The Laboratory Animal Coordinator (LAC) Lecture orients newly appointed Coordinators to the duties and responsibilities of being a LAC. This lecture is mandatory for all newly appointed LAC’s and all Principal Investigators are encouraged to attend. Class size is extremely limited, so newly appointed LAC’s or PI’s are given preferential seating.

The course material is available below for downloading and referencing. For your convenience, **print a copy and bring it to the class.** Handouts are **not provided as part of the class**.
Laboratory Animal Coordinator (LAC) Lecture

Presented by the UNC IACUC
Office of Animal Care and Use (OACU)
Michael Chi, PhD
Education & Oversight Manager
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

- Personnel Roles and Training
- IACUC and DCM Orientations
- Locations
- Surgical Sections
- Procedures

- Lab Worker Form
- Lab Safety Plan
- Animal Handler Form
- Hazardous Agents and Hazard Forms
- Recombinant DNA and IBC Forms

- Animal welfare
- Humane Endpoints
- Drug doses/routes
- Euthanasia
- Surgery

- Scientific aspects of study
- Study description
- Study justification
- Animal numbers

*This is not a comprehensive list & there is often overlap between reviewers*
Post-IACUC Meeting Process

IACUC Meeting → PI Revises & Resubmits → Revisions Reviewed → All Comments Addressed?
  NO → Application Reopened → New Comments Added
  YES → Application Approval

Application Reopened → NO → IACUC Meeting
Submit IACUC applications on time!

- Due by 15th 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
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

1. Complete online training & orientations
2. Read protocols!
3. Complete hands on trainings
4. Submit amendment to add personnel
5. Submit form to request access to DCM facility
6. Contact DCM manager for facility orientation
7. Access DCM facility!
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:**

### Personnel

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<thead>
<tr>
<th>Researcher</th>
<th>Research Profile</th>
<th>Lab Worker Form</th>
<th>Animal Handler</th>
<th>IACUC Orientation</th>
<th>DCM Orientation</th>
<th>Training</th>
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- **Last Reviewed:**
- **Expires:** 3/21/2022
When training is needed.....

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<th>Research Profile</th>
<th>Lab Worker Form</th>
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**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.

<table>
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<tr>
<th>Animals</th>
<th>Rat or Mouse</th>
<th>Weight</th>
<th>Face Area</th>
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<tr>
<td>Single</td>
<td>Rat</td>
<td>&gt;500</td>
<td>&gt;750</td>
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<tr>
<td>Single</td>
<td>Mouse</td>
<td>&gt;500</td>
<td>&gt;750</td>
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<tr>
<td>Multiple</td>
<td>Rat</td>
<td>&gt;500</td>
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<tr>
<td>Multiple</td>
<td>Mouse</td>
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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.
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
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

[Image of certification administration screen]

[Image of species selection and techniques]

[Image of certification 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
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
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 anesthetia/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

• CO₂ Euthanasia (if applicable)
  • Where? Anywhere animals are euthanized with CO2
Emergency Contacts in Housing Area

- **24-hour contact** name, number for DCM animal emergencies
- Name and after-hours number posted in every animal room
- Update contact information when necessary
- Forms provided by DCM
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

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

• Guide for the Care and Use of Lab Animals

• 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

Phone: (919) 966-5569

Email: iacuc@med.unc.edu

Website: UNC IACUC Homepage