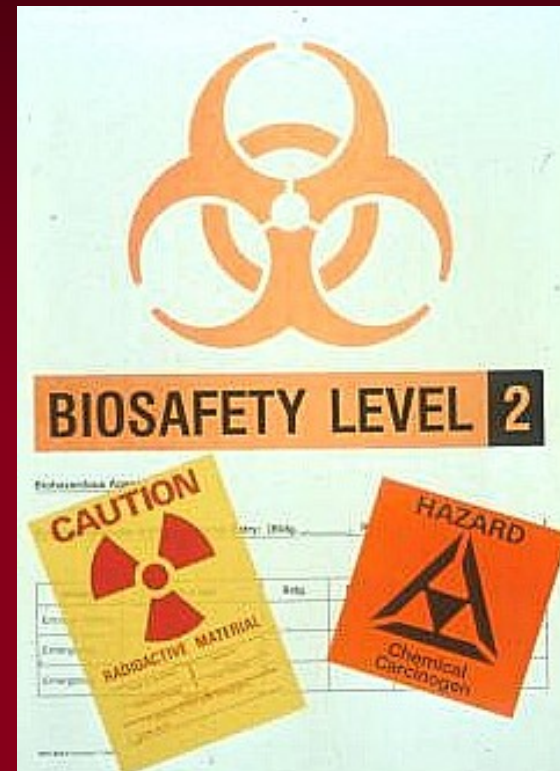
SHOE COVERS
Put on over your shoes as you cross the

**ANIMAL FACILITY
PROPER ATTIRE REQUIRED**
DISPOSABLE LAB COAT & SHOE COVERS MUST BE WORN
GLOVES MUST BE WORN WHEN HANDLING CAGES OR ANIMALS
CAPS, MASKS, COVERALLS AND PROTECTIVE GOGGLES ARE AVAILABLE

How to Properly Navigate in an ARF: Signs

Hazard signs:

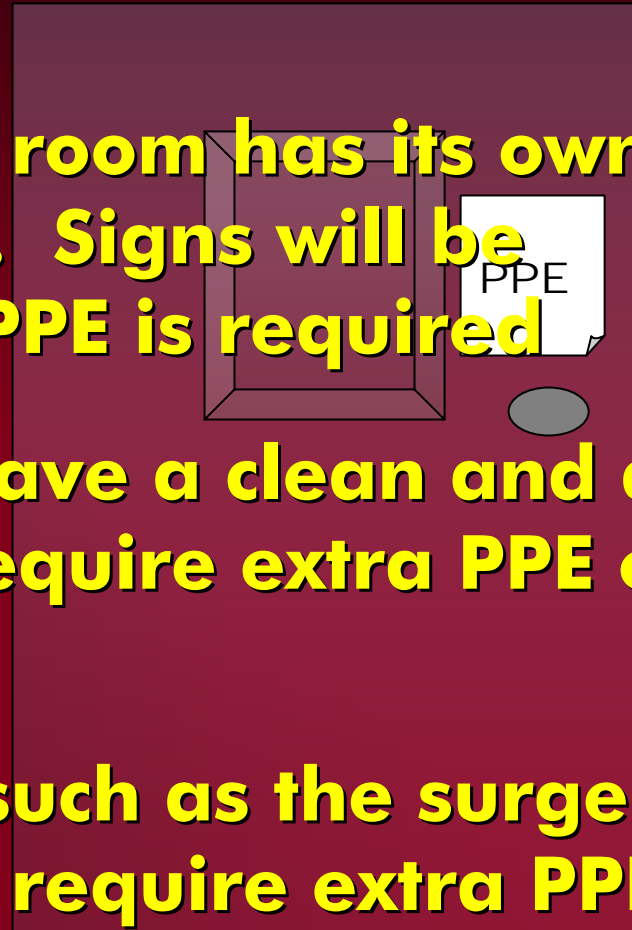
The animals may be exposed to infectious agents, radiation or carcinogenic chemicals as a part of an experiment, and hazardous chemicals may be stored in the animal facility. Any potential human health hazard will be alerted by signs.



How to Properly Navigate in an ARF: Signs

Room status

- Each animal holding room has its own unique health status. Signs will be posted if additional PPE is required
- The cage wash will have a clean and a dirty side and may require extra PPE or a change in PPE
- Other special areas such as the surgery operating room may require extra PPE



How to Properly Navigate in an Animal Research Facility

ENTERING the facility

- During normal work hours (7am – 5pm): you should notify the facility manager prior to entering the main facility**
- After hours, non-emergency: you should attempt to contact the facility manager or facility veterinarian prior to entering**
- After hours, valid emergency: you can proceed cautiously, adhering to signs**

How to Properly Navigate in an Animal Research Facility

ENTERING the facility:

You need to notify the facility manager or veterinarian prior to entry. This will allow you to provide your reason for entry, and allow them to *inform you* of any specific human health issues that exist in the facility and/or special requirements you need to meet so that you don't affect the animals' health.



How to Properly Navigate in an Animal Research Facility

ENTERING the facility:

Special requirements you may need to meet before entering a facility are usually based on the species housed there, *for example:* working in monkey rooms may require proof of a negative TB test or having certain vaccinations prior to entering.



How to Properly Navigate in an Animal Research Facility

ENTERING the facility:

Tools and equipment should be wiped with disinfectant solution before taken into the facility. Items that cannot be disinfected should be left in the entry area. Larger items such as ladders can be borrowed from the animal facility personnel.



How to Properly Navigate in an Animal Research Facility

ENTERING the facility:

To enter the main facility put on the appropriate PPE which will be on/in a shelf, cart, cabinet, etc. in clear view of the entry doorway. Some facilities may require passing through a locker room and the PPE will be in there.



How to Properly Navigate in an Animal Research Facility



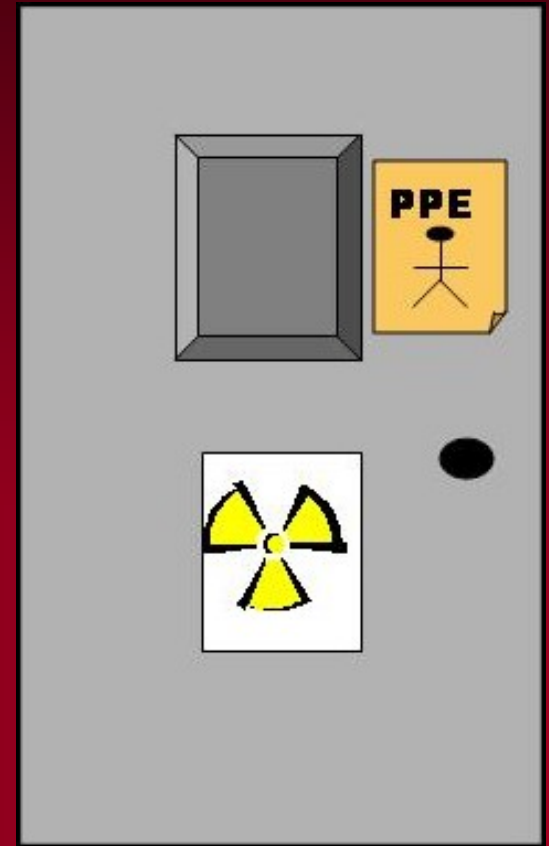
INSIDE the facility

- Proceed directly to the area or animal holding room that requires attention
- Check for “foot pattern” signs that may direct sequence of room entry or one-way directional entry

How to Properly Navigate in an Animal Research Facility

INSIDE the facility

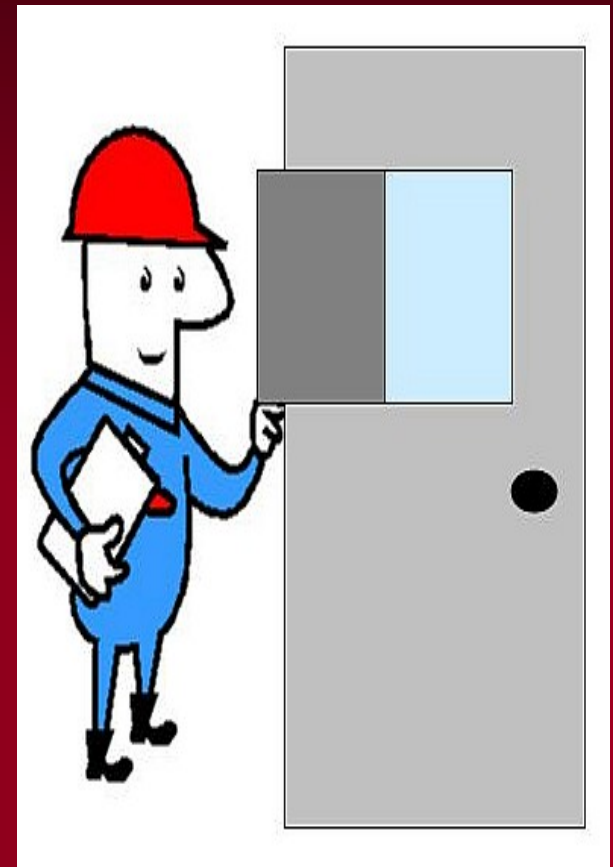
- Check for hazard signs or extra PPE signs on animal holding doors or procedure areas
- If any questions or concerns arise, contact the facility manager or veterinarian



How to Properly Navigate in an Animal Research Facility

ENTERING an Animal Room

- **Viewing windows** should be used to scan the area before entering. Look for loose animals, other people, or equipment blocking your path.
- After entering, **DO NOT TOUCH** the animals or their cages, and finish your task in a timely manner.



How to Properly Navigate in an Animal Research Facility

ENTERING an Animal Room

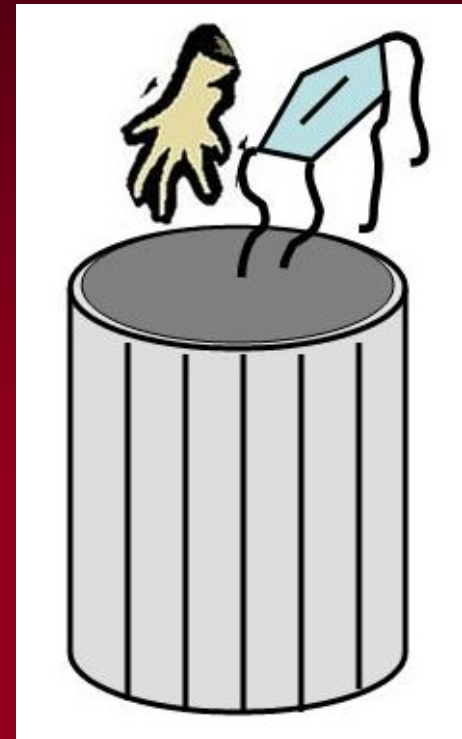
- If a cage must be moved to complete the your task, contact a facility worker for assistance.**
- If in a nonhuman primate room: keep at a distance that will prevent the animals from grabbing you or that will prevent the contents of the cage from splashing you.**



How to Properly Navigate in an Animal Research Facility

EXITING the facility

- **Exiting the area, room or facility may be at a different door, look for signs.**
- **As you exit, PPE must be removed! This may require partial removal when exiting an animal room as well.**
- **Deposit the PPE in provided trash cans or recycle bins.**



PPE – What is IT?

PPE = personal protective equipment

- Lab coats or coveralls**
- Goggles or face shields**
- Hair covers**
- Booties**
- Gloves**
- Masks**



PPE – Why is it Important?

Protection for your health

- The animals in the facility may have natural or experimental diseases that can affect your health.
- The type of PPE required addresses potential hazards and provides protection, if worn properly.



PPE – Why is it Important?

Protection for the *animals*:

You can carry disease particles on your shoes and clothing that will affect the animals.

PPE changes within the facility are in place to protect animals that have different health levels.



PPE – How to Use IT

ORDER: Putting on

- The order is usually not critical**
- Booties may need to be first as you step into the facility**
- Gloves should be last**



PPE – How to Use IT

PROPER WEAR

- Lab coats fully buttoned
- Coveralls fully zipped
- Gloves & booties replaced if torn
- Hair net covering all hair
- Mask fully over nose and mouth
- Face shield down over eyes and mouth



PPE – How to Use IT

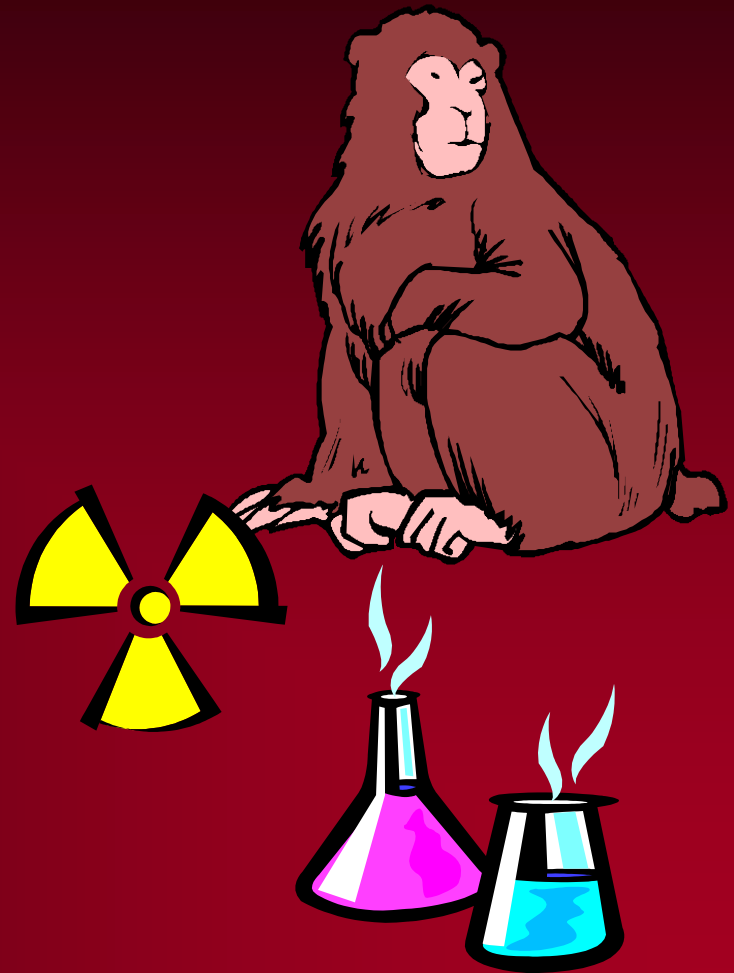
ORDER: Taking off

- 1st: Face shield, goggles, mask, hair cover**
- 2nd: Lab coat or coveralls; turn inside-out when removing**
- 3rd: Booties**
- 4th: Gloves; pull off inside-out**



Hazards you may encounter!

- **The animals**
- **Biological agents**
- **Radioactive agents**
- **Chemical compounds**



Hazards you may encounter!

The animals:

- **Avoiding contact is critical as they may bite, or scratch you and in the process transfer diseases.**
- **Monkeys may also reach out and grab you or splash you with urine and feces if you are standing too close**



Hazards you may encounter!

The animals:

If a monkey is found loose in a room or corridor, try to avoid direct eye contact and move slowly away from it to an exit. The monkey will try to flee from you if not made to feel threatened or trapped.



Hazards you may encounter!

The animals:

Soiled monkey caging can also pass diseases if you are scratched by the equipment.


Report any animal contact or equipment scratches to the facility manager or veterinarian, *immediately.*



Hazards you may encounter!

Biological agents:

If a disease that can infect you is being tested in a research animal, ***THIS*** special sign will be posted on the animal holding room door.



BIOSAFETY LEVEL 2

BL3 PRACTICES AND PROCEDURES

Biohazardous Agents _____

Special Procedures or Precautions for Entry (Bldg. _____ Room _____ Date Posted _____)

Notice	Call or See	Bldg.	Room	WH Phone	Home Phone
Entry or Advice				406- _____	
Emergency				406- _____	
Emergency				406- _____	

Hazards you may encounter!

Biological Agents:

The biohazard sign will give specific info on what diseases are present in the room and who to contact if you have any questions.




Hazards you may encounter!

Radioactive agents:

If a radioactive agent is being tested in a research animal, ***THIS*** special sign will be posted on the animal holding room door.

CAUTION



Radioactive Materials

Security: All radioactive materials in use or storage (source vials, experiments in progress, & waste) must be secured by laboratory personnel when the laboratory module is left unattended.

Housekeepers: Do not handle or remove anything marked RADIOACTIVE! Do not mop or sweep laboratory module without radiation safety approval from lab personnel.

Empleados de mantenimiento: No saque las cosas que estén marcadas con el símbolo de radiación. No limpie o barra los laboratorios sin autorización de los investigadores.

Shops/DES: Contact the Authorized User indicated below prior to performing any renovations, maintenance, repairs, especially involving hoods, ducts, or plumbing.

Radiation Safety Assistance: Call 301-406-5774 from 8 A.M. to 5 P.M. on workdays. At all other times (evenings, weekends, holidays) call 911 (Bethesda NPI) or 9-911 (NIH Facilities in Rockville, Kensington, Poolesville, Gaithersburg) or x8119 (Baltimore).

Authorized User for this Room: [Contact in case of emergency]

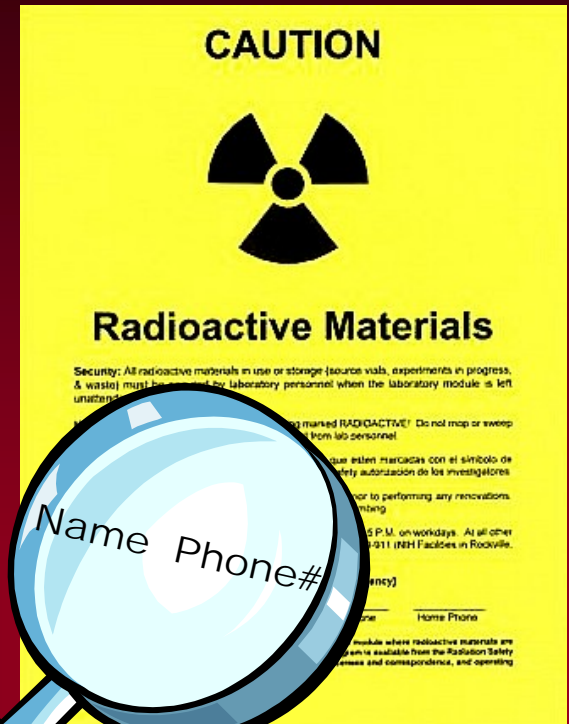
Name	Office Location	Work Phone	Home Phone

This sign must be displayed prominently at the entrance to each lab module where radioactive materials are stored or used. Information related to the NIH Radiation Safety Program is available from the Radiation Safety Branch (301-496-5774), including 10CFR Parts 17 and 20, NRC licenses and correspondence, and operating procedures such as the NIH Radiation Safety Guide.

Rev. 3/99

Hazards you may encounter!

Radioactive agents:
The radiation safety sign will also give info on who to contact if you have questions.



Hazards you may encounter!

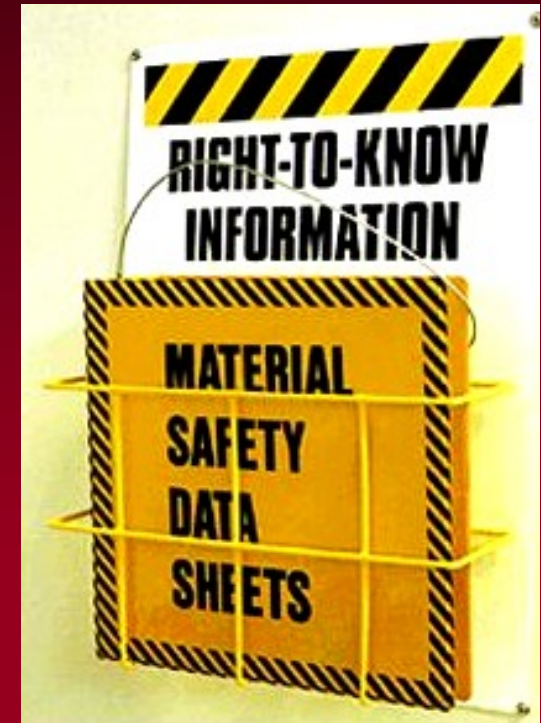
Chemical compounds:



Various chemical compounds are used in animal research facilities for cleaning and for use in research.

All compounds should be labeled.

Material Safety Data Sheets will be displayed that discuss concerns.



Hazards you may encounter!

Chemical compounds:

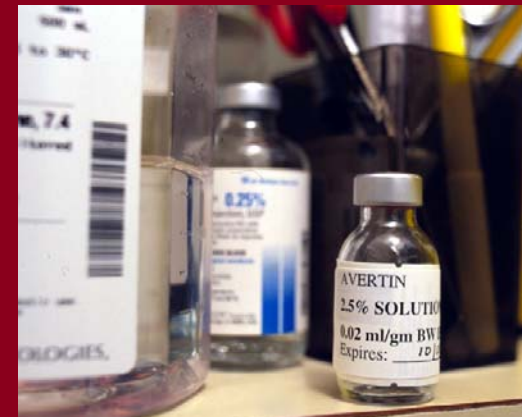
- **Cleaning agents:** in cage wash or procedure rooms
- **Disinfectants:** in cage wash or procedure rooms



Hazards you may encounter!

Chemical compounds:

- **Inhalant anesthetics: in procedure rooms and operating rooms**
- **Experimental compounds: in procedure rooms**



Animal Facility Scenarios

The following 4 scenarios are designed to take the information provided in this training and present it in common, work day settings. Some of the resolutions provided might not be the only response possible. Therefore, we hope these scenarios will generate discussions at your work place on appropriate ways to deal with the animals, their caging and other potential hazards found in an animal facility when you are tasked to work in these areas.

Animal Facility Scenario: #1

Situation status: Routine

Time of Event: Daytime

You are an electrician with facility maintenance and have been given a ticket for installing a new light fixture in an animal holding room that houses monkeys.

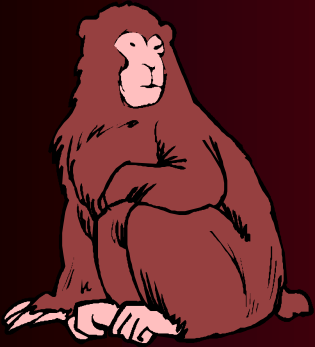


Animal Facility Scenario: #1

Contact needed: You've spoken to the Facility Manager and have been assured there are no special concerns in the room.

Facility protection: As a routine call you have selected and disinfected the tools you will need, borrowed the facility ladder, and put on appropriate PPE.

Animal Facility Scenario: #1



After entering the animal holding room, and starting your work, you look up and realize a monkey is loose in the room.



What do you do next?!

Animal Facility Scenario: #1



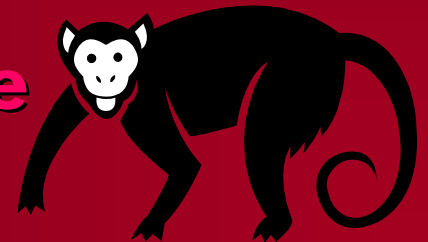
DO NOT run or make sudden movements.

Do not make eye contact.

Close the access panels to walls and ceiling, if possible.

Slowly walk to the door allowing the monkey to move away from you.

Immediately contact the animal facility staff!



Animal Facility Scenario: #2

Situation status: Emergency

Time of Event: Evening

You are a plumber with facility maintenance and have been given a ticket for a possible broken water main pipe in an animal facility.



Animal Facility Scenario: #2

Facility protection:

Due to the urgency and type of situation, the facility manager asks that you wear a lab coat in the main hallways, and if you find you'll need to enter a monkey room, a face mask and hair cover. She also tells you that she is headed to the facility to take care of the animals and will be on site within 30 minutes.

Animal Facility Scenario: #2

After entering the facility you realize the water is coming from a mouse holding room where an automatic water system line has broken. There are several cages of mice that are wet and several more that have mice swimming.

What do you do next?!



Animal Facility Scenario: #2

Stop the water flow as quickly as possible!

Knowing that the Facility Manager is on her way, allow her to join you and she will take care of the wet and swimming mice.

Animal Facility Scenario: #3

Situation status: Emergency

**Time of Event: Off Duty
Hours**

You are a firefighter on duty with the NIH Fire Department when an automatic fire alarm goes off in a building that contains an animal facility.



Animal Facility Scenario: #3

Upon entering the facility you see a large amount of smoke coming from a single room and smoke accumulating in the corridors.

What should be your course of action?



Animal Facility Scenario: #3



**Division of Fire Rescue Services
SOP's will need to be followed and
needed resources requested.**

**If the initial assessment reveals the
fire can be easily contained, you
may contact the ARF personnel
yourself by locating the Emergency
Contact Roster at the facility
entrance.**

**If the situation is more involved,
you may need to provide this roster
to your Incident Commander or ECC
and have them contact the ARF
personnel.**

Animal Facility Scenario: #3

As you explore the situation you realize that the fire is coming from a procedure room that has a radiation hazard sign posted and contains oxygen in compressed gas cylinders.

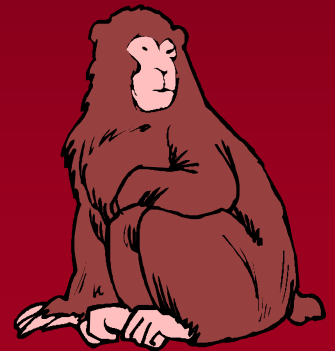
You also realize there are animal holding rooms with both mice and monkeys and a few have biosafety level 2 & 3 signs posted:

What should you do?



Animal Facility Scenario: #3

Your actions as a member of the Division of Fire Rescue Services will be based on the incident priorities determined by the Incident Commander. The IC will develop the priorities based on info you provide about the contents of the facility (animals, hazards, etc.) and facility mission; keeping ***Life Safety*** as the primary concern!



Animal Facility Scenario: #3

BASED ON the INCIDENT COMMANDER's directions, the following responses could occur:

- **The animal facility manager or veterinarian will be available, so their guidance, and possibly, direct help may be utilized.**
- **If only a small amount of smoke has accumulated in the animal rooms, then you'll keep the doors closed.**
- **If the animal rooms are filled with smoke, then you'll open the room doors.**
- **You'll only relocate animals if truly necessary for their immediate health and welfare.**
- **If hazardous areas must be entered, then you'll activate a Hazmat team to assist.**

Animal Facility Scenario: #4

Situation status: Emergency

Time of Event: Evening Hours

You are a member of the NIH Police Force and receive a 911 call stating that a person is destroying computers and releasing animals inside an animal research facility, and that a few researchers may be in the facility and in possible danger.



Animal Facility Scenario: #4

What should you consider?

Use the L.I.E.E.E. Principle!

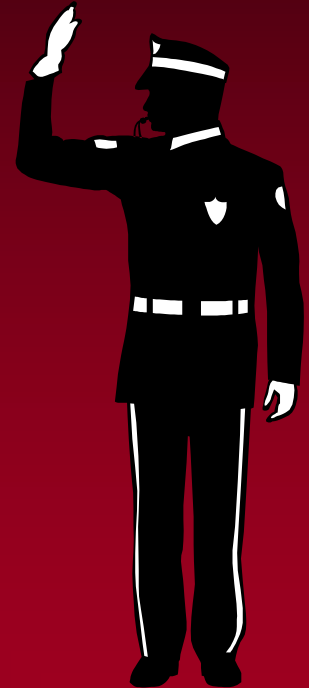
- Locate**
- Identify**
- Evaluate**
- Evacuate** (if necessary)
- Eliminate** (by negotiations or tactical methods)

This is a proven tool for the successful resolution of any critical incident.



Animal Facility Scenario: #4

- **What should you consider?**
 - **The principles of L.I.E.E.E. should be applied throughout a scenario.**
 - **Officers should always use training and common sense to adapt to an incident.**



Animal Facility Scenario: #4

What should be done initially?

Cruisers should be positioned on opposing corners of the building to maximize the view from all sides.



Animal Facility Scenario: #4

- **Who should be contacted?**
 - **The complainant should meet you outside the building, but ONLY if this can be done *safely*.**
 - **If the area is *not safe* have the complainant contact you by phone.**
 - **If the complainant is not available, then proceed with the info you have.**



Animal Facility Scenario: #4

- **If the complainant is available attempt to determine the following:**
 - **WHO?** Is the suspect known and how do they know him. Get a complete description and broadcast a lookout.
 - **WHAT** crime is occurring?
 - **WHEN** did the situation occur? Is the suspect still believed to be in the building or was he seen leaving? If the suspect left, how long ago and in which direction?

Animal Facility Scenario: #4

- **If the complainant is available attempt to determine the following:**
 - **WHERE** was the crime taking place?
**What floor and/or area of the building?
Can he draw a sketch of the area layout and last known location of the suspect?
Is he aware of any hazards in the area, i.e. loose animals, radiation or biohazard use?**

Animal Facility Scenario: #4

- **If the complainant is available attempt to determine the following:**
 - **WHY** did this occur? Did they over hear reasons for the break-in or do they suspect the person is a disgruntled employee?
 - **HOW** did the suspect get into the facility? Were any threats made? Was a weapon implied or observed and if so what kind?

Animal Facility Scenario: #4

- **How do you proceed?**

REMEMBER THE VALUE HEIRARCHY!

- **Civilian Safety:** all non-police people in the area
- **Officer Safety:** minimize risk of injury to yourself
- **Suspect Safety:** Use proven tactics to also minimize risk of injury to the suspect
- **Property:** this includes the **animals**, research materials, equipment, computers, etc.



Animal Facility Scenario: #4

NOW your debriefing info has allowed you to *established a perimeter* inside the building that is as close as possible to the incident site (to minimize your containment area),

AND

You've placed other agency response teams on exterior perimeter duties.



How do you proceed?

Animal Facility Scenario: #4

With your perimeter established you now enter the animal facility in teams. As you enter the facility you see that most of the room doors are closed, but a few rats are loose in the main hallway and some of the animal holding room doors are open.

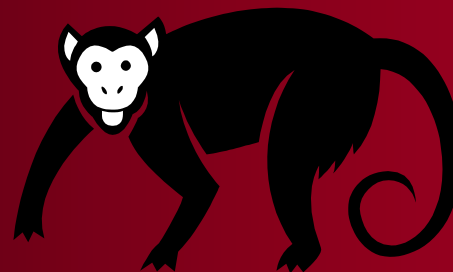


How do you proceed?

Animal Facility Scenario: #4

You should secure the area by:

- **Identifying biohazard or radiation signs and clearing those rooms visually, if possible**
- **Visually clearing animal rooms that have closed doors**
- **Containing the loose animals by closing them in a secured room, but NOT by trying to collect them.**



Animal Facility Scenario: #4

As you enter the main hallway, the suspect is seen fleeing to an adjacent hallway.

How do you proceed?



Animal Facility Scenario: #4

- **Attempt to safely contain him in the smallest area possible**
 - to minimize risk to civilians and restrict his movement
- **Attempt to communicate with the suspect:**
 - if he will speak to you, direct him to a position of control
 - If he will not surrender, consider him barricaded and call for your team members that are trained in negotiation tactics
- **Keep as a crime scene**
 - Do not return the facility to the ARF personnel until it is properly processed.

Animal Facility Scenario: #4

IN ALL CIRCUMSTANCES REMEMBER TO:

- Use common sense
- Don't rush in
- Don't get tunnel vision
- Establish perimeters and maintain them
- Use all available human and physical resources



THANK YOU
for your attention!

**The final page is a completion
certificate.**

**Remember to type in your name and
the date before printing!**



ANIMAL RESEARCH FACILITY ORIENTATION COURSE

Certificate of Completion

This is to certify that

(NAME)

completed the Animal Research Facility
Orientation Course on

(DATE)