

Research Resources

"We can judge the heart of a man by his treatment of animals."....Immanuel Kant

Vol. I, No. 9

October 2006

Research Resources will be sent out to Active Project Directors, but I encourage you to share this will all your staff, and, if any want to be included in the mailing, have them send a request to stacy.wells@louisville.edu. If you would like to contribute to the newsletter, you may send your items to the same address.

IACUC Policy: Testing of Cell Lines and Other Biological Materials for Rodent Pathogens

Various rodent pathogens have been shown to infect cell lines and other biological materials. When these infected materials are injected or otherwise introduced into live animals, infection of the animal may occur with the potential for the pathogen to spread to other rodents at UofL animal facilities. The animal care and use program has been mandated to maintain rodent species, especially mice, Specific-Pathogen-Free (SPF) because of the devastating impact adventitious infection has on ongoing research programs. Furthermore, there is currently no suitable location within the Research Resources Facilities (RRF) for long-term isolation of rodents exposed to murine pathogens that reduces the risk of inadvertent spread to existing colonies to an acceptable level.

Therefore, all biological materials (*e.g.*, cell lines, tumor tissue, sera) of rodent origin and non-rodent biological materials that have or may have been passaged through rodents must be tested for potential rodent pathogens by an RRF-approved method prior to being placed into live rodents in UofL animal facilities.

Approved methods include the mouse/rat/hamster antibody production test (MAP, RAP, HAP test) or PCR-based testing (*e.g.*, IMPACT™ I test or equivalent). Testing must include all "RRF Excluded Agents," which are those specific pathogens for which the institution has included in its SPF list.

Results demonstrating the absence of pathogens must be forwarded to the IACUC office for review prior to final approval of the *Proposal* describing their use. It should be noted that this may require the omission of

portions of a study until such time that biological use is deemed necessary and testing is completed. In such cases, modification of a previously-approved *Proposal* to include the use of such substances is the appropriate mechanism. Note that this pertains primarily to biological materials that have been purchased or received from other institutions or vendors. Some vendors may be able to supply acceptable certification that materials are free from murine pathogens. The RRF Veterinary Care staff will assist the IACUC in judging the adequacy of such certification. Biological materials that are acquired from UofL SPF colonies (*e.g.*, blood products, primary cell lines, tumor tissue) are exempted from testing unless an excluded agent was identified in the colony of origin at the time of collection.

57th AALAS National Meeting Entertainment Highlights

The 57th AALAS National Meeting will take place this month, October 15-19, in Salt Lake City, Utah. The meeting should be as entertaining as it is educational.

Lab Products, Inc. has arranged for a special concert for all National Meeting attendees by *American Idol* top-ten favorite Jon Peter Lewis. His appearance, headlining other live performances and taking place on Tuesday, October 17 6:30-8:30, at the Marriott Grand Ballroom, is part of what promises to be an evening full of fun and entertainment. As part of the annual Lab Products Animal Technician Award program, deserving technicians from each of the eight AALAS districts, plus one Canadian technician, will

receive nine awards. Each winner receives a complimentary trip to the meeting—including accommodations and travel expenses—and a commemorative plaque, presented on stage. During the evening, singer-songwriter Jon Peter Lewis will take the stage. An *American Idol* finalist, JPL (as enthusiastic fans know him) has received accolades from throughout the entertainment industry. Legend Elton John has praised JPL's voice, while *People* magazine proclaimed him the "new idol heartthrob." JPL's recent single, "If I Go Away," hits radio with great expectations, and fans anxiously await his upcoming new album. Following his performance, JPL will offer a limited number of autographed pictures. All meeting participants are invited to attend this exciting night of great food, dancing, and live music!

Just following this event, Allentown has commissioned the Mormon Tabernacle Choir to perform a private concert during the AALAS National Meeting in Salt Lake City. The event, scheduled from 8:30–9:30 p.m. on Tuesday, October 17, at the Conference Center, is open to all registered AALAS meeting attendees. For security purposes, only those in possession of their National Meeting badge will be permitted entry into the Conference Center. "We're extremely happy and proud to sponsor this once-in-a-lifetime event for AALAS members," said Michael A. Coiro Sr., Allentown CEO. "I look forward to seeing everyone there." The Mormon Tabernacle Choir, comprised of 360 men and women ranging in age from 25 to 60, has performed at five U.S. presidential inaugurations and has five gold records. Their release of the "The Battle Hymn of the Republic" with the Philadelphia Orchestra won a Grammy award in 1959 and is perhaps their most famous recording. Together both events will make for a very fun filled night. I'll be there and I hope to see many others there, as well.

Animal Enterprise Terrorism Act (AETA) Passed in Senate by Unanimous Consent!

On September 28th, S. 3880, the Animal Enterprise Terrorism Act passed in the Senate with no objections by any Senator. This milestone would not have been possible without the extraordinary cooperation of Republican and Democratic Senators and their

staffs working together and with interested parties including biomedical research, animal agriculture, animal exhibition and other animal user groups plus the American Civil Liberties Union (ACLU). As you know, this legislation will amend the Animal Enterprise Protection Act (Title 18, Sec. 43 of the US Criminal Code) and will provide greater protections against intimidation and harassment of researchers and their families and will for the first time address campaigns of secondary and tertiary targeting that cause economic damage to research enterprises.

S. 3880 will now be addressed in the House of Representatives during the lame duck session of Congress which will return to work after the November elections.

September 2006 JAALAS

The following are the titles of the publications in the September issue of AALAS's Journal of the American Association of Laboratory Animal Science:

- [Acetaminophen Self-administered in the Drinking Water Increases the Pain Threshold of Rats \(*Rattus norvegicus*\)](#)
- [Biomedical Journals: Keeping Up and Reading Critically](#)
- [Individual and Group Housing in N-type Ca²⁺ Channel \$\beta\$ Subunit-deficient Mice Differently Affect Motor Activity](#)
- [Ribosomal RNA Sequences of *Clostridium piliforme* Isolated from Rodent and Rabbit: Re-examining the Phylogeny of the Tyzzer's Disease Agent and Development of a Diagnostic Polymerase Chain Reaction Assay](#)
- [Validation of the Use of Long-term Indwelling Jugular Catheters in a Rat Model of Cardiotoxicity](#)
- [Job Dynamics of Veterinary Professionals in an Academic Research Institution. I. Retention and Turnover of Veterinary Technicians](#)
- [Job Dynamics of Veterinary Professionals in an Academic Research Institution. II. Veterinary Technician Attendance, Absenteeism, and Pay Distribution](#)
- [Toxic Shock due to *Streptococcus pyogenes* in a Rhesus Monkey \(*Macaca mulatta*\)](#)
- [Use of Enclosures with Functional Vertical Space by Captive Rhesus Monkeys \(*Macaca mulatta*\) Involved in Biomedical Research](#)

- [Effects of Outdoor Housing on Self-Injurious and Stereotypic Behavior in Adult Male Rhesus Macaques \(Macaca mulatta\)](#)
- [Evaluation and Comparative Analysis of a Technique for Laparoscopic Ovariectomy in Rhesus Macaques \(Macaca mulatta\)](#)

If you would like to view copies of these articles, please contact the RRF office @ x5268 or one of the husbandry supervisors. Or visit the AALAS website at <http://www.aalas.org/publications>. (You must be an AALAS member.)

Tech Nite 2006

The Kentucky Branch of AALAS (American Association for Laboratory Animal Science) will be having their annual Tech Nite on Wednesday, November 1, 2006 from 6-9 pm in the Baxter I Auditorium. This meeting will be filled with practical information from animal and lab technicians useful in your everyday activities. If you have never made a presentation, this could be your opportunity to break the ice before a supportive and friendly audience of your peers. Suggested subjects are any techniques, housing arrangements, management tools, special equipment, unique research, personnel and animal enrichment programs, training and education programs, or any other topic associated with Laboratory Animal Science.

If you or someone you know would like to make a presentation, please contact Kathy Laster at 593-2585 or x5549. Everyone is encouraged to attend and learn some new techniques. It will be an interesting evening.

OLAW presents FAQs on PHS

A series of Frequently Asked Questions (FAQs) is now posted on the OLAW website at: [**http://grants.nih.gov/grants/olaw/faqs.htm**](http://grants.nih.gov/grants/olaw/faqs.htm). The information in the FAQs is updated and supersedes guidance previously published as articles in journals and magazines such as Contemporary Topics and Lab Animals. However, in many instances the previously published material provides additional information or elaboration, and is therefore available through hyperlinks provided on the FAQ site.

The FAQs also provide guidance on topics not previously addressed by OLAW, including the

Freedom of Information Act, post approval monitoring, HVAC malfunctions and failures, and rodent cage density.

Note that the FAQs have resulted in a number of changes to the Guidance section of the OLAW website: [**http://grants.nih.gov/grants/olaw/olaw.htm**](http://grants.nih.gov/grants/olaw/olaw.htm).

- FAQs replace “Guidance, Organized by Topic” and the “Comprehensive Guidance Document”
- Previously published articles are now available via the FAQs: [**http://grants.nih.gov/grants/olaw/faqs.htm#ref**](http://grants.nih.gov/grants/olaw/faqs.htm#ref).
- “Notices” now includes a Word document of current notices.

Institutions are encouraged to review the FAQs and make use of this new resource. As necessary, OLAW will update the site with new FAQs.

DEHS Required Training

Here is a reminder of the dates of the DEHS training on Lab Safety/Hazardous Waste (LS/HW) and Bloodborne Pathogens (BP). LS/HW is from 9:00-10:00AM and BP is from 10:00-11:00AM. Both sessions are held in the **Dental School-Room 105** on the following dates:

October 11, November 8, and December 13.

Bring employee ID number to sign in. Contact erin.foley@louisville.edu to reserve your spot.

Animal Watering in the RRF

Sometimes it takes a disaster to drive home the importance of things that are always there in quantity and quality. Such is the case with the water we drink. Our society has become so dependant on electrical energy to provide potable water to the masses that it takes only a few days of wide spread power outages to send us scrambling to find safe water to drink. There are virtually no wells, springs or other sources that are safe enough to drink without some form of energy to purify it. The only places may be old cisterns where rainwater is caught, filtered and treated like those found

on the Hornickel farm. Yes, a “Country Boy Can Survive.” In olden days, it was not even necessary to treat the cisterns with Chlorine, so water then was chemical and mineral free “soft” water. Having a cistern full of good clean cold potable water did take some management though, for instance, you always let the roof wash off before turning the water into the cistern and that meant that you had to go out in the rain and change the setting of the downspouts and you filled your cistern well before the hot winds of summer. As water consumption outgrew the storage capacity it became necessary to have water trucked in, and, in days of yore, the source of that water may have been a spring or creek and definitely required chlorination, usually a gallon of Chlorine bleach per truckload.

So on most days on the Hornickel Farm you would have a choice of “hard water,” “soft water,” “hard water with Chlorine,” or “soft water with Chlorine.” The water choices offered to the animals at the RRF are also quite varied, both in delivery system and chemical make-up. The intent of this report is to summarize water choices in the various RRF facilities.

Water choices and delivery systems by Facility:

BAXTER I - The facility is equipped with a re-circulating auto water system that utilizes a 100 gallon tank and a UV light source for sterilization. Because the system is lacks equipment to acidify the water it is currently shut down, and water is provided via 15 oz bottles and sipper tubes. This system could be up-graded to provide acidified water that is sterilized by UV for a cost of \$4,200.00. (SE Lab Quote)

Although the automatic watering equipment designed and installed in Baxter I provides water which has been purified by RO (reverse osmosis) and UV (ultra violet light), the investigator requirements for using acidified water currently prevent the use of the system and bring about the use of water **type #1.)**

Bottle supplied acidified tap water sterilized in a steam autoclave. Tap water is currently supplied by the Louisville Water Company and is reported to have a TDS (Total Dissolved Solids e.g., minerals) count of 250 PPM (parts per million). It is acidified to a pH range of 2.5 to 3.0 and sterilized in a steam sterilizer. No information is available at this time to evaluate any chemical reactions between the HCL used to acidify the water and the mineral content.

Should acidification equipment be installed in the RO automatic system, 95 to 99% of the mineral content would be removed and we would have water **type #2.) Auto water supplied acidified RO water sterilized by UV light.** Information is available at this time The RO units effectively remove 95 to 99% of mineral content reducing it to approximately 5 PPM. **BAXTER II** - This facility is equipped with a dual re-circulating system that utilizes a common RO water source. As in the Baxter I building, the water supplied to the RO system is furnished by the Louisville Water Company and has a TDS (Total Dissolved Solids) count of 250 PPM (parts per million). Acidification equipment is installed in line that automatically maintains a pH range of 2.5 to 3.0. Currently one pumping system supplies acidified water to animal housing pod 2 and a separate pump sends non-acidified water to pods 1 and 3. Both pumping systems use UV light to further sterilize the water. In addition to the auto-water re-circulating system, acidifying equipment for filling water bottles is located in the Baxter II clean cage washer room. Currently there is no RO source to this equipment.

Unlike the Baxter I facility, the majority of animals housed in the Baxter II building are being watered with the automatic systems. In animal housing pods 1 and 3 the water supplied is **type #7.) De-mineralized RO water sterilized by UV provided by auto water drinker valves and type #3.) Non-sterilized, non-filtered tap water in bottles or type #4.) Acidified non-filtered tap water in bottles.**

In the sterile barrier, animal housing pod 1, the water provided may be **type #2.) Auto water supplied acidified RO water sterilized by UV light, type #1.) Bottle supplied acidified tap water sterilized in a steam autoclave, or type #5) Bottle-supplied tap water sterilized in a steam autoclave.**

RRC – The automatic watering equipment installed in the RRC facility consists of 14 pressure panels equipped with 10” filters that filter out debris down to 1 micron. These systems are non-recirculating with each panel supplying 3 to 4 animal rooms. The lines are installed to provide a manual flushing valve at the end of each system. Room maintenance records and SOPs require at least 1 gallon of water be drained

from the flushing valve each week. Filters are changed on a monthly schedule.

Currently there are no mice on automatic watering in the RRC. Rats and other large animal species receive water via automatic watering, bottles, and buckets. Auto water is **type #8.) Non-sterilized, 1 micron filtered tap water.** In many instances, water bottles are often replenished or filled at sinks located in the animal rooms this is **type #3.) Non-sterilized, non-filtered tap water in bottles.**

Although none is currently being used in the RRC, **type #5.) Bottle supplied tap water sterilized in a steam autoclave** has been used extensively in the past and the equipment does exist so that **type #1.) Bottle supplied acidified tap water sterilized in a steam autoclave** could be provided.

MDR – The automatic watering equipment in this facility is very basic and is a cobbled up version of the system in place when the RRF moved to the RRC in 1992. Much of the room manifold system had been removed when the RRC re-occupied the facility. Physical Plant personnel replaced pipe and installed a pressure control panel equipped with one 5” 5 micron filter. The panel was purchased from SE Lab Group and services one quadrant of the rodent housing end of the building. The manifold system currently has no flushing drains and several dead end sections. The system is used exclusively to provide water for Rats, Rabbits and G. Pigs. Currently there are no mice on auto water in the MDR. Several estimates for up-grading the Auto Water system in the MDR are on file.

All the water provided to animals via automatic watering is **type #6.) Non-sterilized, 5 micron filtered tap water.** Water provided in bottles is **type #3.) Non-sterilized, non-filtered tap water in bottles.**

Although none is currently being used, **type #5.) Bottle supplied tap water sterilized in a steam autoclave** and **type #1.) Bottle supplied acidified tap water sterilized in a steam autoclave** could be provided.

55-A – Several rooms in Building 55-A is equipped with automatic watering. The equipment consists of a pressure reducing panel and a 5” 5 micron filter. Room manifolds typically have a 5 to 7 drops and a flushing valve at the end of the manifold line.

All water provided to animals via automatic watering **type #6.) Non-sterilized, 5 micron filtered tap water.** Water provided

in bottles is **type #3.) Non-sterilized, non-filtered tap water in bottles** or **type #5.) Bottle supplied tap water sterilized in a steam autoclave** and though none is currently being used, **type #1.) Bottle supplied acidified tap water sterilized in a steam autoclave** could be provided.

LSB and Dental School - All water is provided in bottles and is **type #3.) Non-sterilized, non-filtered tap water in bottles.** Should the need arise, **type #5.) Bottle supplied tap water sterilized in a steam autoclave** and **type #1.) Bottle supplied acidified tap water sterilized in a steam autoclave** could be provided.

Summary: Recent growth in RRF programs over the past few years has resulted in some differences in the chemical make-up and the delivery systems of water provided the animals. Though in some instances the differences are small and may not cause any deleterious effects on most research, they are there and should be noted and be available for reference. A major concern may be that animals on a research protocol may be getting different quality water in the same room, e.g., receiving types 2 and 5 as is often the case in the Baxter II barrier and in general the movement of animals from one facility to another. This report identifies 8 different varieties of water currently in use in RRF facilities. They are:

- #1.) Bottle supplied acidified tap water sterilized in a steam autoclave.**
- #2.) Auto water supplied acidified RO water sterilized by UV light.**
- #3.) Bottle supplied non-sterilized, non filtered tap water**
- #4.) Acidified tap water in bottles, No steam sterilization**
- #5.) Bottle supplied tap water sterilized in a steam autoclave**
- #6.) Auto water supplied non-sterilized, 5 micron filtered tap water.**
- #7.) Auto water supplied RO water sterilized by UV light.**
- #8.) Auto water supplied non-sterilized, 1 micron filtered tap water.**