

# Laboratory Animal Coordinator (LAC) Lecture

*Presented by the UNC IACUC  
Office of Animal Care and Use (OACU)*

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THE UNIVERSITY  
of NORTH CAROLINA  
at CHAPEL HILL



# Summary

- Overview (IACUC, OACU, protocols)
  - Requesting animal research
  - Protocol review process
- Laboratory Animal Coordinator (LAC) Responsibilities
  - Know/use ACAP
  - Documentation
  - Training & Compliance
  - EHS-related
- Inspections
  - Types
  - Topics covered, categories of comments
  - Documentation, postings
  - Self-reports

# Overview of IACUC, OACU, Protocols

- Institutional Animal Care and Use Committee (IACUC)
- Requesting Animal Research
- Protocol Review Process



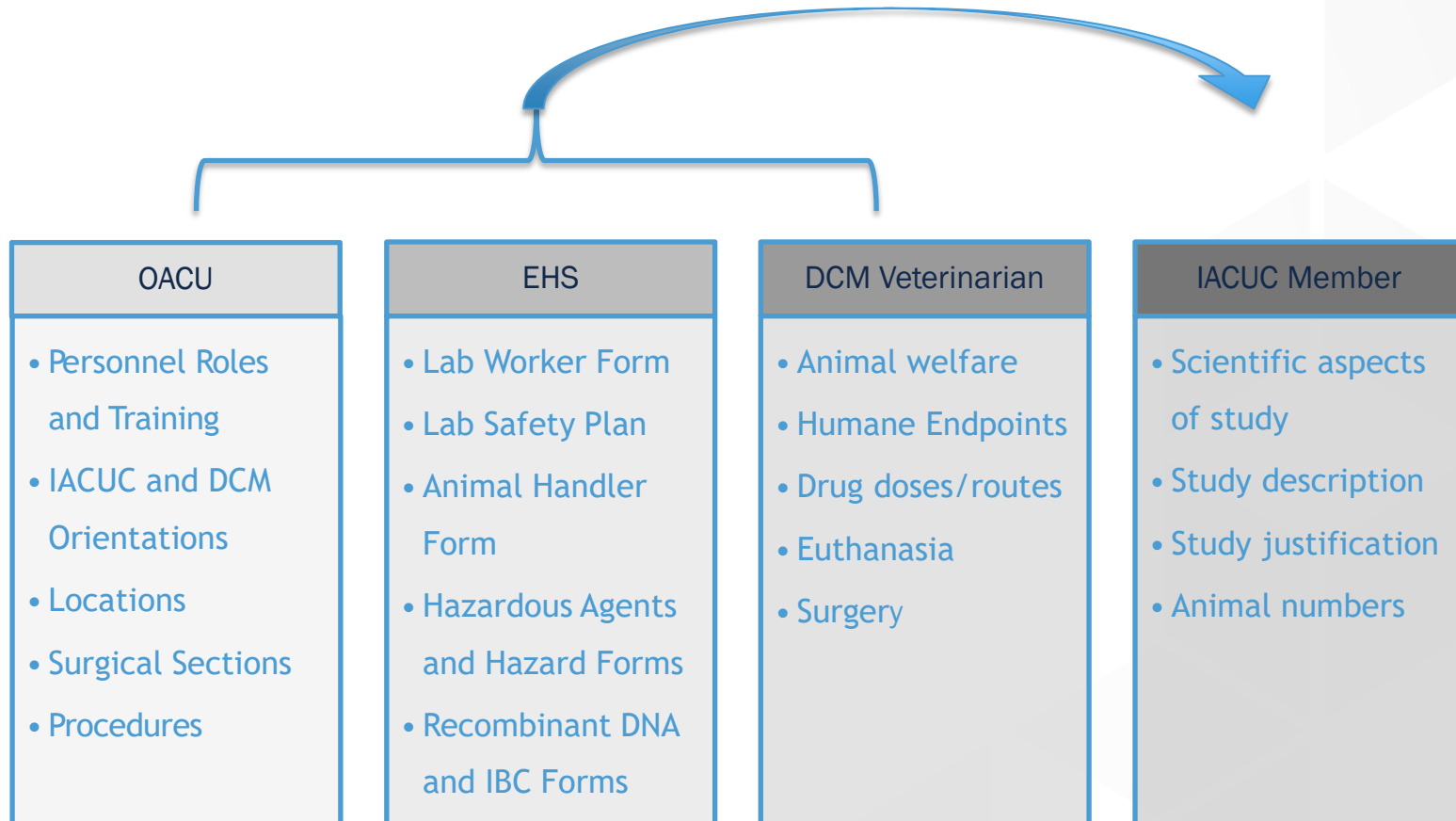
# UNC IACUC

- Responsible for oversight, assessment of animal care and use program
- Supported by Office of Animal Care and Use (OACU)
- 5 members minimum (NIH requirement):
  - Veterinarian
  - Practicing scientist
  - Non-scientist member
  - Non-affiliated member
- Monthly meetings to review program, **protocols**





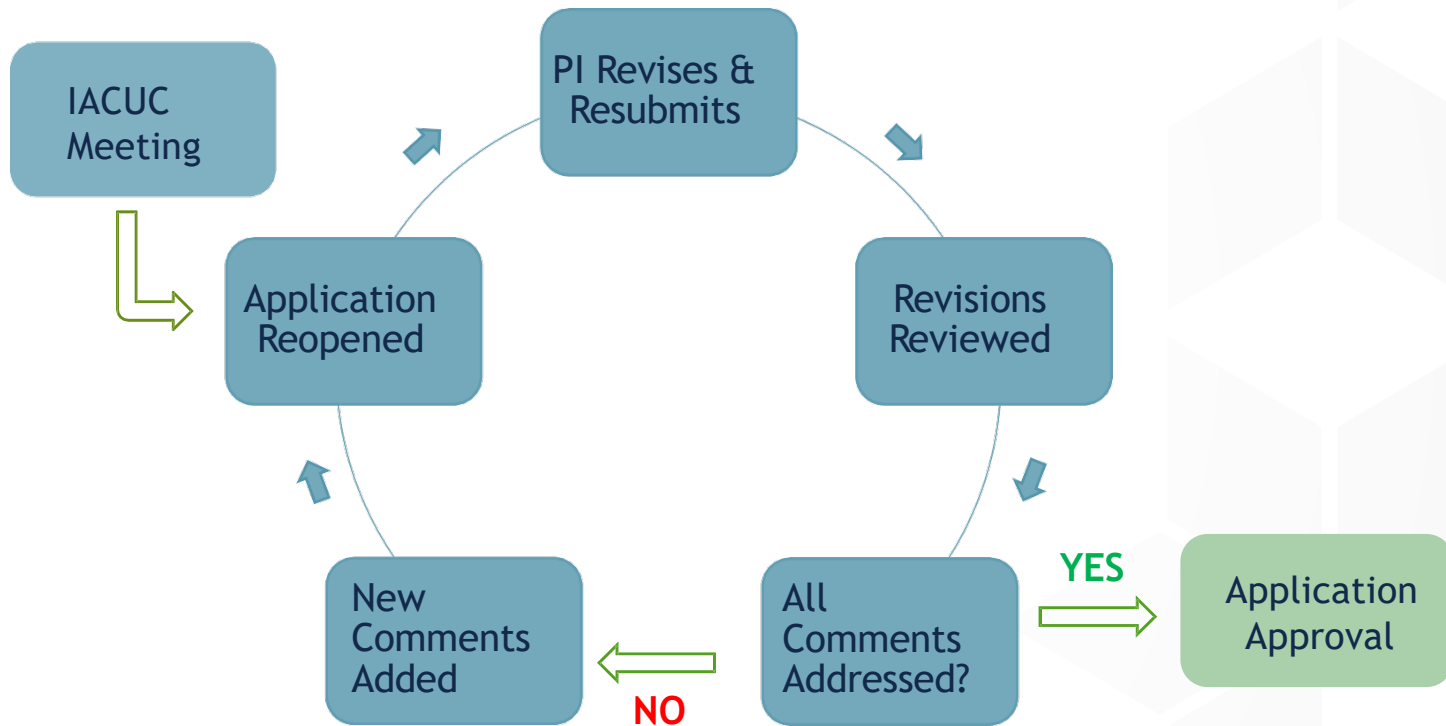
# Protocol Review Process



- *This is not a comprehensive list & there is often overlap between reviewers*



# Post-IACUC Meeting Process





# Protocol Review Process – Important Dates

## Submit IACUC applications on time!

- Due by 15<sup>th</sup> of the month *prior* to the expiration date
- Submit continuation applications a month early (~ 10 wks prior to expiration)
- Avoid expiration while actively funded or animals in-house



# Amendments (Post-approval)

Changes to an approved protocol must be approved by the IACUC prior to implementation!

## Common amendments

- Personnel and/or techniques
- Locations
- Anesthetics or analgesia
- Euthanasia methods
- Adding animal numbers

## Helpful links

- ✓ [Amendment Guidelines](#)



# Laboratory Animal Coordinator (LAC)

- Know/use ACAP
- Documentation
- Training & Compliance
- EHS-related



# Laboratory Animal Coordinator (LAC) Program

- Implemented 2004
- UNC IACUC – ensure animal handlers receive hands-on training
  - Serve as main contact/manager of lab
  - Train others in animal handling techniques

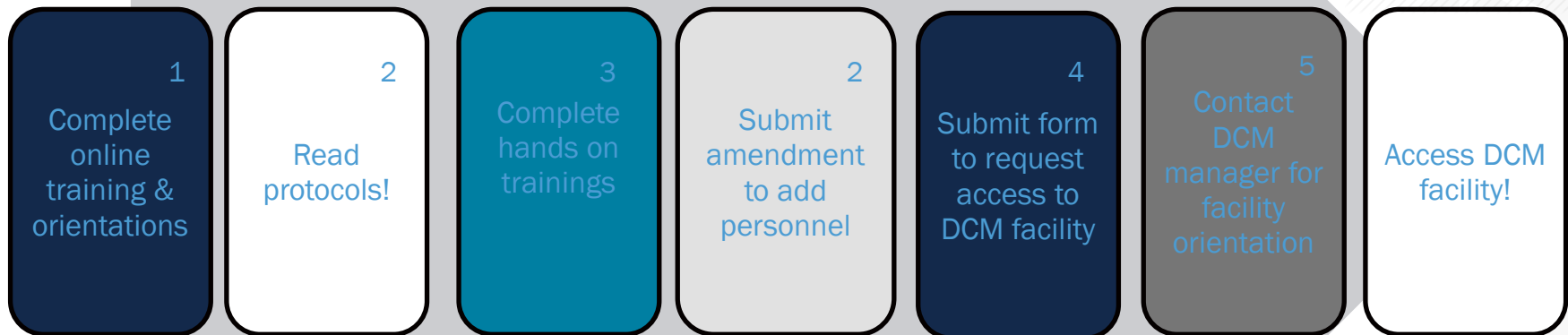
## Useful links

- ✓ [Step by step instructions for becoming an LAC](#)
- ✓ [Background information on the LAC Program at UNC](#)



# To Become an LAC

- Complete orientations, forms, training
- Attend LAC lecture
- Receive hands-on training, proficiency assessment
- Attend Mouse Cage Density Lecture (if breeding)
- Submit amendment to add LAC





# LAC Responsibilities

- Liaison between lab and the IACUC
- Coordinate animal activities
- Ensure lab members properly trained in hands-on procedures
- Update necessary signs/postings
- Assist PI to maintain compliance with
  - animal welfare rules/regulations
  - approved protocols
- At least one *approved* LAC required on all active IACUC protocols
  - *BEFORE* leaving, inform IACUC and add new LAC to protocol



# Using ACAP (Animal Care Application) as an LAC

- ACAP outlines proposed research in terms a lay person would understand
- Main sections
  - Research personnel and training
  - Animal housing
  - Animal species and number justification
  - Pain categories of animals
  - Objectives and rationale for study
  - Surgery, tumors, behavior
  - Tissues, fluids collected
  - Humane endpoints, euthanasia
- **Read your protocol prior to performing any animal work!**

## Helpful link

- ✓ For more details on the UNC [ACAP Online Application](#)



# Required Online Training/Orientation

- Protocol approval contingent on completion of orientation and training for all personnel on application
  - Research Profile
  - Lab Worker Registration
  - Animal Handler Profile – annually
  - DCM Orientation – every 3 years (if animals housed in DCM facilities)
  - IACUC Orientation - once

\*Complete through [Animal Research Registration](#)



# Online Requirements

## >> Protocol Management :

Project Title: Colony Management Core

Species: **Mouse**

IACUC ID:

PI:



[View Current Application](#)  
(including approved amendments)



[Print IACUC Signature Page](#)

## >> PERSONNEL

	Research Profile	Lab Worker Form	Animal Handler	IACUC Orientation	DCM Orientation	Training
<b>Researcher (PI)</b>	✓	✓ N/A	✓ N/A	✓	✓ Exempt	✓
<b>Researcher * (Co-PI LAC)</b>	✓	✓	✓ Last Reviewed: 10/15/2018	✓	✓ Expires: 3/21/2022	✓
<b>Researcher</b>	✓	✓	✓ Last Reviewed: 11/20/2018	✓	✓ Expires: 3/21/2022	✓
<b>Researcher</b>	✓	✓	✓ Last Reviewed: 12/04/2018	✓	✓ Expires: 3/21/2022	✓
<b>Researcher</b>	✓	✓	✓ Last Reviewed: 01/22/2019	✓	✓ Expires: 3/21/2022	✓
<b>Researcher</b>	✓	✓	✓ Last Reviewed: 03/22/2019	✓	✓ Expires: 3/21/2022	✓



# When training is needed.....

Research Profile	Lab Worker Form	Animal Handler	IACUC Orientation	DCM Orientation	Training
✓	✓	✓ Expires: 11/12/2019	✓	✓ Expires: 2/14/2020	✓
✓	✓		✓	✓ Exempt	<u>Needed</u>
✓	✓	✓ Expires: 04/23/2020	✓	✗ Expired: 6/27/2019	✓
✓	✓	✓ Expires: 09/20/2019	✓	✓ Expires: 3/31/2020	✓
✓	✓	✓ Expires: 07/29/2020	✓	✓ Expires: 11/11/2019	✓

## Red Check:

Online training item has expired

## Yellow Check:

Online training item will expire soon

## Needed:

Hands-on training required

## Blank:

Online training item has not yet been completed





# Training - IACUC/OACU Classes

- [LAC Lecture](#) (mandatory)
- [Mouse Cage Density Standard](#)
- [Mouse Cage Density Lecture](#) (mandatory)

## Helpful links

- ✓ To register for classes: [UNC Event Registration System](#)
- ✓ For more information on classes: [Training Overview](#)



# Training - DCM Classes

- Mouse Handling and Techniques
- Rat Handling and Techniques
- Aseptic Techniques
- Voluntary Mouse Colony Management Lecture
- Rat Breeding - No Lecture required
  - Must follow UNC Rat Cage Density Standard
  - Rat Action Required Card

**\*\*\*For RAT Cages Only\*\*\***

**DO NOT REMOVE**  
FOR DLAM USE ONLY

**ACTION REQUIRED BY:**

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

1. For trio cages- the second pregnant female must be removed before her litter drops.

	1 Adult	2 Adults	3 Adults
Single litter	no limit on pups	Unlimited pups under 14 days 14 pups, 14 days or older	Trio mating- no pups 1 female must be removed before litter drops
Multiple litters	Not allowed	Not allowed	Not allowed

2. Wean pups at approximately 21-23 days.

3. After pups are weaned, recommended cage density guide- lines are based on body weight as shown in the table below.

Animals Rats in Groups	Weight, gram	Floor Area of cage/Animal, Inches <sup>2</sup>
8	<100	17
6	Up to 200	23
4	Up to 300	29
3	Up to 400	40
2	Up to 500	60
2	>500	≥70
Female + litter		124 (recommended space for the housing group)



# Training - DCM Veterinary Services

- All species other than mice and rats
  - Schedule training and certification with Veterinary Technician Supervisor at 843-3407
- Isoflurane vaporizer training
  - Schedule training – email [DCMTraining@unc.edu](mailto:DCMTraining@unc.edu)





# Training - LAC Proficiency Assessment

Assessed during hands-on rodent training classes

- I. Allowed to train and certify laboratory personnel immediately
- II. More experience required before training others
- III. Significantly more experience required before proficiency of LAC



# Training/Certifying Lab Members

- LAC may not train/certify in the following techniques:
  - Retro-Orbital Bleed
  - Retro-Orbital Injection
  - Cervical Dislocation without Anesthesia
  - Decapitation without Anesthesia
  - USDA-regulated species surgical techniques



# LAC Certification of Lab Personnel

**Animal Research Registration** UNC-Chapel Hill

HOME SEARCH PROFILES ANIMAL HANDLERS CERTIFICATIONS SURVEY BUILDER/EDITOR LOGOUT

**>> Certification Administration**

Enter the details below to certify personnel.

**>> Certify Personnel**

Last Name:

First Name:

PID:

Select a Species:

Certified by LC:

THE UNIVERSITY of NORTH CAROLINA at CHAPEL HILL

[View Certifications](#)

Select a Species:

**Techniques**

- Anesthesia - Injectables
- Aseptic Technique
- Cardiac Puncture
- Carotid Artery Bleed
- Cervical Dislocation With Anesthesia
- Cervical Dislocation Without Anesthesia
- CO2 Euthanasia with Euthanex Smartbox
- CO2 Flow Meter with Physical Euthanasia
- Decapitation With Anesthesia
- Decapitation Without Anesthesia

Hold the control key down to select or deselect items, Command/Apple key on the Mac

Certified by LC:



# Be Familiar with PPE for Animal Work

Minimum lab PPE required:

- Safety glasses/goggles
- Gloves
- Lab coats

Additional PPE based on risk:

- Puncture resistant gloves
- Surgical masks
- Respiratory protection
- Sleeve covers
- Face shields





# EHS – Check Eyewash Stations



- Labs are responsible for inspecting emergency eyewash stations
- Check/document once a month with quick (~5 sec) flush
- Caps must be in place to prevent debris accumulation





# EHS - Sharps Disposal

- Biohazard - Red containers with Biohazard symbol
  - Autoclave, dispose in regular trash
- Chemical Hazard - White containers with “Chemically Contaminated Sharps”
  - Submit ‘EHS waste pickup’ form online
- Non-hazardous - White containers with “Non-hazardous Sharps”
  - Dispose in regular trash



Chemically  
contaminated sharps



Non-hazardous  
Sharps



# EHS - Disposal of Chemicals

- Do not dispose of chemicals or medical waste in the sink
- No hazardous materials, just trace quantities associated with cleaning and washing

# IACUC Inspections

- Types of inspections
- Drug documentation
- Lab postings
- Types of housing

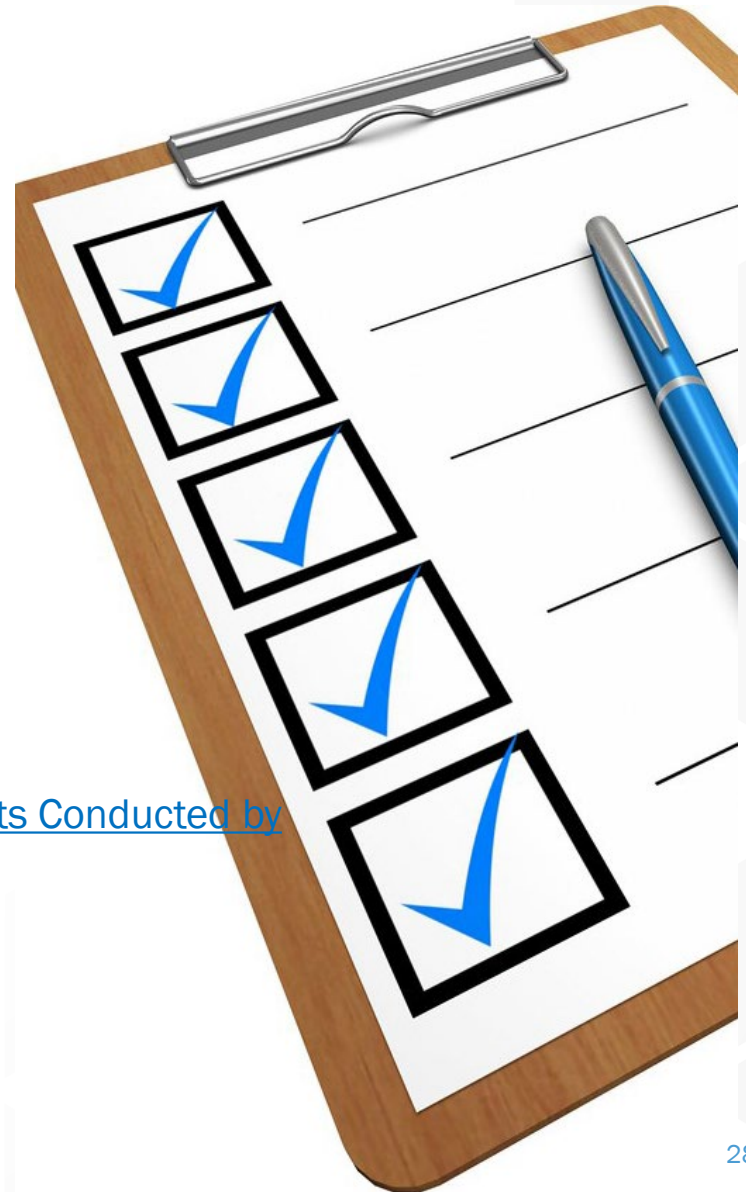


# IACUC Inspection Types

- Semiannual Investigator Laboratory
- Informational/Educational Visit
- PI-maintained Satellite Facility
- *(With/without Procedural Observation)*
  
- Semiannual DCM Animal Facility

## Helpful links

[Types and Frequency of Inspections and Laboratory Visits Conducted by the IACUC](#)





# Procedural Observation

- Procedural Observation required for studies involving
  - Surgery (survival / non-survival)
  - Behavioral with aversive conditioning
  - Pain category E
- Potential outcomes
  - No suggestions for improvement
  - Minor suggestions for improvement and/or amendments
  - Deficiencies (e.g., protocol non-compliance, etc)

## Helpful links

- ✓ [Procedural Observation Description](#)



# Inspection Topics & Questions

- General IACUC/OACU updates
- Documents/postings (e.g. Animal Concerns, Emergency Numbers)
- Health & Safety (e.g. eyewash, gas tanks)
- Animal Care (e.g. records, health issues)
- Agents Administered (e.g. controlled substances, anesthesia, analgesia)
- Physical space (e.g. impervious, cleanliness)
- Surgery details (e.g. aseptic techniques, records)

✓ [IACUC Semi-annual and Satellite Inspection Checklist](#)



# Inspection comments

## Categories

- N/A
- Acceptable/OK
- No Deficiency
- Minor Deficiency
- Significant Deficiency



## Deficiencies

- Respond with corrective action by date specified on inspection report
- Presented anonymously at monthly IACUC meeting



# Required Drug Documentation

All uses of anesthetics, analgesics, euthanasia agents **must** be documented

- **Common Anesthetics:** Isoflurane, Avertin, Ketamine/Xylazine, Pentobarbital  
Lidocaine, Bupivacaine
- **Common Analgesics:** Acetaminophen, Meloxicam, Buprenorphine, Carprofen
- **Common DEA Controlled drugs:** Ketamine, Buprenorphine, Pentobarbital

## Helpful links

- ✓ [Isoflurane Vaporizer Log](#)
- ✓ [Isoflurane Drop Method log](#)
- ✓ [Rodent anesthesia/analgesia procedure record](#) (survival surgeries)
- ✓ [Anesthesia/analgesia drug log template](#) (controlled substances)





# Required Lab Postings

- How to report animal mistreatment or animal use application noncompliance
  - **Where?** Anywhere animal work is performed
- Emergency telephone numbers
  - **Where?** Any central location(s) in the lab
- Needle safety (if applicable)
  - **Where?** Anywhere needles are used in live animals
- CO<sub>2</sub> Euthanasia (if applicable)
  - **Where?** Anywhere animals are euthanized with CO<sub>2</sub>





# Self Reports

## Non-compliance or Animal Welfare Concerns

- Unanticipated outcomes resulting in harm or death of experimental animals
- Report first to DCM Veterinary Services
- Then Office of Animal Care and Use (OACU)



# Network of Laboratory Animal Coordinators

- UNC listserv of LACs exchanging ideas, resources and experiences
  - Offer/request extra animals
  - Request expertise on special procedures
  - Questions on where to order specific supplies

<http://research.unc.edu/Offices/NLAC/>





# IACUC Standards

- Standard: Minimum acceptable limits or rules used to achieve Policy implementation, enforceable by the IACUC
- IACUC creates, reviews, revises Standards monthly
- Standards are posted on IACUC webpage under 'Important Notices' and [policies.unc.edu](http://policies.unc.edu)

## Commonly referenced UNC Standards

- [ADMINISTERED AGENTS](#)
- [RODENT BLOOD WITHDRAWAL AND TAIL BIOPSY](#)
- [RAT AND MOUSE EUTHANASIA](#)
- [DISPOSAL OF RODENT CARCASSES](#)
- [ANIMAL TRANSPORT AND BIOSECURITY](#)
- [FOOD AND/OR WATER RESTRICTION AND/OR DEPRIVATION](#)
- [WEIGHT LOSS IN RESEARCH ANIMALS](#)



# Useful Websites

- Office of Laboratory Animal Welfare  
<http://grants.nih.gov/grants/olaw/olaw.htm>
- *Guide for the Care and Use of Lab Animals*  
<http://grants.nih.gov/grants/olaw/Guide-for-the-Care-and-Use-of-Laboratory-Animals.pdf>
- IACUC  
<http://research.unc.edu/Offices/iacuc/>
- DCM  
<http://research.unc.edu/offices/laboratory-animal-medicine/index.htm>
- EHS  
<http://ehs.unc.edu/>

# Contact Information

The Office of Animal Care and Use

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Website: [UNC IACUC Homepage](#)