On your smartphone, go to the following website: pollev.com/ucsf. Follow instructions on the page. Enter your FULL NAME and your PI.

Preparing For the UCSF AAALAC Site Visit: October 15 – 18, 2018

Laboratory Animal Resource Center (LARC)
Institutional Animal Care & Use Committee (IACUC)
Office of Environment, Health & Safety (EH&S)

UCSF Faculty, students, staff
For your convenience, we have written notes available in English, Japanese and Mandarin at the table where you entered.

We also have copies of the quiz on paper at the door where you came in. Please hand it in when you leave so we give you credit for attending.

What is AAALAC?

AAALAC International enhances life sciences by promoting the responsible treatment of animals used in research, teaching and testing through voluntary accreditation and assessment programs.

AAALAC’s Dual Focus:

Our animals’ health and welfare
Our workers’ health and safety
UCSF has Full Accreditation from AAALAC --- Let’s keep it!

- Allows collaborations with other universities and commercial companies
- Shows the world our animal care meets the standards
- Accreditation is required by some funding sources
- UCSF was on probation status in the past --- as a team we can keep Full Accreditation!

AAALAC’s Review of UCSF

Every three years, a team of scientists & veterinarians visits UCSF: next site visit: **October 15 – 18, 2018**

- They visit every LARC facility
- They visit most labs that house animals or conduct animal surgery
- They interview UCSF animal workers about their work --- possibly YOU

Outcomes: **Continued Full Accreditation** is our goal!
### Areas of special concern

<table>
<thead>
<tr>
<th>ANIMALS</th>
<th>HUMANS</th>
</tr>
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<td>Surgery &amp; Pain management</td>
<td>Allergies to animals, fur, etc.</td>
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<td>Protocols</td>
<td>Chemical safety incl. Isoflurane</td>
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<td>Animal housing in &amp; out of LARC</td>
<td>Biohazards in &amp; out of LARC</td>
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<td>Training</td>
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<td>Documentation</td>
<td>Signage &amp; personal protective equipment (PPE)</td>
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### Training ---- why you are here today

- Today is a REMINDER of things you already should know from LARC, IACUC, Occ Health, and EH&S training, and from following your IACUC protocol and your safety authorizations (BUA, RUA, CSA)

- We are discussing some common problems, and things our site visitors may ask
Quiz #1: Colored cards, tags, and stickers on Rodent Cages – Match the color to its meaning or meanings

KEY

A) Pink
B) Green
C) Red
D) Yellow
E) White

1. New litter – with wean date
2. Sick animal
3. Surgery
4. Mouse or Rat lives alone
5. Biohazardous agent
6. Veterinary treatment card
7. Chemical hazard

What Color card does a LARC animal caregiver place on the cage of a Sick Animal who has a Health Report?
What Color card to YOU as a Lab Member place on the Cage of an Animal who has had Surgery?

**Surgery**

| Pink | Green | Red  | Yellow | White |

What Color card to YOU as a Lab Member place on the Cage of an Animal who has had Surgery?

**Biohazard**

| Pink | Green | Red  | Yellow | White |
RED cards help you find animals LARC has identified as ill or injured.

- When LARC staff have a concern about an animal’s health, they tag the cage, send you an electronic notice, and contact the veterinary staff.
- Follow the instructions, and LEAVE the tag on the cage.

Always Document Rodent Treatments!

- Don’t Forget: You must date and initial each treatment!
- Remember: You must treat often – follow LARC’s instructions!
Green Tags for Surgery

- Tag the cage for 7 to 14 days so that you, your lab mates, and LARC know which animals need a special eye and special care.

Pink tags - singly housed rodents:
Do not reuse pink tags, dates must be accurate.

“Last animal” is the remaining animal from a cage that had more but the others have been removed.

“Protocol Approved” – some projects do require single housing --- must be approved by the IACUC.

White Weaning Tags:
Lab researcher must fill out tag if extended weaning (up to 28 days) is required.
Hazard tags: let LARC know what you’ve got in your animal cages

**Biohazard, Carcinogens, Viral shedding, and Toxin** cages all need labels with AGENT and DATE of administration.

Use an Agent Name that others can understand –
Labels are for everyone’s knowledge and safety

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**Quiz #1: Colored cards, tags and stickers on Rodent Cages – Match the color to its meaning**

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6. Veterinary treatment card  
7. Chemical hazard
Quiz #2: The LARC Animal Technician decides this cage needs to be changed. What should the technician do?

A. Wait until the Biohazard tag is gone before working with these mice.
B. Page the veterinarian to open the labeled cage.
C. Contact the lab members to change the cage.
D. Nothing. Biohazard cages must never be opened while the label is on.

You are a LARC Animal Technician taking care of mice in a standard room - Which of the following tasks are you NOT responsible for?

- Wait until the Biohazard tag is gone before working with these mice.
- Scan the cage if cage needs to be scanned.
- If cage needs to be cleaned, page the lab members.
- If cage needs to be changed, contact the lab members.

Start the presentation to see the content. Still trouble content? I visited the app or get help at Poll Everywhere.
Quiz #2: The LARC Animal Technician decides this cage needs to be changed.

What should the technician do?

A. Wait until the Biohazard tag is gone before working with these mice.
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D. Nothing. Biohazard cages must never be opened while the label is on.

Except in BSL-2 room and some special cases, LARC staff do not handle your animals when they have safety and hazard labels.

Quiz #3: What must I wear???

3A: True or False: I must wear what the sign on the door says to wear

3B: What does this sign tell you to wear?
A. Head cover, laser eyewear, gown, gloves, and shoe covers
B. Head cover, gown, gloves, and shoe covers
C. Head cover, surgery mask, gown, gloves, and shoe covers
D. Gown and gloves
True or False? I must wear what the PPE sign on the door says to wear

True □ False □

What does this sign tell you to wear?

Head cover, Head covers, Head covers, Gowns and
laser goggles, gowns, surgery gloves
goggles, gowns, shoe covers, gloves, and
shoe covers
Quiz #3: What must I wear???

3A: True! I must wear what the sign on the door says to wear

3B: What does this sign tell you to wear?

A. Head cover, laser eyewear, gown, gloves, and shoe covers
B. Head cover, gown, gloves, and shoe covers
C. Head cover, surgery mask, gown, gloves, and shoe covers
D. Gown and gloves

Read the Sign!
Some rooms have special requirements

This is the sign for a ABSL-2 room in the Barrier.
In this room, wear:
✓ Double gowns
✓ Double gloves
✓ Double shoe covers
✓ Double head covers
Personal Protective Equipment – PPE
What to wear for animal and human health

For the Animals:
- Prevent infections from entering animal barrier facilities
- Prevent infections during animal surgeries

For the People:
- Protect yourself and others from animal allergens
- Protect people from chemical hazards
- Protect people from biological and toxin hazards
- Protect yourself from physical hazards such as lasers and radiation
- Protect yourself from animal infections and animal bites

For the Animals:
- Prevent infections from entering animal barrier facilities
  - Wear the posted PPE to enter the Barrier.
- Prevent infections during animal surgeries
  - Surgeons wear masks and clean lab coats. Wear gloves (usually only large-animal surgeons wear true sterile surgical gloves). For rodents, wear clean gloves but remember they are not sterile.
Personal Protective Equipment – PPE
What to wear for human health

For the People:

- **Allergens:**
  - Wear PPE as posted in animal facility. Discard PPE you wore to handle animals so you do not spread allergens.
  - Extra PPE for Animal Biosafety Level 2 or ABSL 3 areas
- **Respiratory:**
  - Specialized respirator when Occ Health and EH&S advise
- **Eye Protection:**
  - Goggles or safety glasses for splash risks. Laser eyewear if needed.

Respiratory PPE: if you have allergies, and to prevent developing allergies

- Follow the PPE signs on the facility entrance & the room door
- Surgery and dust masks are NOT adequate protection for people with rodent allergies.
- True respirators can reduce allergen exposure — these require a fit test, training, evaluation by Occupational Health and EH&S, ongoing surveillance of your health. CONTACT EH&S

**True Respirator:**
_Individually fitted_
Quiz #4: Avoid exposure to animal allergens – even if you are not allergic

All of the following items or actions limit the spread and exposure of allergens EXCEPT for:

A. A cheap dust mask from Amazon
B. A true respirator, after a fit test with EH&S
C. Using a HEPA-filtered vacuum cleaner for animal fur clippings
D. Changing soiled cages in a change station with the blower ON
E. Reporting your animal and other allergies on your animal Medical Health Surveillance (MHS) questionnaire

All of the following items or actions limit the spread and exposure of allergens EXCEPT for:

A cheap dust mask from Amazon    A true respirator, after a fit test with EH&S    Using a HEPA-filtered vacuum cleaner for animal fur clippings    Changing soiled cages in a change station with the blower ON    Reporting your animal and other allergies on your animal Medical Health Surveillance (MHS) questionnaire
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Working safely with hazardous agents

What is required when working with hazardous agents?

- UCSF Authorizations:
  - Biohazards: Biological Use Authorization (BUA)
  - Ionizing Radiation: Radiation Use Authorization (RUA)
  - Controlled Substances: Controlled Substance Authorization (CSA)
- Appropriate engineering controls (chemical fume hood, biosafety cabinet, etc.)
- Personal Protective Equipment (PPE)
- Written Standard Operating Procedures (SOPs)
- Documented training on the hazards and precautions
- Appropriate hazardous agent storage and disposal procedures.
Animal Surgery, Anesthesia, Analgesia

- **Sterile surgery**, extra important when implanting or attaching pumps, cannulas, electronics
- **Anesthesia**: Enough to make the animal unconscious, BUT do not over-dose
- **Analgesia**: To reduce animal pain, even if you are not there to see their pain
- **Supportive care** includes warm fluids, warming pads, post-surgical housing that allows for warmth and easy access to food and water. Check surgical site daily.
- **Safe handling** of needles and sharps, and of anesthetic gases for human health and safety
- **Documentation**, anesthesia and surgery and drug records

---

**Sterile surgery --- ways to reduce infections in your animals**

- Clean, uncluttered surgery space, table-top
- Clean lab coat; surgeon’s mask; gloves
- Sterilized instruments and implants
- Remove fur or feathers
- Disinfect skin (alcohol alone is not sufficient)
- Drape with sterile food wrap like Press-n-Seal
- Use your instrument tips only: do not touch tissue with your gloved hands
- **ADD LINK to IACUC guidelines**
Quiz #5: One of these rooms is almost ready for a mouse surgery; choose the room:

A. This nice clean uncluttered room

B. This horrible messy room
Quiz #5: One of these rooms is almost ready for a mouse surgery

A. This nice clean uncluttered room

Sterile surgery:
Wear mask and clean lab coat
Recover animal in a warm cage
Monitor incision; remove sutures or clips

Remove wound closures
10 - 15 days post-surgery
Sterile surgery:
Start with autoclaved instruments
Clean space, separate from recovery cage and from animal fur-removal space

Quiz #6: “Tips-only” rodent sterile surgery
Instrument tips are sterile, and can come in contact with animal tissue; handles are not sterile.
Quiz: What can you touch with non-sterile gloves?
Quiz #6: “Tips-only” rodent sterile surgery
Answer: A only! You touch the handles only!

Instrument tips are sterile, and can come in contact with animal tissue; handles are not sterile. Rests the tips on sterile surface only.

Just like tissue culture, the **handles are not sterile**, and you can touch those with your gloved hand.

Do not handle animal tissue with your bare hands or non-sterile gloves
Sterile Surgery:
- Hot-bead sterilizer during surgery session
- Remove fur or feathers
- Disinfect with chlorhexidine/iodine alternating with ethanol

Animal welfare for Surgical animals
- **FOLLOW** your PROTOCOL for anesthesia and analgesia doses
- **Warmth**: heated pad during surgery, and under recovery cage
- **Hydration**: Warm sterile saline
- **Food/water** easy access; good nesting material
- **Daily check**: x 3 days

- **AAALAC site visitors** do look at anesthesia/analgesia records from labs and do expect to see full compliance with **Section I of the Protocol**
- **If you are unsure** of your commitments or how to document them, contact the IACUC office for help
Quiz #7: What are your analgesic commitments?

Protocol Section I says a mouse who has surgery get these analgesics:

<table>
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<th>Dose Range (mg/kg)</th>
<th>Route</th>
<th>Frequency / Total Duration</th>
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<td>0.5% Lidocaine and/or 0.25% Bupivacaine</td>
<td>Not to exceed 7 - 8</td>
<td>Local infiltration at surgical site</td>
<td>Once at time of procedure</td>
</tr>
<tr>
<td>Buprenorphine (sustained release)</td>
<td>1.5 mg/kg</td>
<td>SQ</td>
<td><strong>once</strong> at time of procedure</td>
</tr>
<tr>
<td>Meloxicam</td>
<td>5 - 10</td>
<td>SC or IP or PO</td>
<td><strong>Once</strong> at time of procedure and <strong>second dose</strong> the next morning</td>
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</tbody>
</table>

Each mouse gets a total of:

A. 2 doses of buprenorphine and 2 doses of meloxicam
B. 1 dose of buprenorphine, meloxicam only if surgeon wants to
C. 1 dose of buprenorphine and 2 doses of meloxicam
D. 2 doses of buprenorphine and 1 dose of meloxicam
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Each mouse gets a total of:
A. 2 doses of buprenorphine and 2 doses of meloxicam
B. 1 dose of buprenorphine, meloxicam only if surgeon wants to
C. **1 dose of buprenorphine and 2 doses of meloxicam**
D. 2 doses of buprenorphine and 1 dose of meloxicam

Document your analgesic pain medications:
In this example: Follow the protocol and administer:
1 dose **Buprenorphine**; 2 doses **Meloxicam**
1 dose **Lidocaine/Bupivacaine**

- In this example, the animal gets **Bupivacaine**, **Buprenorphine** & **Meloxicam** at the time of surgery
- The following morning, the animal receives a second dose of **Meloxicam**
Quiz #8: Pain Management after surgery

Your **protocol** calls for pain medication on the morning after surgery for all animals, but your animal looks pretty good, just a little **squinting**:

You should:

A. Discontinue pain medications immediately and document it
B. Call a veterinarian immediately
C. Follow your protocol: administer medication & document
D. Discontinue “day after” pain medication for all animals on protocol
Pain can be hard to Diagnose! At UCSF, we proactively treat pain when expected, not just when we see and diagnose it.

- **Video of mouse in pain:** In this case, you would not see signs of pain if just looking at mouse sleeping with cage-mates.

- **This mouse does not show pain until 21 seconds into the video --- do you watch every mouse for that long?**

Quiz #8: Pain Management after surgery

Your protocol calls for pain medication on the morning after surgery for all animals, but your animal looks pretty good, just a little squinting:

You should:

A. Discontinue pain medications immediately and document that

B. Call a veterinarian immediately

C. **Follow your protocol: administer medication & document**

D. Discontinue “day after” pain medication for all animals on protocol

Note: “Orbital tightening” (squinting) can be a sign of animal pain.
Quiz #9: Rodent Anesthesia and Surgery – Human health and safety.

MATCH the hazard (left) to recommended ways to minimize it (right)

1) Isoflurane exposure when you open the induction chamber to take the mouse out.

2) Needle stick to your finger

3) Isoflurane exposure while animal is in nosecone mask

4) Splash to eye while injecting viral vectors or other hazardous agents

A. Wear eye protection (goggles) when handling hazardous liquids

B. Use a nosecone that fits the mouse, and weigh the charcoal canister at the start of every surgery session

C. Induce anesthesia in a fume hood, or flush isoflurane from the induction chamber

D. Do not recap needles for disposal!!
Isoflurane safety:

- Work in a chemical fume hood when possible
- Flush chamber before opening
- Exhaust to fume hood or use a charcoal canister
- Weigh the canister with every use
- Good seal around rodent’s face
Isoflurane safety: Protect your Health

Updated EH&S Guidance:

- Maintain your equipment
- Fill the vaporizer safely
- Fume hood or localized exhaust systems are best
- Low-flow oxygen (.5 – 1 L / min)
- Flush the induction chamber with oxygen for 5 -10 seconds prior to opening it
- Weigh charcoal canister; position it correctly
- Dispose as chemical waste
- EH&S can monitor your exposure levels on request

tiny.ucsf.edu/isoflurane

Safe Sharps Disposal:
Do not recap needles for disposal
Do not overfill the Sharps box
Almost full!
time to contact EH&S for pickup

1) Isoflurane exposure when you open the induction chamber to take the mouse out.

2) Needle stick to your finger

3) Isoflurane exposure while animal is in nose-cone mask

4) Splash to eye while injecting viral vectors or other hazardous agents

A. Wear eye protection (goggles) with hazardous liquids

B. Use a face mask that fits the mouse, and weigh the charcoal canister at the start of every surgery session

C. Induce anesthesia in a fume hood, or evacuate isoflurane from the induction chamber

D. Do not recap needles for disposal!!

Quiz #9: Rodent Anesthesia and Surgery – Human health and safety.

MATCH the hazard (left) to recommended ways to minimize it (right)
Quiz #10: Who are you going to call?

1) I want to report an Animal Welfare Concern.
2) My fish is sick and it's Saturday night! I need a vet now!
3) Ouch! I got a needle stick! The mouse bit me!
4) I want to do some pilot studies today and my PI forgot to put them in the protocol.
5) I want to wear a respirator.

On-Call Vet: 415/502-8687

Animal Care and Use Concerns
If you have a concern regarding the treatment of an animal, please contact one of the following:

- IACUC Office & Chair: 415-476-2037; Fax: 415-476-7581; Box 8647
- EHS Office: 415-358-8622

Needlesticks, Lacerations & Splashes
Call 353-7842 (STIC)

UCSF Exposure Hotline
Blocking overshoots your suppressed exposure
If you have a concern regarding the treatment of an animal, please contact one of the following:

- UCSF Office of Environment, Health and Safety: 415-353-7842 (STIC)
- EHS Office: 415-358-8622

Start the presentation to see the content. Get the free app or visit helix.com/app.
Quiz #10: Who are you going to call?

- I want to report an Animal Welfare Concern – Report concerns, anonymously or confidentially.
- I got a needlestick, mouse bite or other urgent exposure: 24/7 coverage.
- My fish is sick and it’s Saturday night! I need a vet now! 24/7 on-call vet service.
- I want to wear a respirator: EH&S will evaluate & train you.
- I want to do some pilot studies today and my PI forgot to put them in the protocol. Contact the IACUC office: do not go off protocol.
Common compliance errors

- Unapproved Pilot Studies
- Not following the Endpoints and Monitoring in Section J
- Using drugs, food, and materials past their expiration date
- Diluted controlled substances stored unlocked (and past expiration)
- Departures from approved anesthesia, analgesia and pain management for animals
- Performing a “dehiscence repair” [surgical sutures or clips that fail] without protocol approval and surgeon training

UCSF has Full Accreditation from AAALAC --- Let’s keep it!

- It's a TEAM effort and every one of us can contribute.
Questions?

Ask Now !!!

Or contact us:

https://iacuc.ucsf.edu

https://larc.ucsf.edu

https://ehs.ucsf.edu/environment-health-and-safety