Austin College

New Animal User Training for Faculty

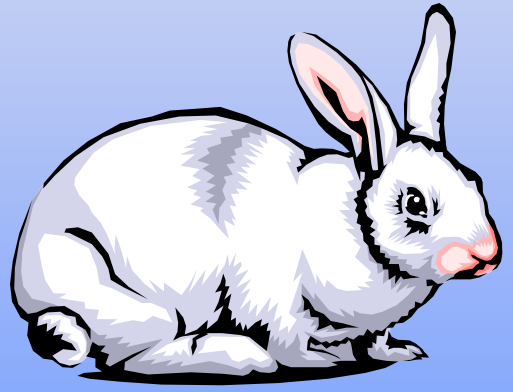
Date

Faculty Animal Care & Use Questions

- What is the Institutional Animal Care and Use Committee?
- What do I have to know about animal research?
- What facilities are available at Austin College?
- What is my role in Austin College's Animal Care program?
- What is the role of my students in the animal care program?
- What do I need to know about occupational health?
- What happens if we have animal care deficiencies?

The Importance of Animals in Biomedical Research

Because of biomedical research both humans *and* animals now have:



- Life-saving surgical procedures;
- Cancer therapies;
- Organ transplantation;
- Vaccines;
- Safe consumer products; and
- Treatments and cures for countless other medical disorders and diseases.

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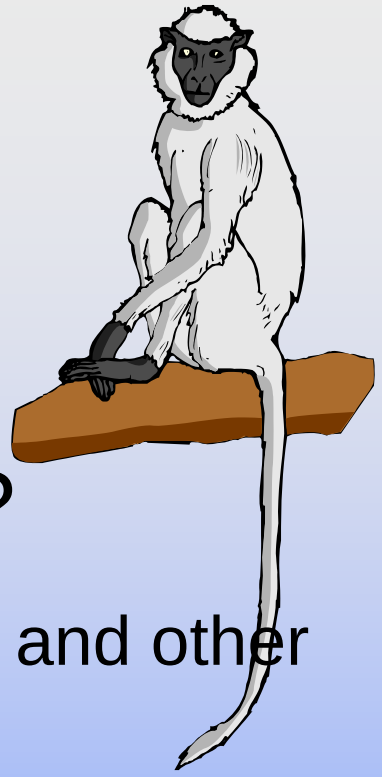

Why are animals used in research?

- organs and body systems similar to humans and other animals;
- susceptible to the same diseases that affect humans;
- short life span allows animals to be studied throughout their entire life;
- environment easily controllable to keep experimental variables to a minimum;

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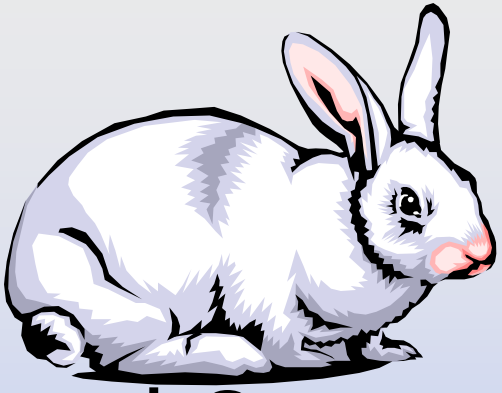

What animals are used in research?

- Laboratory mice are used in research more often than any other animal species;
- These mice, *plus* other rodents such as rats and hamsters, make up more than 90% of the total number of animals used; and
- Other animal species, *including* dogs, cats, rabbits, farm animals, fish, frogs, birds, nonhuman primates, and many others, make up the remaining 10% of animals used in research.

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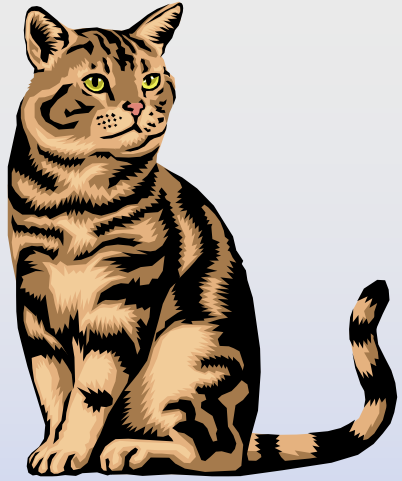

When are animals used in research?

- following literature searches and comparison of data to previous research ;
- following computer model simulations and cell and/or tissue culture research;
- following an IACUC-approved animal use protocol;
- following extensive training and education on the handling, care, and use of animals;
- but, *before* HUMAN clinical testing.

The Importance of Animals in Biomedical Research

Who cares about the research animals?

- Research institutions;
- Scientists and their research staff;
- Veterinarians, laboratory animal technicians, cagewashers, and other animal care personnel;
- Federal and local government agencies;
- Scientific organizations; and most of all,
- Patients

Austin College IACUC

By law, an institutional committee must review all aspects of the animal care and use program. This committee is most commonly referred to as the "Institutional Animal Care and Use Committee", or IACUC.

Important people to know:

1. IACUC Chairperson: Lance Barton
2. Attending Veterinarian: Gordon Brackee, DVM
3. Clinical Veterinarian(s): Brakebill Animal Hospital
4. Other IACUC members: Don Rodgers
   Lance Barton
   Patrice Parsons
   David Aiello
5. Current Animal Users: Lance Barton (Moody)
   Wayne Meyer (Moody)
   Renee Countryman (Hopkins)

Austin College IACUC

The IACUC is responsible for:

Reviewing and approving animal use by faculty for research or teaching

Monitoring the animal care and use program at the College

Remember: Animal Research is a privilege and not a right.

This system is built on trust, any serious issue of noncompliance can jeopardize Austin College's privilege to use animals.

Animal Care Regulations

The USDA and the PHS regulate animal care and use procedures according to the Animal Welfare Act (AWA) and their respective federal policies.

USDA – large mammals (not rodents)

PHS – all vertebrates

The purpose of these concepts is to minimize animal use and pain or distress while still achieving the critical scientific objectives that lead to advances in health and medicine.

USDA Pain and Distress

Level B: Breeding or Holding Colony Protocols

Level C: No more than momentary or slight pain or distress.

Level D: Pain or distress relieved with anesthetics, analgesics and/or tranquilizer drugs or other methods for relieving pain or distress.

Level E: Pain or distress or potential pain or distress that is not relieved with anesthetics, analgesics and/or tranquilizer drugs or other methods for relieving pain or distress.

Pain & Distress must be minimized at all times

Before you can use animals at Austin College, you must…

1. Contact the IACUC chair and discuss your plans.

2. Speak with one of the Animal Users who helps run the Hopkins or Moody Animal facilities about your plans.

3. Prepare and submit an animal use protocol for approval by the Austin College IACUC.

4. Document the training of both yourself and your student workers with the IACUC.

5. Purchase and prepare food, bedding, water, and housing facilities before your animals arrive.

Austin College Animal Use Facilities

Birds: Quail - Moody 322A

Rodents: Mice - Moody 324A
Rats – Moody 324B

Frogs: Moody 310 or Moody 322B

Hopkins facility has been renovated for rodent use

Field Studies & other off-campus research projects must also be approved by the IACUC.

Animal Housing Requirements

Floor Space Requirements
(per animal)

Birds: Quail – 0.25 sq. ft.

Mice: 15 sq. in.

Rats: 300-1000 sq. cm
depends on mass/size

Temperature Requirements

Birds: 61 – 81 º F

Rodents: 64 – 79 º F

All animals are to be kept on a 12-14 hour photoperiod

Minimize all disturbances and noise to the animal facility
(white noise sources may be needed)

Animal Husbandry Requirements: Food

All animals must be fed palatable, non-contaminated, nutritionally adequate food daily

Immediately dispose of moldy, insect infested, or otherwise contaminated food

Food should be stored in sealed containers and kept off the floor

Animal foods generally have a shelf-life of 6 months.

Treats may be added to the diet, but must be kept fresh and stored correctly

Texoma Feed stocks many Purina manufactured diets
Sterile diets can be purchased through LabSupply (Ft. Worth)

Animal Husbandry Requirements: Water

All animals must have access to potable, uncontaminated drinking water

- Immediately dispose of contaminated water
- When using water bottles, it is better to replace than to refill

Water and food levels should be checked daily

Animal Husbandry Requirements: Bedding

Bedding is a controllable environmental factor that can affect experimental outcomes. Check which bedding type is best for your animals and your experiments.

Bedding should remain dry between cage changes

Contaminated bedding should not come in contact with food or water sources

Bedding must be changed at appropriate intervals (varies from daily to weekly)

All used bedding and wastes should be disposed of immediately

Animal Husbandry Requirements: Sanitation

Primary enclosures should be sanitized with each bedding change (rodents once a week or more)

Enclosures with non-contact bedding or dropping catch pans need to be cleaned monthly

Hot water (160 º F) and disinfectants should be used for cleaning, all materials rinsed thoroughly

Animals with mineral deposits in excrement (rabbits) must have cages acid treated prior to disinfectant washing

Sanitation procedures should be monitored through the Rodac microbiology monitoring program (see Lance Barton)

Animal Husbandry Requirements: Sanitation

All animal facilities, tools, utensils should be cleaned and disinfected on a regular schedule.

Floor drains need to be treated with 1 cup of bleach every two weeks.

All laboratory safety rules apply when handling animals, chemicals, and cleaners in the animal housing areas

- eye protection
- gloves
- clothing protection

Animal Husbandry

Weekend and holiday care for the animals is essential

In the event of a disaster (including loss of power), make sure you are aware of what needs to be done to care for the animals.

See the IACUC for the Austin College disaster plan

Make sure you know all species specific handling procedures

Be careful to watch food and bedding supplies and order in advance. Some lab diets or litters can take 3 weeks to receive. Some bedding materials are ordered on an annual basis.

Euthanasia

All animals are to be euthanized according to AVMA recommendations, unless otherwise approved by the IACUC

Approved: CO_2 or overdose of anesthetics

Not approved: cervical dislocation or other physical means without anesthesia

Do not perform euthanasia, or any other procedure on an animal until a person experienced with the procedure has trained you, and you feel confident performing the technique.

When possible, two mechanisms of euthanasia should always be performed on each animal – make sure you verify death

Do **NOT** perform euthanasia in the presence of other animals

Surgery or Medical Care

Report any unusual behavior, injuries, or health concerns to the veterinarian.

Any unusual deaths require a veterinary autopsy

Proper use of anesthetics, analgesics, or medication requires PI supervision and training

Use only sterile needles, scalpels, and other implements with each animal

NEVER RECAP NEEDLES! Sharps containers are provided for disposal of needles, scalpel blades, etc.

Field Study Special Concerns

Animals not housed in the Austin College Facilities or wild animals are not subject to the same care and represent unique risks for student and faculty safety.

Please consider appropriate procedures for the following items:

- What to do if an animal gets injured in the field?
- What to do if a student gets injured in the field?
- How will distress be minimized?
- What additional risks to the study exist in this environment?

Please consult Laber, et al., (2007)Field studies and the IACUC: protocol review, oversight, and occupational health and safety considerations, *Lab Animal* 36:1, p27-33 and contact the IACUC chair for more information.

Animal User Protection

Health risks associated with animal research include

- Zoonotic disease
- Allergies
- Bites & Scratches
- Needle Sticks
- Chemical or Biohazard exposure
- Environmental/Laboratory hazards

Exercise CAUTION at all times when in the animal facilities

Report any indications of illness, respiratory problems, or physical trauma (ie. bites or scratches) to the nurse immediately

All student workers must complete a pre-exposure and subsequent annual health surveys with the nurse.

Animal User Protection

Level I Risk Animals:

Pre-exposure survey must be completed with the nurse's office

- Annual surveys must be completed each year

Maintain a current tetanus vaccination

Personal protection that needs to be available:

- Face masks
- Gloves
- Lab coats
- Eyeglasses
- Bouffant hair caps (microbial isolators)

Animal User Training

In addition to completing this training, you should also examine the following online training services.

www.aalaslearninglibrary.org

Complete one of the recommended free courses (contact Lance Barton) and have your exam results documented and sent to the IACUC. There are a number of courses and exams from working with the IACUC to specific species procedures.

www.iacuc.org

There are a number of links to other institutions and organizations that provide information on animal care and use in the laboratory. There is a lot of valuable information here, but may require some time to explore.

Animal Care Deficiencies

Any serious deficiencies in animal care can cost Austin College its privilege to perform animal research

If you see any deficiency in animal care and/or husbandry, you must report the deficiency to the IACUC Chair, to Mike Imhoff, VPAA or anonymously online through the IACUC website.

No person reporting a deficiency should be approached, reprised, or discriminated against.

The IACUC and our attending veterinarian will inspect all animal facilities and procedures semi-annually and you will be apprised of any deficiencies or policy changes.

Federal Policies and Regulations

If you have any questions about the federal laws or the Austin College IACUC policies there are a number of references you may consult.

- The Guide for the Care and Use of Laboratory Animals (available online)
- Public Health Service Policy on Humane Care and Use of Laboratory Animals (available online)
- Animal Welfare Act and Animal Welfare Regulations (USDA) (available online)

- National Library of Medicine
- National Agricultural Library
- American Association for Laboratory Animal Science (www.aalas.org)

Animal User Education

If you have any questions or need assistance preparing to use animals on campus for research or teaching purposes, please consult the references listed previously. Additional resources available through the Austin College IACUC include:

Laboratory Animal Management of Rodents

Occupational Health and Safety in the Care and Use of Research Animals

Guidelines for the Care and Use of Mammals in Neuroscience and Behavioral Research

Recognition and Alleviation of Pain and Distress in Laboratory Animals

Education and Training in the Care and Use of Laboratory Animals

Questions/Comments/Concerns

Thank you for your patience and attention

Please refer any questions, comments, or concerns to Lance Barton