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

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

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

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

- IACUC Member
  - 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

1. IACUC Meeting
2. PI Revises & Resubmits
3. Application Reopened
4. Revisions Reviewed
5. All Comments Addressed?
6. New Comments Added
7. YES
   - Application Approval
8. NO
   - Return to Revisions Reviewed

Process flow diagram showing the steps and decision points for post-IACUC meeting revisions.
Submit IACUC applications on time!

- Due by 15\textsuperscript{th} of the month \textit{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:**

**Personnel Table:****

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<th>Researcher</th>
<th>(PI)</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:**
  - Expiration Date:
  - Training:
  - Exempt:

- **View Current Application**
- **Print IACUC Signature Page**
When training is needed.....

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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
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
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

Certification Administration

Enter the details below to certify personnel.

Certify Personnel

Last Name: 
First Name: 
PID: 

Select a Species: Mouse

Certified by LC:

View Certifications

Select a Species: Mouse

Techniques

- Anesthesia - Injectables
- Aseptic Technique
- Cardiac Puncture
- Carotid Artery Bleed
- Cervical Dislocation With Anesthesia
- Cervical Dislocation Without Anesthesia
- CC2 Euthanasia with Euthanex Smartbox
- CC2 Flow Meter with Physical Euthanasia
- Decapitation With Anesthesia
- Decapitation Without Anesthesia

Certified by LC:

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

Next  Cancel
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
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
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

• 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

![Contact Information Form](image-url)
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
  http://grants.nih.gov/grants/olaw/olaw.htm

• 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

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Email: iacuc@med.unc.edu

Website: UNC IACUC Homepage