



# InFocus

Research Animal Resource Center



## WCMC Mouse Colonies Declared Fur Mite Free!

As of January '09, all WCMC mouse colonies are again considered to be fur mite free. After detecting fur mites in several rooms in the fall of '06, RARC implemented a quarantine and treatment plan for the affected rooms.

The treatment regime employed at WCMC required treatment of individual animals and preparation and provision of medicated nestlets to every cage at cage change. Over 4000 cages were treated during a 7-week period. Following treatment, an intensive follow-up testing program was implemented. Several thousand skin scrape samples were collected and evaluated microscopically. All samples examined were mite free.



Scanning electron micrograph of surface dwelling mite

## C-7 Vivarium

The second phase of RARC's main facility renovation is progressing rapidly. WCMC Facilities expects to turn over this phase, which includes the entire 7th floor of the C building, to RARC in May '09. This phase, which includes a number of valuable features including numerous procedure rooms as well as specialized testing and housing rooms for behavioral and telemetry models, provides housing for over 10,000 rodent cages. Once the C-7 facility opens, the 3rd and final phase of vivarium renovation program which encompasses renovation of the entire 3rd floor of the S building, will commence. Prior to renovation, all animals currently housed on S-3 will be relocated to the main facility on A- and C-7. Details will be sent to all S-3 users well in advance of planned moves.

## Inside Interest:

### Canine Cancer as a Model of Human Disease

Cancer is the leading cause of death among dogs older than 10 years old (1). Many canine malignancies share multiple similarities with human cancer. Among the most common canine malignancies are those of hematological origin such as lymphoma. It has been proposed to use canine cancers as models for similar conditions in humans (2).

In a recent report by Breen, *et. al.* (3), researchers identified recurrent chromosomal aberrations responsible for three naturally occurring canine hematologic malignancies. Furthermore, they located these events to chromosomal regions homologous to areas in the human genome where the same aberrations are responsible for chronic myelogenous leukemia (CML), sporadic Burkitt lymphoma (BL) and chronic lymphocytic leukemia/small lymphocytic lymphoma (CLL). Their results suggest that aberrations in evolutionarily conserved areas result in similar hematologic malignancies in humans and dogs.

It is well known that some breeds are highly susceptible to some forms of cancers (2). Just like Breen *et. al.* used known facts from human oncogenesis to learn about canine oncogenesis, it is time

for others to look more closely at breed-specific cancers as models human oncogenesis. Overall, these findings support the wealth of data pointing towards companion dogs as a well suited biomedical model system for cancer research.

#### References:

1. Bronson RT: Variation in age at death of dogs of different sexes and breeds. *Am J Vet Res.* 43:2057-2059, 1982
2. Paolini M., Khanna C.: Translation of new cancer treatments from pet dogs to humans. *Nature Reviews Cancer* 8:147-156, 2008
3. Breen M., Modiano J.: Evolutionarily conserved cytogenetic changes in hematological malignancies of dogs and humans Y man and his best friend share more than companionship. *Chromosome Res.* 16:145-154, 2008

**Tasha, a female Boxer, was selected as the DNA donor for the Dog Genome Sequencing Project conducted by the Broad Institute. The canine sequence and SNPs libraries are available to the scientific community.**



**SAFE USE OF  
INHALATIONAL  
ANESTHETICS**

**Tech Week  
Celebration**

## Staff Spotlight ~

### Mary Barrett, Assistant Manager, Animal Facilities



*A familiar face returns*

Mary Barrett recently joined RARC's Husbandry and Operations staff as an Assistant Manager-Animal Facilities, with responsibilities in both the WCMC and MSKCC vivaria. Mary is a 2000 graduate of Rutgers University-Cook College, with a BS in Animal Science. Her original intention was to become a veterinarian, but a friend referred her to a position in a laboratory animal facility. After working there a short time, she realized this was her chosen career path.

When asked by friends and family why she enjoys working in the field, the answer is always the same. She's known her whole life that she's wanted to spend her career caring for animals. In laboratory animal science you play a role protecting the animals that make the ultimate sacrifice for

human health, as well as the health of other animals. It is a very rewarding experience.

Though only working within RARC for a few months, Mary is no stranger to New York City's Upper East Side. For three years until '03, Mary worked as a research technician in the laboratory of Dr. Harold Varmus at MSKCC. She subsequently was employed by the University of Medicine & Dentistry of New Jersey for five years, first as a Veterinary Technician, and then as a Husbandry Supervisor. During that time she earned certification from the American Association for Laboratory Animal Science at the Laboratory Animal Technologist level, and became a Certified Veterinary Technician. We are happy to have her back in the City as a member of RARC.



Every year, the American Association for Laboratory Animal Science (AALAS) sponsors "Tech Week" in order to recognize the important role that Laboratory Animal Technicians play in the humane care and treatment of laboratory animals, and as a result, in the research being performed. Tech Week is officially held during the first week of February, the week containing "Groundhog Day" to signify that the technicians are "coming out of the shadows".

At RARC, Tech Week was celebrated during the month of February to recognize the tremendous efforts of RARC's technical staff. A luncheon was held for the combined WCMC and MSKCC staff of over 150. Guest speakers included Dr. Emre Aksay who discussed his research using zebrafish to study the integration of visual cues and the development of memory. Additionally Dr. Rodolfo Ricart Arbona, a fellow in our Tri-Institutional Fellowship Program in Laboratory Animal Medicine and Science, presented the investigations undertaken in support of the mouse fur mite eradication program (see article on Page 1).

We encourage all members of RARC's animal care and veterinary technical staff to pursue technician certification offered by AALAS. AALAS has three levels of technician certification, Assistant Laboratory Animal Technician, Laboratory Animal Technician, and Laboratory Animal Technologist. Certification requires a specified amount of experience as well as passing the required certifying examination. As individuals progress in experience, they are eligible to obtain the next certification level. We are proud to say that 29 members of our animal care staff are AALAS certified, a testament to their dedication and professionalism.

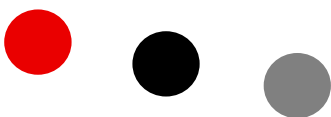
Please take a moment to thank the technicians who work diligently day after day to ensure your animals are receiving the highest level of care. If you don't have to the opportunity to tell them in person, you are welcome to direct messages to the Facility Manager overseeing the facility in which your animals are housed or to Sylvia Sprague, Manager Husbandry and Operations.







*These charcoal canisters passively trap halogenated waste gas ensuring the safety of your staff*



*Air extraction arm of snorkel system used to scavenge WAG*

#### TRAINING SESSIONS: March - May

##### RARC Orientation

Tuesday, 3/3/09, 2:00-4:00  
 Thursday, 3/19/09, 10:00 -12:00  
 Tuesday, 4/7/09, 2:00-4:00  
 Thursday, 4/16/09, 10:00 -12:00  
 Tuesday, 5/5/09, 2:00-4:00  
 Thursday, 5/21/09, 10:00 -12:00

##### Xenograft Training

Monday, 3/16/09, 2:30 - 3:30  
 Monday, 4/20/09, 2:30 - 3:30  
 Tuesday, 5/18/09, 2:30 - 3:30

##### Hazardous Materials Training

Wednesday, 3/25/09, 2:30 - 3:30  
 Wednesday, 4/22/09, 2:30 - 3:30  
 Wednesday, 5/27/09, 2:30 - 3:30

##### Rodent Surgery

Friday, 3/6/09, 10:00-11:30, wet lab  
 Monday, 3/16/09, 10:30-11:30  
 Friday, 4/3/09, 10:00-11:30, wet lab  
 Monday, 4/20/09, 10:30-11:30  
 Friday, 5/1/09, 10:00-11:30, wet lab  
 Monday, 5/18/09, 10:30-11:30

##### Rodent Breeding

Wednesday, 4/22/09, 10:00-11:30

## ***SAFE USE OF INHALATIONAL ANESTHETICS***

Since the introduction of isoflurane as the inhalant anesthetic of choice within RARC's facilities, investigators have learned to appreciate the smooth induction rate, the ease and safety of maintaining animals in a surgical plane for both brief as well as extended procedures, and the quick, smooth recovery this anesthetic provides. Unfortunately, appropriate procedures for scavenging waste anesthetic gas (WAG) have not been consistently adopted.

The use of a gas anesthetic requires that one appropriately scavenges WAG so that the user and others present in the area are not exposed to anesthetics that could prove harmful. While isoflurane is considered one of the safest inhalant anesthetics, there have been reports of nausea and/or headache associated with its use. These experiences have been linked to inadequate scavenging of WAG.

Mobile isoflurane units, on loan from RARC or belonging to individual laboratories, must be equipped with evacuation tubing leading to an F/AIR canister, a charcoal filter specifically designed to remove the excess halogenated anesthesia gases from the "operating" room environment. The F/AIR canister adsorbs WAG as the gas impregnated air flows through the charcoal in the canister. These canisters can only bind a limited amount of isoflurane; once fully loaded, WAG can escape from the canister. Therefore, monitoring is critical.

Before its' first use, the weight of the canister in grams must be recorded on the canister. Then, after each subsequent use, the canister should be reweighed and the new weight recorded and the increase in weight noted to ensure that it has not increased by more than 50 grams, the maximum recommended by the manufacturer. The use of a canister beyond its 50 gram limit results in a hazardous condition, reportable to the Environmental Health and Safety Department. Once fully loaded, the canister must be discarded by contacting Environmental Health and Safety (EHS). EHS will schedule pickup of the used canister. RARC's Veterinary Services section assumes this responsibility for the carts available "on loan" to investigators. For individually

owned carts, canister disposal is the responsibility of the laboratory which owns the cart.

Finding F/AIR canisters without a starting weight and/or follow-up weights recorded has become one of the most common violations reported during semi-annual IACUC inspections and RARC staff rounds. The IACUC is charged with overseeing the welfare of all animal facility users, both four- and two-legged. After discussing this issue with EHS staff, the following IACUC policy has been established:

Any F/AIR canisters found in use in the animal facility or laboratory must be properly labeled with the:

1. Name of the Principal Investigator
2. Start weight and date
3. Follow-up weights and dates

F/AIR canisters without proper labeling will be confiscated and discarded without further notification.

It is important to recognize that there may be an available alternative method for WAG scavenging in some vivarium procedure rooms. RARC procedure rooms may be equipped with an "air extraction" snorkel apparatus. Snorkels were installed with the specific intention of providing an easy and safe method of removing WAG. When working in a room with a snorkel, simply attach the evacuation tubing from the induction chamber and/or the nosecone apparatus, if in use, to the inside of the snorkel cone. This will effectively and adequately exhaust the waste anesthetic gas away from the user and out of the facility. No labeling or record-keeping is required.

In order to ensure a safe work environment as well as the appropriate concentration of anesthetic is delivered, the anesthetic machine (vaporizer) must be calibrated annually. A current calibration label is required on each machine.

Importantly if you can detect the anesthetic agent's odor, then WAG is insufficient and you are putting your health at risk. For additional information on the hazards associated with WAG please visit the Occupational Safety & Health Admin. Website at <http://www.osha.gov/SLTC/wasteanesthetics/index.html>

April & May  
Seminars

All are  
welcomed to  
attend!



Please send newsletter comments or  
suggestions for future articles to  
[rarc\\_eqa@wcmc.org](mailto:rarc_eqa@wcmc.org)

*\*UPCOMING SEMINARS\**

**COMMON MURINE PATHOGENS AND THEIR  
POTENTIAL EFFECTS ON RESEARCH**

*Julie R. White, DVM, DACVP, Comparative  
Pathologist, Laboratory of Comparative  
Pathology & GEM Phenotyping Service*

*Place: MSKCC, RRL, Room 101*

*Date: Wednesday, April 15*

*Time: 2:00 - 3:30*

**INTRODUCTION TO THE LABORATORY OF  
COMPARATIVE PATHOLOGY &  
GENETICALLY ENGINEERED MOUSE  
PHENOTYPING SERVICE**

*Sebastien Monette, DMV, Comparative  
Pathologist, LCP and GEM Phenotyping Service*

*Place: MSKCC, RRL, Room 101*

*Date: Wednesday, May 20*

*Time: 2:00 - 3:30*

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