Animal Handlers Part 3 - Researcher Annual Refresher Training

Animal Handlers Part 3 (AH3), Annual Refresher Training, must be completed by the end of January 2016 to reduce delays in protocol and amendment processing. Regardless of the number of approved protocols, AH3 is only required once each calendar year. All animal care staff and research staff on active protocols will receive e-mail notification from OESO and will be directed to the training web page (safety.duke.edu)

AH3 does not replace or revisit the initial training (Animal Handler’s 1 & 2) required of new research personnel. AH3 focuses on compliance trends in the Duke animal program and highlights those where we have had more concerns or where the IACUC believes additional attention is warranted.

AH3 was designed by the IACUC as a means of educating to prevent serious non-compliances while providing practical and brief updates to changes in federal guidance and reminders of institutional obligations for assuring compliant animal care and use.

♦ AH3 is brief, and shouldn’t take more than 45 minutes to complete, including the quiz.

The Web version includes a brief quiz.

Wishing you safe and successful research outcomes.

PI MANAGED FACILITIES: REPORTING HEALTH CONCERNS

If you work in an area that has been approved by the Duke IACUC as a PI-Managed facility, you are responsible for reporting animal health issues to the DLAR Veterinary Staff. When animals appear ill or injured, or when there are abnormal changes in the animal’s behavior, PI-Managed operations are obligated to report the animal to the DLAR Veterinary Staff. Veterinary support can help diagnose, treat, and make preventative recommendations for sick animals.

The steps for veterinary assistance:
• Page the ‘Veterinarian On-Call’ at 970-9410 and wait for a response. If there is no response after 5-10 minutes, page the Veterinarian again.
• Report the animals condition and wait for instructions. Stay with the animal until the Veterinarian relieves you of that responsibility.
• If appropriate, complete Section A of the Investigator Managed Colonies Request for Health Check. (forms available on line).
• Complete a RED Veterinary Examination card and place it on the animal’s cage. Red cards are available from DLAR.

The DLAR veterinary staff will examine the animal and consult with the PI regarding treatment options, up to and including euthanasia. The DLAR veterinary staff will write treatment instructions on red card and discuss any care issues with you. The veterinary staff will remove the red card when treatments are complete (you should NOT remove the red card). Probably the most critical issue is to be aware of animals in need. If treatment information is not written on the red card within 24 hours after you have placed the card on the cage / tank, then call the Veterinarian again.

SPECIAL TOPIC LECTURE:
Utilizing a Performance Approach in Animal Care and Use Programs, Dr. John Bradfield, AAALAC Int.

Date/time: Friday, February 5th, 2016 at 2:30 to 3:30 PM
Location: JONES building auditorium (Room 143)
EVERYONE IS ENCOURAGED TO ATTEND
Dear Labby: I am confused about the requirements for doing rodent and avian surgery. I hear the rules are not the same as for sheep or primate surgery.

Dr. Stitches

Dear Dr. Stitches:

It is true that the federal requirements for rodent versus primate surgery are different, but the central theme remains the same—aseptic technique and successful outcomes. The Duke IACUC published a policy on the expectations for mouse, rat, and avian surgery. The policy is on the animal program website (POLICIES link), but we can review the components of the policy as:

The Surgical Area:
- Any dedicated space in a laboratory appropriately managed to minimize contamination from other activities in the room.
- No other activities can be performed in this same area while surgery is being performed
- Sufficient space for patient preparation and patient recovery must be provided.

Surgical Instruments:
- Sterile instruments are required.
- Instruments must be initially autoclaved or gas sterilized.
- Surgical instruments can be re-used for multiple animals on the same day; however, between animals, the tips of the instruments should be placed into a glass/ceramic bead sterilizer or other IACUC approved method.

Surgeon preparation (required):
- Hand scrubbing and rinsing of all hand surfaces
- Gloves
- A face mask

Patient Prep:
- Removal of fur/feathers over the patient’s surgical site
- Preparation of surgical site using a 3 layered scrub-rinse process (e.g. Betadine/Alcohol)
- Surgical draping of the disinfected area is required. For example, use of an adhesive plastic food wrap (e.g. Press-n-Seal is the only currently available product), pulled from a clean roll and applied across the surgical field and surrounding area. The incision can be made directly through the plastic wrap and into the skin.

Ask Labby

Dear Labby: My protocol is about to lapse due to circumstances beyond our control. It has taken us a long time to breed and develop our animals for research. Is there any way we can keep from euthanizing our animals?

Mouse Momma

Dear Ms. Momma:

The animal program does not wish that any animal be euthanized needlessly. The good folks at DLAR have created an ‘Animal Holding Protocol’ which can be used in special circumstances, and may be useful for your situation. Eligibility for the holding protocol is determined on a case-by-case basis. Situations which may allow for use of the holding protocols include animals remaining when a protocol becomes inactive (such as an expiring protocol). Other uses of the holding protocol include:
- New investigators coming to Duke that require immediate housing of their animals but do not have an approved Duke protocol presently;
- Investigators that are leaving Duke and do not have the necessary approvals for transfer to the new institution;
- Animals on a protocol under investigation for potential issues of non-compliance where the welfare or well-being of the animals is in question; or
- A non-compliance situation where the IACUC has taken the animals into receivership;

For more information, see the IACUC policy on the animal program website or call the DLAR @ 681-6792.

CE NOTE

In addition to the items listed on the Animal Program website, a new CE opportunity has been added. You can review performing appropriate alternative searches to painful or distressful procedures or conditions with a Duke Librarian. For more information and to contact a librarian please visit the Duke Searching for Alternatives Webpage at:

http://guides.mclibrary.duke.edu/animalalternatives
Upcoming Brown Bag Seminars

Please mark your calendars for the following Brown Bag Seminars that will take place in early February:

**Wednesday, February 3rd**
Subject: Environmental Enrichment in Laboratory Animals  
Dr. Karen Froberg-Fejko  
1:00 to 2:00 PM  
JONES building auditorium Room 143

**Friday, February 5th**
Subject: AAALAC—Regulatory Burden and a Performance Based Approach  
Dr. John Bradfield, Senior Director, AAALAC International  
2:30 to 3:30 PM  
JONES building auditorium Room 143

Both session are worth 1 CEU.

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**SPRING 2016 IACUC SEMIANNUAL SITE VISIT SCHEDULE**

**FEBRUARY 4TH:** LSRC – SANDS
**FEBRUARY 11TH:** GSRB2 – 710 West Main
**FEBRUARY 18TH:** BRYAN RESEARCH – NANALINE DUKE

**MARCH 3rd:** JONES - RP 1-4 – GSRB 1 – ENGINEERING (Teer/Pratt)
**MARCH 10TH:** MARINE LAB
**MARCH 17TH:** CARL – EYE CENTER – DLAR FARM—BUTLER BLDG.

**MARCH 31st:** CCIF

**APRIL 7TH:** FOSTER ST. – BIOLOGY – GROSS HALL – FRENCH SCIENCE – CIEMAS—DUKE NORTH/SOUTH
**APRIL 14TH:** GHRB—VRH DURHAM—
**APRIL 21st:** VIVARIUM – MSRB 1
**MAY 5TH:** LEMUR CENTER – MSRB2 – MESOCOSM
Wet Rodent Cages?
Keith St. Pierre BA, RLATG, CMAR

Whenever working with animals there is the potential for the unexpected. Rodent cages can become wet for a variety of reasons, but when it occurs the cages need to be addressed immediately. Animals in wet cages can become hypothermic if action is not taken quickly.

Common reasons that rodent cages can become wet are:

- Cage is not docked correctly on the rack and the lixit aperture door is resting on the lixit stem. Always ensure that the cages are completely docked on the housing racks. There is a red dot on all Allentown housing racks that will be hidden on the latches if the cages are docked correctly.
- Feed/bedding debris is pressing on the lixit stem. The majority of the time the lixit will stop leaking when the debris is wiped off.
- Enrichment placed against the lixit stem. Always place enrichment devices/material at the front of the cage so the animals cannot push them up against the lixit.
- Animals “playing” with the lixit. This is the most difficult reason to prevent, but DLAR can provide alternative enrichment choices to keep the animals occupied with more natural behaviors (e.g., foraging, chewing) to keep them from “playing” with the lixits.
- Mechanical malfunction of the lixit. This occurs in only, approximately 5% of the cases, but DLAR staff will address the issue by monitoring the cage space and replace the lixit when a mechanical malfunction occurs.
- Procedures to address wet rodent cages when they are discovered:
  - Notify DLAR staff immediately to assess why the cage is wet.
  - Move mice to a clean, dry cage and, if the animal’s fur is wet, dry them off with a paper towel and provide them with a heating pad to prevent hypothermia. Call DLAR veterinary emergency pager (919-970-9410) if the animals are hunched or have decreased activity levels or for assistance with locating the heating pads.
  - Mark the cage space location where the leak occurred by placing a clean empty cage with bedding in the space and mark with a “Lixit leaking” card to ensure no one else places a cage in the location until the lixit is assessed.
  - Record information about the incident on the DLAR “Lixit/Water Bottle Log.” This log is posted in the animal rooms or modules.
  - DLAR CMS staff will assess the cage location that is identified and replace the lixit if the lixit is found to be malfunctioning.

Some strains seem to cause their cages to flood more than others. If you have strains that more frequently have wet cage problems, please notify DLAR staff. DLAR can provide alternative enrichment devices that may help keep the animals from flooding their cages or provide them with a dry area for retreat.

Policies and Procedures Notes

DLAR Necropsy Guidelines: Please remember that if an animal dies for an unexpected or unanticipated reason (i.e., they were not euthanized per protocol humane or experimental endpoints) you should notify DLAR veterinarians at 919.970.9410, as a necropsy may be required.

Re-Use of Cage Cards: Please remember that you should NEVER re-use a cage card. This is especially true if your protocol is expired. Animals cannot remain on expired protocols, if they do it is considered a non-compliance. New cage cards must be printed to ensure that the animal is being tracked on the correct protocol. For more information or to request new cage cards please contact DLAR at 919.684.2797

What The NIH Guide For the Care & Use of Animals Says about Training

According to The NIH Guide, personnel caring for animals should be appropriately trained and the institution should provide for formal or on the job training to facilitate effective implementation of the program and humane care and use of animals. Personnel using or caring for animals should also participate regularly in continuing education activities relevant to their responsibilities. They are encouraged to be involved in local and national meetings of AALAS and other relevant professional organizations. Investigators, technical personnel, trainees and visiting investigators who perform animal anesthesia, surgery or other experimental manipulations must be qualified through training or experience to accomplish these task in a humane and scientifically acceptable manner. The Duke Animal Care and Use program offers many and varied training opportunities. For additional information on opportunities offered through DLAR and OAWA please contact either Michelle Calkins (681.1831/michelle.calkins@duke.edu) or Bill Wade (668.6722/w.wade@duke.edu)
North Carolina Association for Biomedical Research (NCABR)

Founded in 1989 by North Carolina’s leading bioscience research institutions (including Duke), the North Carolina Association for Biomedical Research (NCABR) is the only organization in the state dedicated to advancing all North Carolinians’ appreciation for the remarkable benefits of bioscience research and careers.

As a statewide nonprofit organization, NCABR’s members include academia, industry, government, hospitals, nonprofit research, voluntary health and other nonprofit organizations, as well as the general public. NCABR plays a leading role in North Carolina and the nation by providing objective, timely and authoritative advice and information to students and educators, representatives from government and the media, as well as members of the research community and the general public.

Since 1989, NCABR has launched innovative science education outreach programs and has designed a variety of bioscience education and career-related publications many of which are the first of their kind in the country and are now used nationally. NCABR’s ongoing efforts to promote public understanding of biomedical research were recognized in 1999 when Research America, a national nonprofit public education and advocacy alliance of 450 research organizations, honored NCABR with its prestigious national award for "An Organization that has Distinguished Itself By Its Advocacy" for bioscience research. NCABR received this award in a ceremony in the United States Senate along with NBC news anchor Katie Couric and former Oregon Senator and Governor Mark Hatfield.

To date, more than 2,000 North Carolina K-12 teachers have participated in NCABR’s science education programs and have designed a variety of bioscience education and career-related publications many of which are the first of their kind in the country and are now used nationally. NCABR’s ongoing efforts to promote public understanding of biomedical research were recognized in 1999 when Research America, a national nonprofit public education and advocacy alliance of 450 research organizations, honored NCABR with its prestigious national award for "An Organization that has Distinguished Itself By Its Advocacy" for bioscience research. NCABR received this award in a ceremony in the United States Senate along with NBC news anchor Katie Couric and former Oregon Senator and Governor Mark Hatfield.

To date, more than 2,000 North Carolina K-12 teachers have participated in NCABR’s science education programs, more than a thousand North Carolinians have attended an NCABR public forum to debate biomedical research issues, and dozens of members of the North Carolina and national media have attended an NCABR science journalism program. For more information about our own biomedical research organization, visit their website at: http://www.ncabr.org/

AMERICANS FOR MEDICAL PROGRESS (AMP)

Americans for Medical Progress (AMP) protects society’s investment in research by nurturing public understanding of and support for the humane, necessary and valuable use of animals in medicine. Threats by animal rights extremists hurt medical progress. AMP provides accurate and incisive information to foster a balanced public debate on the animal research issue, ensuring that among the voices heard are those whose lives have been touched by research and those who work in the field. Through various specialty publications, outreach initiatives and the media, AMP informs the public of the facts of animal-based research. AMP also distributes timely and relevant news, information and analysis about animal rights extremism to the research community through its news service. For more information on AMP, visit their website at http://www.amprogress.org/site/c.jrLUK0PDLoF/b.913145/k.4502/Americans_for_Medical_Progress.htm

Foundation for Biomedical Research

The Foundation for Biomedical Research (FBR) provides free resources on their website http://fbresarech.org/education/index.htm

Brochures
- Facts vs Myths (pdf)
- Proud Achievements of Animal Research (pdf)
- The Importance of Being a Mouse (pdf)

Species Sheets
- Rats and Mice (pdf)
- Dogs and Cats (pdf)
- Non-Human Primates (pdf)
- Other Species (pdf)

Opinions About Animal Research From:
- Scientists
- Religions
- Organizations
- Opponents

Other Resources
- AIDS and Animal Research
- Facts About Animal Research
- Nobel Prizes
- Animal Research 101
WHY WAIT? AVOID DELAYS!

Protocol Process Updates: Obtaining OESO and EOHW Clearance for Animal Use Protocols & Amendments

There are two parallel processes at work with every protocol or amendment submission to the Institutional Animal Care & Use Committee (IACUC); but must be completed before the proposed work with animals can be accomplished. The IACUC must AP- PROVE the proposed activity, while Occupational Environmental Safety Office (OESO) and Employee Occupational Health and Wellness (EOHW) must CLEAR the proposed protocols and amendments.

Often, the protocol will be approved by the IACUC many days prior to clearance being granted by OESO or EOHW. Usually the hold-up is with one individual listed on the protocol not completing the web training, or re-submitting a health questionnaire -- really very small but highly significant issues! Did you know you can obtain OESO and EOHW clearance prior to submitting the protocol document for review?

EOHW clearance: All research staff who will work with animal models must complete the “Health Review for Animal Handlers” on the Duke EOHW web site www.hr.duke.edu/eohw. The link is located on the main page. Click on Health Review for Animal Handlers. You will need a Duke unique ID in order to complete the form. Fill out all required information and click on submit when finished. You do not need to submit a hard copy. Questionnaires will be reviewed by EOHW medical staff. If there are any concerns with respect to occupational risks you will be contacted by one of the staff nurses. If you have additional questions after submission you may contact the EOHW office at 6864-3136 and select option #2.

If you need additional assistance with this process please call Bill Wade at 668.6722 in the OAWA office.

IBC Approval

Waiting on IBC approval can also delay OESO clearance of a protocol. If your protocol uses recombinant DNA, select agents, or other hazardous agents that require IBC approval, ensure that you submit the required documents to the IBC in advance. They typically meet 1 week prior to the

MEETING AND AMENDMENT DEADLINES 2106

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Supporting Breeding for Difficult Strains of Mice

Duke is required to abide by the standards set in the 8th edition of the Guide for the Care and Use of Laboratory Animals as a condition for receiving NIH funds. The standard mouse cage currently available through DLAR provides 75 sq in floor space. According to the Guide and the Duke IACUC policy on rodent housing, this is sufficient space for up to 5 adult mice or for 1 to 2 adult mice plus 1 litter of pups. More specifically, the Guide requires that at least 51 sq in be provided for each dam plus litter, regardless of the number of pups contained in that litter. Thus, the standard Duke cages are too small to accommodate 2 dams + 2 litters. The IACUC therefore encourages that researchers using trio breeding schemes (1 male + 2 females) separate each pregnant dam into her own cage during her last trimester of pregnancy. Males can be removed to single housing at this time or can remain with one of the females. However, if an exemption from housing density standards been granted by the IACUC to allow pups to remain with the mother beyond the usual 21 day weaning date to enhance their growth and survival ("extended weaning"), then the male MUST be removed from the cage before pups are born. Otherwise, the male will likely impregnate the female during the post-partum estrus. The birth of these new pups 21 days later, before the previous litter is weaned, would create over-crowded conditions and endanger the health of the dam and the newborn pups. This would be a significant animal welfare concern.

Any departures from the Guide must be scientifically justified and must also be required in order to perform the research. In the past, some Duke investigators have requested and been granted exemptions from the policy on housing density to allow housing of 2 mutant dams and their litters in the same (75 sq in) cage. The exemption was typically granted based on the justification that the mutant strains are compromised in some way and that the additional dam can "assist" with nurturing pups to enhance pup survival and growth. However, this justification is no longer sufficient due to recent changes in regulatory guidance, published research, and development of alternate approaches to supporting potentially compromised dams and litters.

A recent publication (Kedl RM, et al., J Immunol. 193:4757-4760, 2014) examined the breeding performance of mice housed with sufficient space according to the Guide (2 adults + 1 litter) versus “overcrowded” mice housed with 2 adults + 2 litters in a 75 sq in cage. Although the study was undertaken to provide evidence to lobby for “overthrowing” the Guide density standards, the data actually showed an overall parity of reproductive performance in these two scenarios for 472 litters of varying genotypes. This actually makes sense scientifically. If a dam is likely to be compromised due to genotype, another dam of the same genotype dam is likely to be similarly compromised and thus unable to “help” much without compromising her own litter. Such compromise would create an additional animal welfare concern, something the IACUC wishes to avoid.

However, even if you are convinced that your mutant strain would not thrive in a 1 dam + 1 litter scenario, many alternatives exist within the space constraints of the Guide that can provide support for mutant dams and their litters, without the need for an exemption from animal welfare standards. Possibilities include the addition of a non-nursing “nanny” dam, fostering mutant pups to a dam that is not compromised, or using a larger cage.

Supporting Breeding for Difficult Strains of Mice (cont.)

The addition of a “nanny” dam to a cage containing a nursing dam and her litter fully meets the stipulations of the Guide, without much change in breeding colony management, 75 sq in provides sufficient space for 2 adults + 1 litter. Alternately, mutant pups may be removed from their birth dam and fostered to a non-compromised dam that has a litter of a similar age. For example, wild type CD1 dams are excellent foster mothers and have been documented to successfully raise litters of up to 17 mice. CD1 dams and sires can be obtained from the DLAR Breeding Core. In this scenario, most investigators typically euthanize all or most of the foster dam’s original CD1 pups, since they grow much faster than C57BL/6 pups. An advantage of this approach is that the mutant dams can more rapidly produce mutant pups, since re-breeding does not require waiting until the current litter is weaned. However, if you feel it is preferable for your research, you can continue to house 2 mutant dams + their litters in a single cage – you just need to use a cage that provides at least 102 sq inches or more of floor space. Peg Hogan in DLAR can help you obtain a ventilated rack that can accommodate both these larger cages and standard cages.

Researchers should also be aware that, while biologically possible, gestating a new litter while nursing a current one can compromise the health of the dam, retard the growth and survival of the current litter, and result in smaller litter sizes. The IACUC thus discourages breeding schemes that require “gestating while lactating”. For strains that require extended weaning, results may be enhanced by providing dams and pups with “supportive care”. A number of researchers have found that providing a mash consisting of fines of their standard mouse chow, mixed with water and a supplemental calorie source (e.g. Supplical, available through DLAR), beginning on day 16-17 and continuing until weaning has enhanced the growth and survival of mutant pups.

The IACUC encourages you to consult with DLAR for advice on these or other breeding schemes that can enhance the welfare of your breeding colony. DLAR veterinarian Dr. Clay Rouse and Traci Reddick, supervisor of the DLAR Breeding Core, can provide advice as to which of these alternate breeding and support scenarios might work best for your research needs. They can also arrange for any training necessary, including methods to encourage successful fostering. Please remember that any change in your breeding strategy requires amendment of your IACUC protocol. This is particularly true if you adopt the fostering strategy, since you will need to add additional adult mice (the dams and sires of your foster strain) as well as additional pre-weaning mice (the foster dam’s original pups).