UCSF
University of California
San Francisco

Safety Training for IACUC Members and Staff

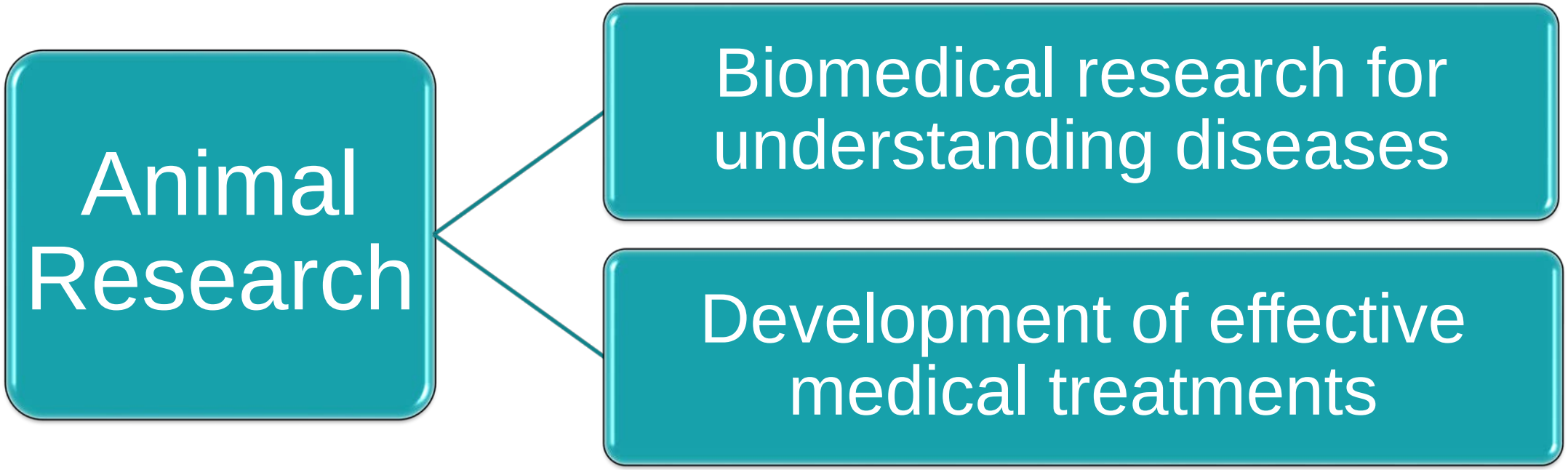
Environment, Health and Safety

Course Objectives

- Animal safety program overview
- Institutional collaborations and oversight
- Understand the hazards and risks are controlled in animal facilities
- How hazardous materials are used safely in animal facilities

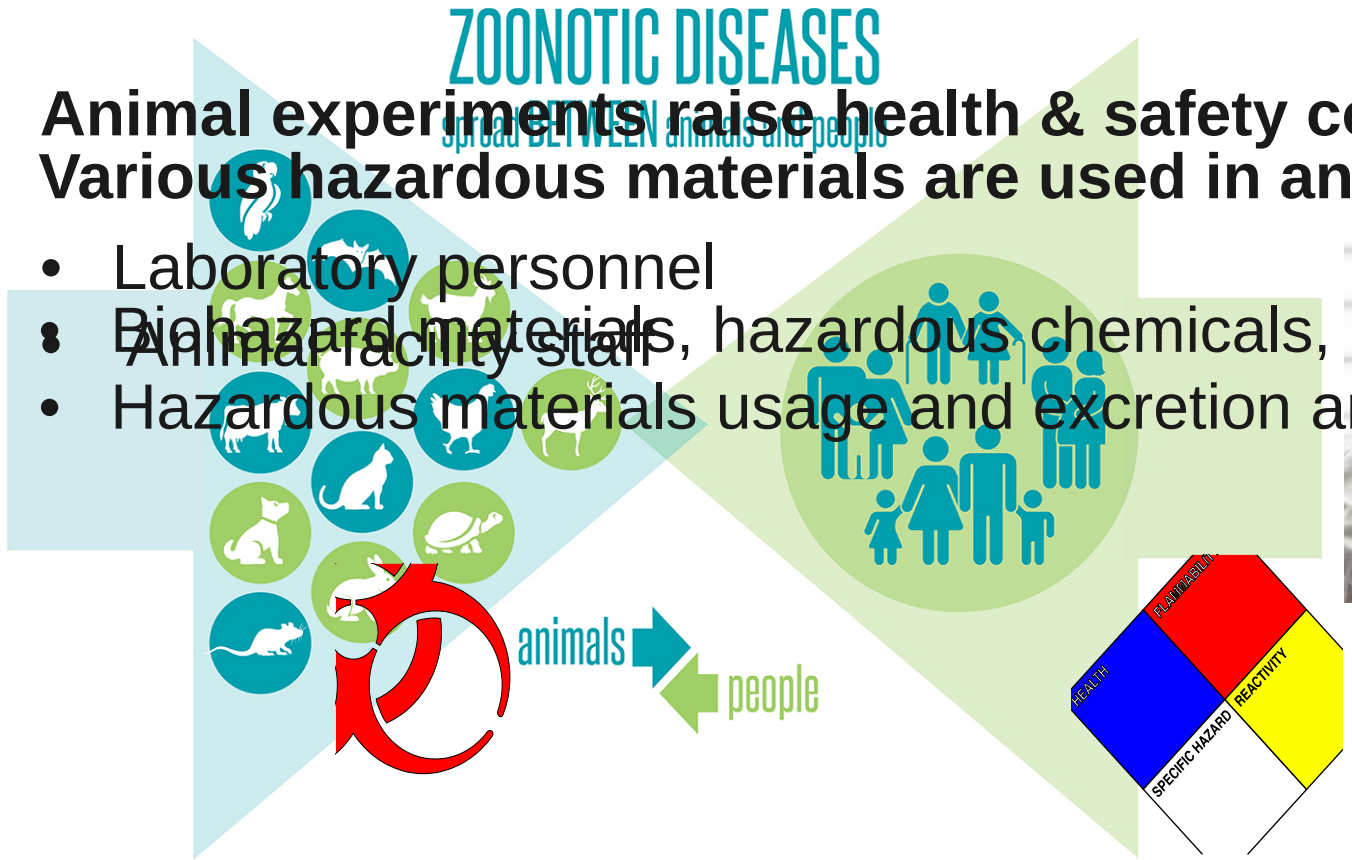
Overview

Introduction



Research animals provide scientists with complex living systems consisting of cells, tissues and organs.

Introduction



Animal experiments raise health & safety concerns for:
Various hazardous materials are used in animal research.

- Laboratory personnel
- Animal facility staff
- Biohazard materials, hazardous chemicals, radioactive isotopes
- Hazardous materials usage and excretion amounts/routes are

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Introduction

Various hazardous materials are used
- Animal Biosafety Levels (ABSL
- Most animal housing rooms are ABSL1

Bio-medical research institution

Over 600

Animal research using a variety of species (over 500 IACUC protocols)

Including use of:

UCSF Safety Programs

UCSF Safety Programs

UCSF integrates functions of several departments to implement institutional health and safety programs including:

- Environment, Health and Safety (EH&S)
- Institutional Animal Care and Use Committee (IACUC)
- Laboratory Animal Resource Center (LARC)
- Occupational Health Services (OHS)

Provides safety guidelines for all individuals who are involved in the care and use of research animals

- Hazards and risk assessment
- Educational and preventive programs

Institutional Collaborations

As a voting member of IACUC, BSO attends IACUC meeting:

- Review protocols
- Evaluate use of hazardous biological, chemical, and radioactive materials on animals.
- Ensure laboratories have approved authorizations for use hazardous materials
- Attend semiannual IACUC/EHS inspections.

LARC veterinarian attends Institutional Biosafety Committee (IBC) meetings

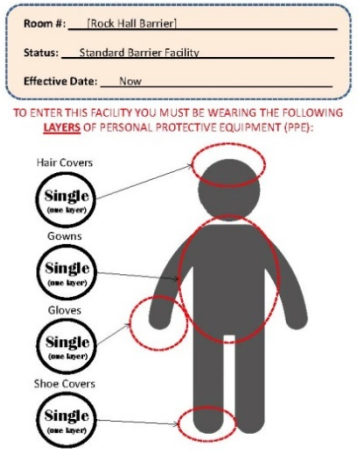
Safety Consideration meetings:

- Higher-risk, complicated, or unusual animal projects are subject to a Safety Considerations meeting
- Attendees: scientists, animal facility staff, BSO, IACUC, and OHS
- Project details and risk assessment
- Special conditions: Occupational health concerns, medical surveillance, vaccination

Exposure Controls

Overview of Exposure Controls

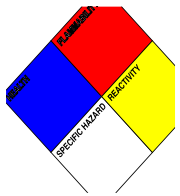
- Engineering Controls
  - Biosafety cabinets
  - Chemical fume hoods
  - Animal cage changing stations
- Administrative Controls
  - Policies & Standard Operating Procedures (SOPs)
- Personal Protective Equipment (PPE)
  - Scrubs/lab coats & eye protection
  - Gloves, shoe covers & head covers
- Work Practices
  - Do you follow SOPs or take short cuts?



Exposure Controls

First step…

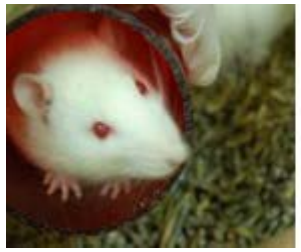
Identify the hazard!

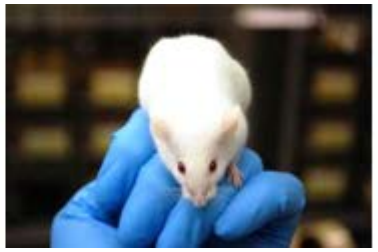
Biohazard	Chemical Hazard	Radiation Hazard	Others
			?

Hazardous Materials Used in Animals

Using Hazardous Materials in Animals

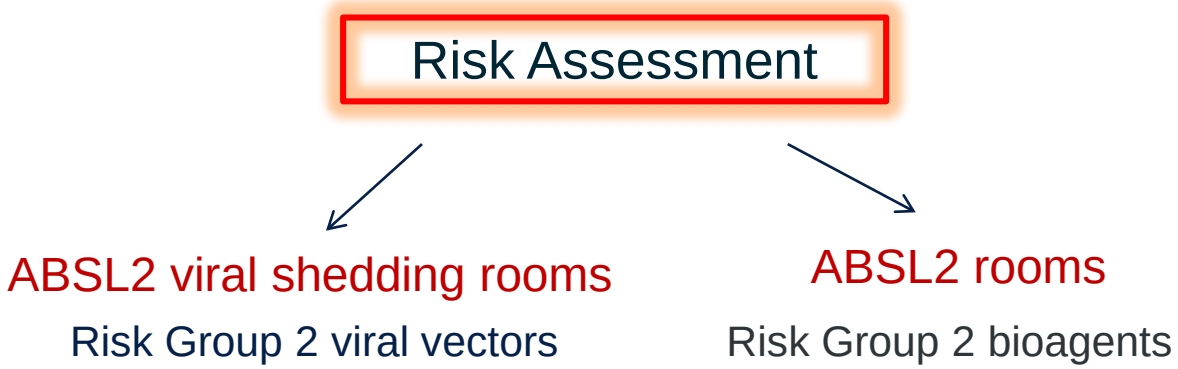
- Specific hazards when working with animals:
  - Infectious agents, human source materials, viral vectors – ABSL2 rooms
  - Biological toxins
  - Hazardous chemicals or carcinogens



ABSL2 Requirements

- Two types of ABSL2 facilities at UCSF:
  1) ABSL2 rooms
  2) ABSL2 viral shedding rooms



- Special safety procedures:
  - Rooms approved by LARC and EH&S
  - Signage posted on the door: ABSL2 door sign & PPE sign
  - Disposal:
    - carcasses = pathological waste
    - bedding = biohazardous waste

ABSL2 Facility

- For use of Risk Group 2 infectious agents & human tissues, blood, serum, fresh human primary cells in animals.
- Lab personnel label cages with biohazard label.
- LARC personnel care for animals in designated ABSL2 room.
- House infected animals in ABSL2 room for entire experimental period.
- Dispose of animal bedding as biohazardous waste.
- Place cages in bag, seal, and mark bag as ABSL2.
- Spray the outside of bag with 10% diluted bleach.
- Autoclave cages prior to cage wash.

Names of infectious agents & date of injections listed on label.

ABSL2 Shedding Facility

- For the use of RG2 viral vectors in animals.
- Lab personnel label cages with a biohazard label.
- **Lab personnel** ONLY care for animals for 2 days post-injection.
  - LARC staff is only involved in visually inspecting health status of animals.

- After 2 days, lab personnel will remove the label and put animals in clean cages and LARC will take care of the animals.

Names of RG2 viral vectors & date of injections listed on label.

ABSL2: PSB XXX

BIOHAZARD

HAZARDS:

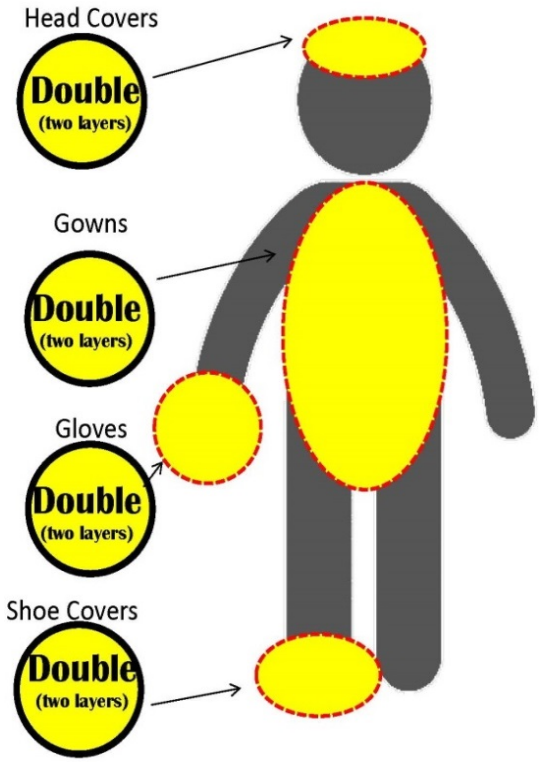
Risk Group 2 bacteria, viruses, fungi, human materials

UCSF Exposure Hotline: 353-7842

	Name	Phone
RESPONSIBLE INVESTIGATOR	Various PIs	
ALTERNATE	Various Alternates	

PERSONAL PROTECTIVE EQUIPMENT (PPE)
***MUST* BE DONNED PRIOR TO ENTRY**
(SEE BELOW)

*Note: Remove **outer** layer before exiting the room*



ABSL2 Viral Shedding: PSB XXX

BIOHAZARD

HAZARDS:

Lentivirus, Adenovirus, Risk Group 2 Retrovirus

***NOTE:** This room is approved for viral shedding.*

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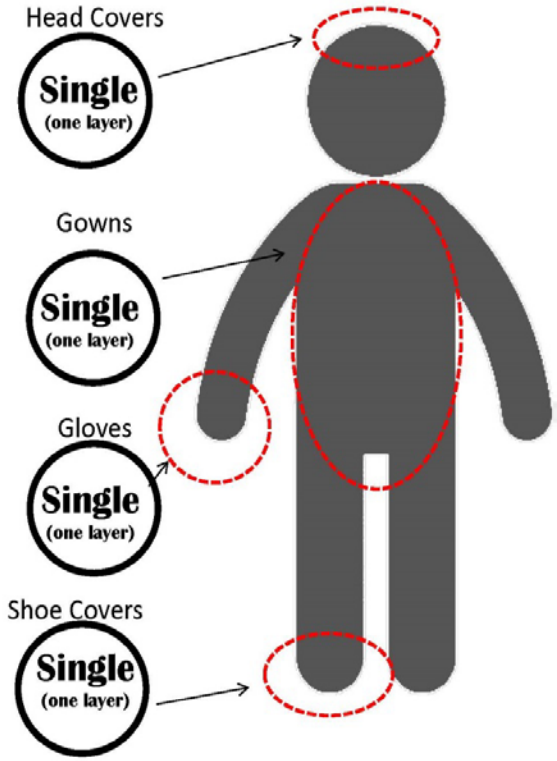
	Name	Phone
RESPONSIBLE INVESTIGATOR	Various PIs	
ALTERNATE	Various Alternates	

PPE REQUIRED (SEE BELOW)



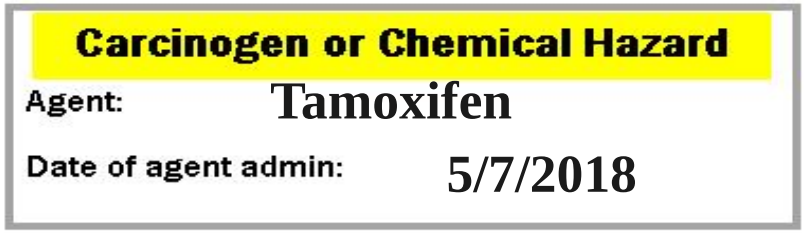
Safety Procedures for Biological Toxins

- Biological toxins used in animal research: Pertussis toxin, Diphtheria toxin, etc.
- Lab personnel will prepare biological toxins in their labs and bring only small amount(s) to LARC facility.
- Biological toxin-treated animals are housed in regular animal rooms.
- Lab personnel ONLY care for animals for 7 days post-injection.
  - Names of biological toxins (e.g. pertussis toxin, diphtheria toxin) & date of injections will be listed on the label.
  - LARC staff is only involved in visually inspecting health status of animals.

- After 7 days, lab personnel will remove the label and put animals in clean cages and LARC will take care of the animals.
  - Lab personnel dispose of all dirty bedding as biohazardous waste.

Safety Procedures for Hazardous Chemicals

- Lab personnel will prepare chemical(s) in their labs and bring only small amount(s) to LARC facility.

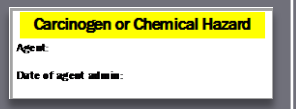


- Chemically-treated animals are housed in regular animal rooms.

- Lab personnel ONLY care for animals for 7 days post-injection.
  - Names of particularly hazardous chemicals (e.g. tamoxifen, 5-FU) and date of injections will be listed on the label
  - LARC staff is only involved in visually inspecting health status of animals.

- After 7 days, lab personnel will remove the label and put animals in clean cages and LARC will take care of the animals.
  - **Lab personnel dispose of all dirty bedding as chemical waste.**

Hazardous Materials Use in Animals

Materials Used in Animals	Room Type	Labels	PPE	Shedding Period	Bedding Disposal
Risk Group 2 infectious agents & human materials	ABSL2		Double (Note: Single PPE if conventional facility)	Continuous	Biohazardous Waste
Risk Group 2 viral vectors	ABSL2 Shedding		Single	48 Hours	Biohazardous Waste
Biological Toxins	Regular room		Single	1 Week	Biohazardous Waste
Hazardous chemical or chemotherapy Drugs	Regular room		Single	1 Week	Chemical Waste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