

# SEAALAS NEWSLETTER

WINTER 2017



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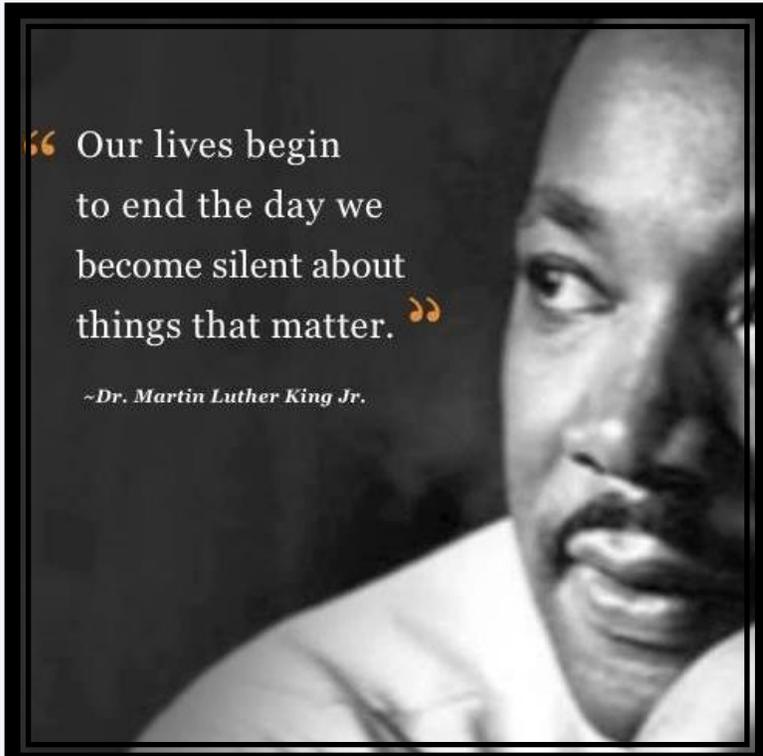
**And more...**

**We are an association of professionals that  
advances responsible laboratory animal care  
and use to benefit people and animals.**

# Letter From the Editor

This year, I have been stirred by the crowds of people coming together to voice their opinions. It is easy to feel helpless in these times, but a large group of people cannot be ignored or overlooked. I truly believe that, no matter what happens in the next 4 years, our country will come out better than ever before. Though it took something big to jolt us awake, we will not go back to sleep. We will hold our elected officials accountable, as never before. We will not allow hard-earned progress to stall or fall backward. So, I say to you, stay hopeful but do not stop speaking up for what you believe in. That is how real change happens in this country, not by the stroke of a pen.

Lindsay Olin, LVT, LATG



“ Our lives begin  
to end the day we  
become silent about  
things that matter. ”

*~Dr. Martin Luther King Jr.*

# Letter from the President

Happy New Year!

It has been an honor and a privilege being the President of SEAALAS for the past two years. We have grown in so many ways and have made advances to better our organization as a whole with technology and personal comradery.

The Annual Meeting will be combined with District 4 Members for a wonderful educational experience in Decatur. I look forward to seeing everyone and handing the gavel over to Becky Gregory.

Deidre Wright



# 2016 SEALAS Board of Directors

Director: Karen Leiber, Emory University

Director: Mark Sharpless, Yerkes National Primate Research Center

Director: Karen Strait, Emory University

Director: Lisa Wilson, University of Georgia

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2017 Annual Meeting Program: Michelle Hull, Emory University

2017 Annual Meeting Program: Amy Dryman, Emory University

Technician Branch Representative: Amy Dryman, Emory University

Awards: Travis Pruitt, Clemson University

# **2016 Election Results are in...**

## **And the winners are...**

**President-Elect: Johnny Wilson**

**Secretary: Sherrie Jean**

**Treasurer: Colleen Oliver**

**Director: Marsha Howard**

**Director: Robbie Champion**

**\*The elected will be sworn-in at the D4 meeting in March!\***

# **2017 Board of Directors**

**Director: Karen Lieber, Emory University**

**Director: Mark Sharpless, Yerkes National Primate Research Center**

**Director: Robbie Champion, Morehouse School of Medicine**

**Director: Marsha Howard, Emory University**

**Past-President: Deidre Wright, Medical University of South Carolina**

**President: Rebecca Gregory, Medical University of South Carolina**

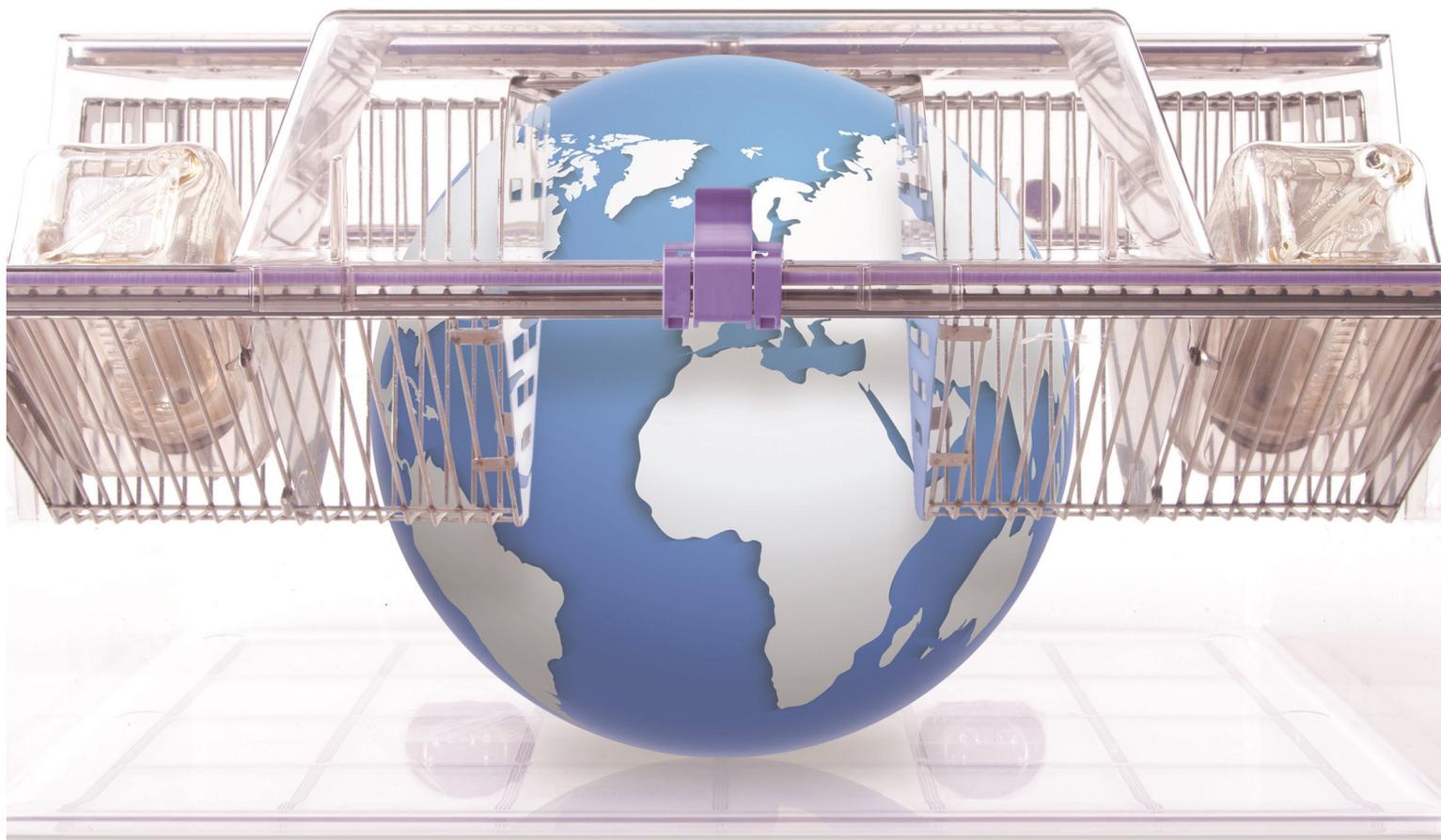
**President-Elect: Johnny Wilson, Veltek Associates, Inc.**

**Secretary: Sherrie Jean, Emory University**

**Treasurer: Colleen Oliver, VA- Atlanta**

# Introducing NexGen Rat 1800

A World of Value Inside.



## A Room with a View.

The forward portion of the 1800 cage, and also its corresponding wire bar lid, allow for a clear and unobstructed view both into and out of the cage! This provides researchers with an improved ability to perform quick and effective health checks, while - in equally important fashion - provides rats with a vantage point into what is occurring outside of the cage and within the room beyond; a key health and enrichment factor in the overall well-being of the animals.



## A Step in the Right Direction.

Variety within their environment, as well as the animals' ability to have a degree of control over it, is also a key factor in the well-being of research animals. The 1800 can accommodate an optional platform in the front of the cage that allows rats to engage in important enrichment activities such as climbing and exploration.



## Time to Make a Stand.

The Guide for the Care and Use of Laboratory Animals, as well as other generally-accepted global standards, mandates that research animals should be able to engage in normal postures and activities. For rats, the ability to comfortably obtain a bi-pedal stance is something that has been shown to be beneficial to their overall well-being. The 1800 is a much larger and taller cage with a floor to ceiling height of 10" / 25,4cm, allowing rats to easily achieve this bi-pedal posture.



Register for a free webinar on the NexGen Rat 1800 at [www.AllentownInc.com/rat1800](http://www.AllentownInc.com/rat1800)





# 2017 D4/SEAALAS Meeting

March 29—March 31, 2017

Courtyard Marriott Decatur

Decatur, GA

**Registration for the 2017 D4 meeting is now open!**

Head over to <https://seaalas.wildapricot.org/page-18486> for more information.

Hotel reservations can be made by going to <http://cwp.marriott.com/atldc/seaalas2017/>.



# D4/SEAALAS SPEAKERS WANTED



Theme: “Movin’ on Up: Advancements in Lab Animal Science”

We are looking for topics on advancements in care, husbandry, housing, veterinary medicine, and even administration of laboratory animal science.

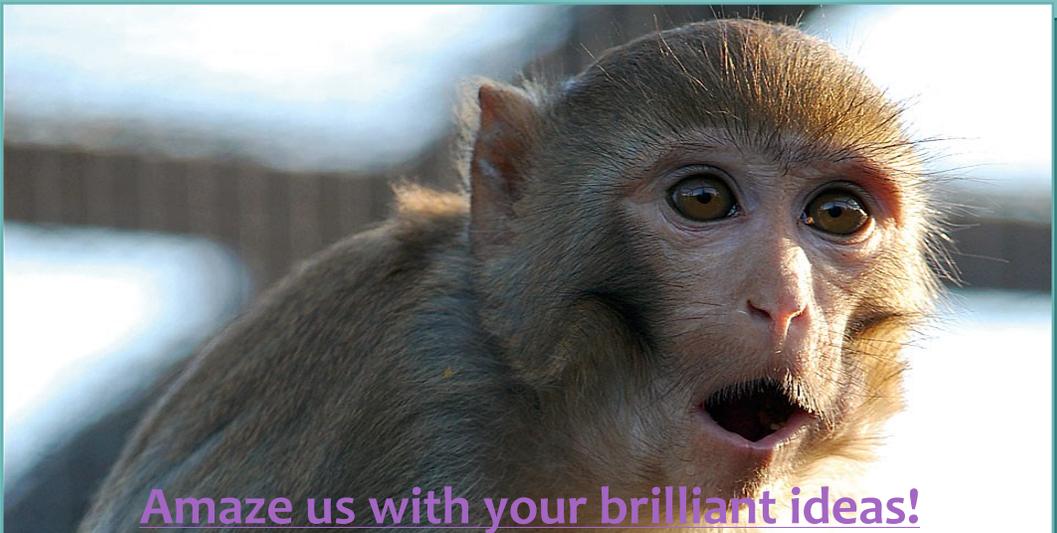
Have you switched to a new bedding that works wonders?

Does your facility have the best way to ease rabbit introductions?

Do you have a faster more accurate test you’ve switched to in the lab?

Has your front office streamlined the way animals are ordered, or improved business processes?

Have you started a new training program that’s really working for you?



**Amaze us with your brilliant ideas!**

To volunteer to speak, email [adryman@emory.edu](mailto:adryman@emory.edu)

For more information head on over to our website at

<http://seaalas.wildapricot.org/2017-D4-Meeting>

# Facility News

Hello SEAALAS,

GSU has weathered the first “storm” of the year with ease. We’ve had quite a bit of staff change recently, and with our new facility opening up, we have hired some new faces and had a familiar face return to the fold. Roosevelt Irby returns as a Cage Wash Technician, as Christopher Barrow was promoted to a Lab Animal Tech I position. Ancilla Titus-Scotland left us to take a job at Morehouse School of Medicine and we wish her the best of luck. Kalah Byrd, Jessica Hamm, and Jared Holloway have also left GSU and we hope they find what they are looking for. Patrese Muller has decided to switch careers entirely and become a flight attendant as she moves with her husband to New York.



We welcome newcomers Jessica Weems, Antoinette Jamison, and Luke Wyrwich to GSU as Lab Animal Technicians, bringing our staff up to 27 full time employees, one student assistant and two temporary employees. We may be on the lookout to increase our Cage Wash staff as well, so **be on the lookout for more hiring announcements.**

We hope to be sending a bunch of folks to the meeting in February, Drs. Hart and Wilkes will both be there for certain.

Congratulations to Joi Scott on her engagement over the holidays.

Get well soon to Erik Thurman who is recovering from surgery. We hope you’re back to work soon, as cage wash isn’t the same without you!

I think that’s about it, so until next time...!

Matt Davis





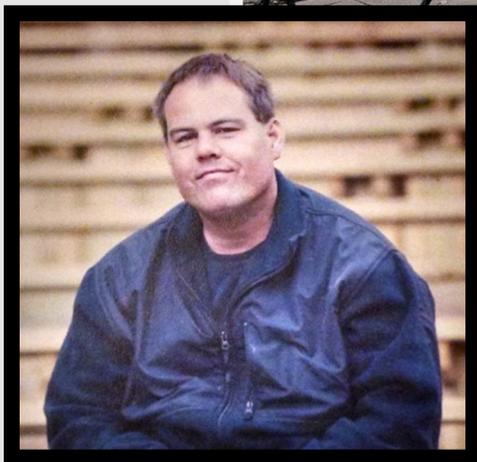
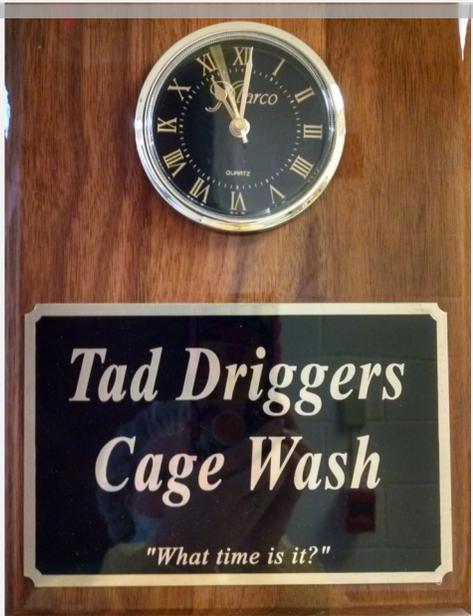
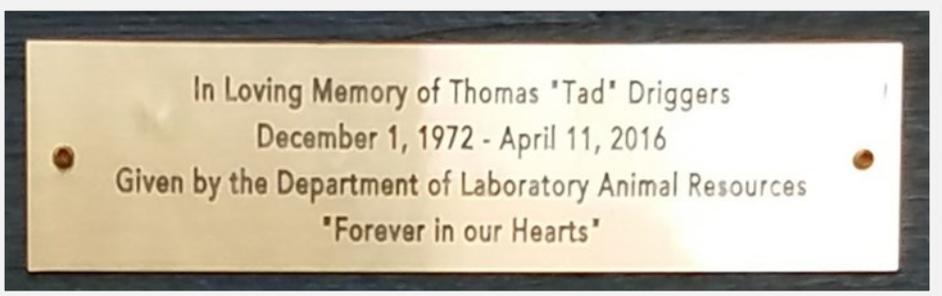
Hello SEAALAS from the Medical University of South Carolina!

MUSC has been like a swarm of busy bees getting prepped for our AAALAC site visit in March. We are eager to show off our facilities!

We have new faces to welcome aboard! Emily Garrison is an Animal Tech II that will be working in the Hollings Cancer Center and Zach Hedley is an Animal Tech II in the Children's Research Institute. Thomas Reckdenwald has started in the Basic Science Building in the cage wash area.

DLAR recently had a job openings here within our department and we are pleased that we have an exceptional employee that is making a difference and doing outstanding work that he was eligible to be promoted into this position. Congratulations to James Mennenga for being promoted from the cage wash area in the Strom Thurmond Building to an Animal Tech II.

As you may remember, DLAR lost a dedicated employee and friend last year: Thomas (Tad) Driggers. A committee was formed of some of Tad's fellow co-workers who wanted to honor his memory. The committee decided that a bench, where he often sat for lunch, should be dedicated to him. On December 1, 2016, which also would have been Tad's 44th Birthday, DLAR held a Dedication and Memorial Service in Tad's honor. Tad's family, co-workers, and friends came together to pay tribute to him. There was a ribbon-cutting ceremony and Tad's mom, Sallie Driggers, cut the white ribbon in honor of her son. It was a truly touching service where we all were united and sharing our favorite stories and memories of Tad. Our department has also created the Tad Driggers Memorial fund to support the Division of Laboratory Animal Resources in areas of education, training, and animal welfare.



-Deidre Wright, LATg



Emory University's DAR veterinary team is hosting four veterinary technician externs from Gwinnett Technical College that will be graduating in April of 2017 and hopefully joining in this amazing workforce!

- o Brittany Morgan
- o Brittany Ruiz
- o Kay Paris
- o Rayne Moscoso

One of our training coordinators, Rebeccah Hunter, was featured in the December 2016 issue of Laboratory Animal Science Professional's "*Celebrate the Mouse Launches New Phase*" article by Liz Rozanski, BA (pg. 22-23). A picture featuring three Gwinnett Technical College's veterinary technician students participating in our Research Discover Workshop with one of our residents, Dr. Shraddah Cantara, was also used in this article!

Congratulations to Owen Humphrey, Imani Barnes & Roger Dixon; they were nominated and voted as our Employees of the Quarter for the 1<sup>st</sup>, 2<sup>nd</sup> and 3<sup>rd</sup> quarter of 2016.



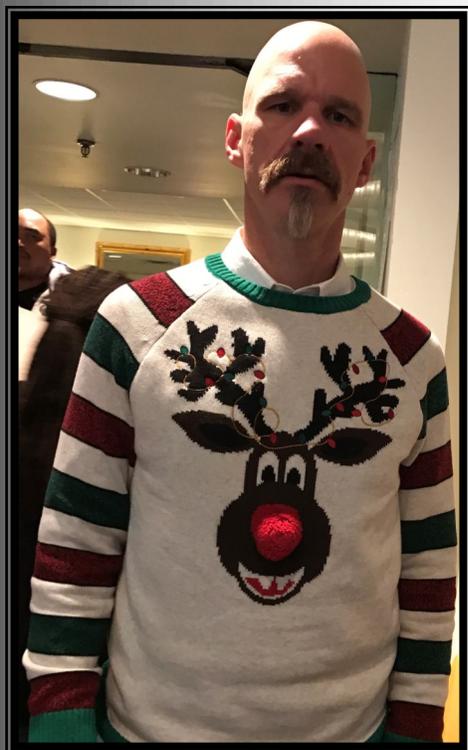
Maya Meeks has started a recycling and composting program in select animal rooms in the Whitehead Building of Biomedical Research as part of Emory University's Green Lab Initiative. Two animal care technicians, Allison Andrews and Lula Jobir, volunteered to pilot this in their rooms. In addition to Allison and Lula; Chelsea Williams, Arion Mershon, Danielle Smalls-Pressley and Andre' Bryant are now recycling and composting items in their animal

rooms as well. The ultimate goal is to remove as many trashcans from our facilities animal rooms and replace them with composting and recycling bins.

**This year's holiday party theme was an ugly sweater party and we gave away prizes in 4 categories. Everyone came together and had a great time with this theme. I am sure the judges had a hard time narrowing it down when picking the winners!!!**



**Ben and Cornelius**



**Dr. Taylor**



**Imani, Maya, and Kristy**



**Allison and Arion**



**Rebecca and Ben**



**Andre' and Michelle**



**Shraddah (Cutest Sweater), Rachelle, and Brenda**



**Kristy: Ugliest Sweater**



**Wali: Funniest Sweater**



**Maya: Most Creative Sweater**

# Submit an Article to Lab Animal Science Professional



## LAS Pro Submission Guidelines

Laboratory Animal Science Professional, the official magazine of the American Association for Laboratory Animal Science (AALAS), is filled with reliable, practical information, including the latest developments and strategies in laboratory animal science, such as management, professional development, occupational health and safety, facility design, technologies and much more.

Authors are invited to submit articles for consideration. Articles selected for publication may be edited for style, clarity, and length.

## Article Types and Required Elements

The majority of articles submitted will fall into one of three categories: a tech tip, a feature article, or an opinion/editorial.

**Tech Tip:** These articles are intended to describe a process or idea that other technicians would find beneficial. These articles should have an introduction, materials and methods section, and a conclusion. If animals are used in the study, a statement about animal welfare and approval of IACUC committees is required. Any funding sources or vendors should be listed with the article. All authors and co-authors should provide approval for final versions.

**Feature article:** Feature articles often contain a human interest element. These articles include interviews and stories centering on people and events. Feature articles can also cover topics in a more in depth fashion and highlight the most interesting and important elements of a situation or experience. All authors and co-authors should provide approval for final versions.

**Opinion/Editorial article:** These articles represent the opinions or interpretations of the authors rather than describing a process or study. They do not require distinct sections. However, these articles should still be supported by literature and references as appropriate. All authors and co-authors should provide approval for final versions.

The Editorial Advisory Board reviews each submission and rates the article in the following categories:

- Is the article of interest to the audience?
- Is the article well written?
- Were animals used humanely?
- Does the article include a statement indicating that studies were approved by an IACUC?
- Are all photographs and/or graphs necessary, supported by a clearly written legend, legible, and of sufficient quality?

Any references provided must be formatted in CSE style.



## More Information

**Technician Tip Articles:** Suggested article length is 500-1000 words. Article text should be submitted in an MS Word file. All images should be labeled to match callouts in the text and attached separately. Please include the original photos, charts, and graphs. All photos must be 300 dpi and high resolution tif or jpeg files. Charts and graphs should be submitted in their original formats.

**Feature Articles:** Suggested article length is 750-1500 words. Article text should be submitted in an MS Word file. All images should be labeled to match call-outs in the text and attached separately. Please include the original photos, charts, and graphs. All photos must be 300 dpi and high resolution tif or jpeg files. Charts and graphs should be submitted in their original formats.

Article queries may be sent to the AALAS Communication Department: [laspro@aalas.org](mailto:laspro@aalas.org).

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Sign up for *NABR Update* if your institution is a member at [www.nabr.org](http://www.nabr.org).



View the Eureka Science Blog at [eureka.criver.com](http://eureka.criver.com)

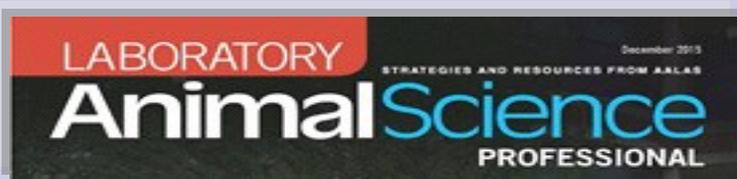
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Sign up for a FREE Subscription to this peer-reviewed journal at [labanimal.com](http://labanimal.com).



A FREE Quarterly Magazine for AALAS members filled with *reliable, practical* information.



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Watch live webinars and view them on-demand at [www.jax.org](http://www.jax.org)



Watch live webinars and attend virtual conferences at [www.labroots.com](http://www.labroots.com)



## Good Science, Good Sense and Good Sensibilities: The Three S's of Carol Newton

Adrian J. Smith and Penny Hawkins

**Recognition of the moral imperative to consider laboratory animal welfare has a long history.** In his *Principles of Investigation in Physiology*, Marshall Hall (1790–1857) proposed the replacement of animals where possible by observational studies, the necessity of clear objectives, avoidance of unnecessary repetition and the least possible infliction of suffering. Then, over one hundred years later, the concept of the Three R's (Replacement, Reduction and Refinement) was developed by William M. S. Russell and Rex L. Burch, as part of a project initiated by the Universities Federation for Animal Welfare (UFAW) and described in detail in their book, *The Principles of Humane Experimental Technique*, which was published in 1959.

Despite this, **the Three R's concept was not widely embraced until the 1980s.** Its profile was raised further by the establishment of a series of World Congresses on Animal Use and Alternatives, the first being held in Baltimore in 1993. This renaissance of the Three R's led to the current global recognition of the concept and its use to underpin many national laws and codes of practice regulating animal care and use.

One significant event in the intervening period was an international symposium entitled *The Future of Animals, Cells, Models and Systems in Research, Development, Education and Testing*, organized by the U.S. Institute of Laboratory Animal Resources (ILAR) in Washington, D.C. in October 1975. The purpose of the symposium was to examine the contributions of animal experiments to human health and welfare; the use and limitations of cell, tissue and organ cultures; and the application of statistical and computer technology to biomedical research. A key issue at the symposium was whether living animals could be replaced by *in vitro* techniques and computer simulations. Carol Newton, who was then Chair of the Department of Biomathematics at the University of California in Los Angeles, was an invited speaker.

Carol Newton's presentation was entitled *Biostatistical and Biomathematical Methods in Efficient Animal Experimentation*. She drew the attention of the participants to the challenges of biological variation and the unknown interactions between variables. She saw the role of biomathematicians as vital in understanding these processes and drew attention to the lack of "courses that include an interrelated blend of computer, statistical and modeling methods with primary emphasis on their application to real biomedical problems." **Poor experimental design and inappropriate statistical analysis are still major issues in laboratory animal science.**

Later in the symposium, the Canadian veterinary pathologist Harry C. Rowsell (1921–2006) spoke on *The Ethics of Biomedical Experimentation*. In the penultimate paragraph of the record of his presentation, he emphasized "...the requirement to practice, in animal experimentation, the concept of replacement, reduction and refinement. All are consistent with the production of valid, meaningful results that, hopefully, will allow replacement of partially successful methods of disease treatment, in both man and animal, with those that are fully effective. **To the three R's we may add Carol Newton's three S's: good science, good sense and good sensibilities.**"

## 1. The Relevance of the Three S's Concept to Laboratory Animal Science and Welfare Today

Since, as far as we are aware, Carol Newton did not publish a description of her concept, we offer our own interpretation:

*Good Science is naturally the aim of all scientists. As Carol Newton pointed out, 'experiments should be designed to reduce the effect of certain uncontrollable sources of variation, to permit effective techniques to be used in their analysis, and in general to obtain the most information with greatest certainty in the shortest time using the fewest subjects.'* However, as mentioned above, ***there are currently very serious concerns about the quality of experimental design, statistical analysis, reporting in the literature, and the rigor of peer review within the life sciences.*** All of these flaws have serious ethical implications, because poor science and reporting can lead to wasted funding, false hopes for patient groups, wastage of animals in projects of limited benefit, unnecessary suffering and, potentially, avoidable repetition of animal experiments. Current research culture is likely to underlie many of these problems (a prime solution would be better training and continuing education in relevant areas such as good research practice, peer reviewing and 'laboratory leadership').'

*Good Sense is an essential tool in laboratory animal science, since this is a relatively young discipline with many uncharted areas. In our opinion, good sense can help to ensure that "the Right animal is used for the Right Reason" (the Three Rs of Harry Rowsell), and that commonsense prevails when scientific evidence is lacking. As Carol Newton said in her presentation: 'One certainly must remain mindful of the risk that the "correct" model is not among those being considered.'* In practice, when focusing on a biological system or mechanism of interest, it is essential that the researcher critically reflects on the models and approaches that have traditionally been used in the field. There is considerable debate regarding the translatability of a range of animal "models" and researchers should challenge themselves as to whether animal use is valid, translatable and justified, and if so how animals should be used. For example, ***it may be possible to increase translatability and reduce adverse effects by studying biomarkers and mechanisms as opposed to creating a disease "model"***. If it is deemed necessary and justifiable to create an animal model of a disease, critical reflection and review is also essential to apply the Three R's, maximize translatability and gain the most benefit from it.

**Although extrapolation from knowledge of other species, including humans, is an everyday part of planning animal research, such extrapolation must be performed with caution.** For example, the great differences in metabolic rate between animals of varying size make it essential to use allometric scaling when calculating a suitable dose for novel species. Besides fundamental issues such as this, common sense is essential when creating experimental protocols. In particular, translatability of animal research can be poor if drugs are administered to animals by routes which are normally irrelevant in clinical trials (e.g., by intraperitoneal injection), or if the drug is given at an inappropriate stage in the animal model — both of which still occur within preclinical trials.

**Effective training in the biology, behavior and welfare needs of the study species, in critical and innovative thinking, and in the scientific method helps to ensure better sense and better science.** However, few researchers are currently receiving in-depth training in these subjects, either at an early stage or throughout their careers. As the number of courses in Laboratory Animal Science increases worldwide, this should be borne in mind. These subjects are, for example, mentioned explicitly in Annex V of the EU Directive 2010/63 on the protection of animals used for scientific purposes.

**Good Sensibilities** refers to the capacity to respond to, or be affected by emotions or events. **Empathy for the research animal is a prerequisite for the reduction of suffering and a “life worth living” for the animals.** Carol Newton emphasized that experimentation on intact animals should be resorted to ‘only when necessary and by designing experiments as effectively as possible’. The Good Sensibilities aspect of the Three S’s principle is therefore also an encouragement to practice what has become known in recent years as critical anthropomorphism. **Assuming that interventions that would cause pain or distress to humans may also cause animals to suffer, taking the biology and behavior of the species into account, is a good starting point for recognizing and addressing animal suffering.** It will also reduce the likelihood of the animal experiencing “contingent suffering”, for example due to transport stress, inappropriate husbandry, concurrent disease and undesirable social interactions. Contingent suffering has the potential to cause as much, if not more, suffering than the experimental procedures themselves, as well as the capacity to confound the science.

Although ‘sensibilities’ has largely been replaced in modern English by ‘sensitivity’ and ‘care’, it is interesting to note that a “culture of care” has become an important concept in laboratory animal science, aiming not only to improve animal welfare but also to improve conditions for animal facility staff. **More recently, researchers have been encouraged to practice a “culture of challenge,” asking whether established procedures are the best ones and striving to find the acceptable, rather than choosing the accepted.**

It is worth noting that both Good Sense and Good Sensibilities will further Good Science, just as the Three R’s promote better science and animal welfare.

## 2. Conclusions

All of the concepts that comprise both the Three R’s and the Three S’s are essential principles of humane experimentation and should underpin the training of personnel at all career stages. We believe that this will lead to more humane, valid science for as long as animal research and testing continues.

Carol Newton stated that it was her participation on National Institutes of Health committees, and her involvement in collaborative programs during the Cold War bringing together scientists from East and West, which was her most fulfilling work. In the discussion following her presentation in Washington, she was asked if she could help the proponents and opponents of animal research better understand each other. She replied: ‘...*I think the new generation of biologists...is embarking on a more quantitative orientation towards research. Almost inevitably, this will imply that they will attempt to define their terms better. When one does define one’s terms better and more exactly, one does communicate better. My feeling is that we all really have the same intent. I believe that good communication is going to be one of the things that will bring us together. Intent, though, is a human virtue, not a virtue of the computer.*’



**Join us in celebrating being the 14th approved Veterinary Technician Specialty (VTS) Academy by the National Association of Veterinary Technicians in America and the American Veterinary Medical Association!**

**Mission:** To promote excellence by specialization in veterinary technology/nursing in the distinct field of Laboratory Animal Medicine by demonstrating advanced proficiency of skill level and knowledge base. To provide and encourage exceptional animal welfare and medical care for animals used in laboratory animal settings. To promote respect and treat all species of research animals with the utmost dignity.

**More about us:** Over the next few years we plan to roll out three main categories of specialization that focuses on clinical medicine and skill in the research setting. They are as follows:

1. **Research Clinical Nursing,** with species categories of “Traditional”, “Non-Traditional” and “Large Animal” species. – A person spending a majority of their time providing project support and veterinary care to research animals.
2. **Research Surgeon-** A person who spends a majority of their time performing surgical procedures and provides veterinary care to research animals.
3. **Research Anesthetist-** A person who spends a majority of their time providing anesthesia and analgesia, while also providing veterinary care to research animals.

We are hopeful to have our first exam for the Clinical Nursing category in “Traditional” lab animal species by the 2017 National AALAS meeting. This first application period will be short compared to the following years. Application packets will be available by the end of January 2017 on the website with a due date of April 2nd. Notifications of approval for the applications will be July 1st with the exam to be held at the same years National AALAS meeting.



**Applications are  
Now Available at  
[www.ALAVTN.org](http://www.ALAVTN.org)**

# **The Charles River Prize**



**Awarded to a veterinarian in recognition of his/her outstanding contributions to laboratory animal science and medicine.**

## **Background**

Since 1978, Charles River has proudly sponsored the Charles River Prize in the U.S. Beginning in 2013, we expanded the reach of the Charles River Prize to include our international colleagues through AALAS.

## **Nomination Eligibility**

The nominee should be a veterinarian who has had significant, consistent contributions to laboratory animal science and medicine. The nominee must be either a member of AALAS or an [AALAS-recognized affiliate organization](#). The nominee may be a resident of any country. The Charles River Prize [Nomination Form](#) and Charles River Prize [Reference Letter of Support Form](#) must be completed for each letter of support.

## **Criteria**

- Publications and presentations in the field of laboratory animal science, medicine, welfare or ethics
- Teaching and training activities that foster the highest standards of animal care and use
- Public outreach supporting biomedical research
- Involvement in public policy enhancing biomedical research
- Involvement in development of recognized guidelines, standards and other activities enhancing the use of animals in biomedical research
- Contributions to the implementation of the 3Rs in biomedical research
- Other attributes not covered above that should be considered such as grants to enhance animal care and use programs or involvement in professional organizations (particularly leadership roles).

## **Award Details**

The recipient is awarded a plaque and a \$2,500 honorarium.

**This award will be presented in Austin, TX at the 68th American Association for Laboratory Animal Science (AALAS) National Meeting, October 15-19, 2017. The deadline for your intention to nominate is March 1 and the deadline for submission is April 1. For more information, please visit the AALAS website <<https://www.aalas.org/get-involved/awards/award-descriptions/charles-river-prize#.VKqXk2B0yBc>>.**

# Upcoming Educational Opportunities

*February 2, 1:00pm:*

**Jackson Labs Complimentary Webinar: Generate Quality Data by Ensuring the Health and Genetic Quality of Your Mouse Colonies**

<https://www.jax.org/education-and-learning/webinars>



**labroots**

*February 8-9:*

**Labroots Free Laboratory Animal Science Virtual Conference**

<https://www.labroots.com/virtual-event/laboratory-animal-sciences-2017>

*February 8-11:*

**Animal Transportation Association Annual Conference, Hong Kong**

<http://www.animaltransportationassociation.org/event-2225310>

*February 14-17:*

**Jackson Labs Workshop on Surgical Techniques in the Laboratory Mouse, La Jolla, CA**

[Courses.jax.org](https://courses.jax.org)

*February 19-22:*

**World Aquaculture Society Annual Meeting, San Antonio, TX**

<https://www.was.org/meetings/Default.aspx>



*February 22, 1:00-2:30pm:*

**AALAS Webinar: Assessing and Minimizing Pain and Distress in the Euthanasia of the Rat**

<https://www.aalas.org/store/meeting?productId=7383098#.WHUB09IrLcs>

*February 23, 1:00pm:*

**Jackson Labs Complimentary Webinar: Genetic Drift: What It Is and Its Impact on Your Research**

<https://www.jax.org/education-and-learning/webinars>

***February 22-23:***

**USDA Animal Welfare Information Center Workshop on Meeting the Information Requirements of the Animal Welfare Act, Beltsville, MD**

**<https://www.nal.usda.gov/awic/awic-workshop>**

***March 12-13:***

**Society of Toxicology Annual Meeting, Baltimore, MD**

**<https://www.toxicology.org/index.asp>**

***March 15-16:***

**Labroots Free Neuroscience Virtual Live Conference**

The logo for Labroots, featuring the word "labroots" in a lowercase, sans-serif font. The "lab" is in a light blue color, and "roots" is in a light green color.

**<https://www.labroots.com/virtual-event/neuroscience-2017>**

***March 19-21:***

**PRIMR IACUC Conference, New Orleans, LA**

**<http://www.primr.org/iacuc17/>**



***April 23-27:***

**Jackson Labs Workshop on Colony Management, Bar Harbor, ME**

**[Courses.jax.org](http://Courses.jax.org)**

***April 25-27:***

**Laboratory Animal Management Association (LAMA) Annual Meeting, Seattle, WA**

**<http://www.lama-online.org/events/upcoming-events/>**

***April 27-May 1:***

**Jackson Labs Comprehensive Workshop on Mouse Biometrics, Bar Harbor, ME**

**[Courses.jax.org](http://Courses.jax.org)**



***April 30 - May 4:***

**Institute for Laboratory Animal Management (ILAM) Classes in Memphis, TN**

**<https://www.aalas.org/education/ilam>**

# How We're Planning on Showing our Technicians Some LOVE!



Morehouse School of Medicine is sending their techs to Zoo Atlanta for a behind-the-scenes tour!



In addition, Robbie Champion will give a presentation on speaking up about the integral role technicians play in animal research. Several Atlanta-area institutions will be participating.



EMORY  
UNIVERSITY

Emory's Staff Engagement Council will be planning the DAR Staff Appreciation month events for April 2017:



Last year we planned activities for each week and placed thank you boards in all facilities for anyone to write messages to our staff. On the first week pizzas were hand delivered to each of our 6 facilities. The second week we delivered breakfast to all facilities before 7am!!! On the third week thank you cards and cookies were distributed to each and every

employee of the DAR. To finish out the week our entire department come together for breakfast and then had a grand finale! We gave out whimsical awards, announced the newest employee of the quarter, displayed all of the thank you boards, gifted each employee with a lunch bag and water bottle with our DAR logo as well as a group picture from the previous year's holiday party! At the end we raffled off a ton of items and gift cards then enjoyed a music video mash-up of pictures and short clips of the activities that took place for the month courtesy of Kelli Taylor. We intend to make this year's events just as memorable as last year's!

# Louisiana AALAS 2017 Branch Meeting

## March 16th - 17th



*Announcing  
Our 2017  
Keynote  
Speaker*

**Dr. Temple Grandin**

Thursday, March 16

### **Meeting Location:**

LSUHSC New Orleans - Human Development Center  
411 South Prieur Street  
New Orleans, LA 70112

### **Lodging:**

Holiday Inn - Downtown Superdome  
330 Loyola Avenue  
New Orleans, LA 70112

*For reservations:* Call 1-800-HOLIDAY and refer to the group code LXB, LAB, or LB2  
You may also register online by clicking on the links below.

LXB (does not include breakfast) \$120/night- [LA Branch AALAS- w/o Bkf](#)

LAB (includes breakfast for 1) \$135/night- [LA Branch AALAS- with Bkf for 1](#)

LB2 (includes breakfast for 2) \$150/night- [LA Branch AALAS- with Bkf for 2](#)

**Book by February 12, 2017 to get the discounted rate!**

**For more information, visit: <https://lbaalas.wildapricot.org/event-2262085>**

# WOW! SEALAS was well-represented in the December Issue of LAS Professional!!



## Celebrate the Mouse Launches New Phase

By Liz Rozanski,  
BA

In September the AALAS Foundation launched the latest “Celebrate the Mouse” public outreach program phase. “Celebrate the Mouse” was developed in 2014 to help educate the public about the important role mice and other animals play in discovering treatment options and cures for catastrophic diseases.

Pam Straeter serves as the “Celebrate the Mouse” program committee chair. “It is our hope this project will enhance the ongoing efforts of the Foundation’s mission to showcase the essential role of responsible laboratory animal care and use in science to advance human and animal health,” she said.

Taking the already popular “Celebrate the Mouse” disease awareness lapel pins a step further, the AALAS Foundation has developed a PowerPoint presentation titled “What’s Happening in Breast Cancer Research?”

“The committee’s goal is to highlight a particular disease and showcase biomedical research contributions towards treatments and cures each year,” Straeter said. “In conjunction with this effort, the committee is creating canned PowerPoint presentations for each disease area which are intended for

those who are interested in presenting to the public in support of the Foundation’s ultimate goal.”

The presentation is pre-packaged with speaker notes and is ready to present to the general public, including breast cancer survivor groups, their families, and local community members. AALAS members may request this free presentation from the AALAS Foundation through their website (<http://www.aalasfoundation.org/outreach/celebrate-the-mouse>).

AALAS members conducting eligible outreach events may also request “Celebrate the Mouse” breast cancer lapel pins. Straeter added, “Upon request, the mouse lapel pins, along with an index card detailing some specific contributions, can be provided for those interested in distributing at a public venue as an outreach and educational tool.”

AALAS member James Champion was one of the first to request the PowerPoint and pins. “We are doing a Breast Cancer Awareness Forum at my institute,” Champion said. “Historically, we have cancer survivors tell their tales but this year, we can actually add some research information to the program. I like having a full program with the human



The "Celebrate the Mouse" campaign was the perfect addition to a two-day training event for second year veterinary students at Emory University. Some hands-on time with mice was part of the workshop. *Photo courtesy of Kristy Calderon, Emory University.*

aspect of cancer in addition to the research being conducted to eradicate it. The lapel pins are just a nice gift to hand out as a thank you for participating."

Rebecca Hunter, an AALAS member who works at Emory University, presented the PowerPoint and handed out the pins this past October during a two-day workshop for second-year veterinary technician students. Hunter explained that some of the students were "on the fence" about the use of animals in research. "We hope that the information provided gave the students a little more insight into what we do, and the real, useable outcomes that biomedical research affords to both humans and animals," Hunter said. "It was our goal for the workshop attendees to leave our facility with a greater understanding of the roles of the veterinary technician in lab animal medicine, and to take with them the knowledge that our animals are treated humanely and are loved," Hunter said.

AALAS Foundation Administrator Vicki Campbell said, "All the PowerPoint presentation needs is you and your passion to share the important work being done in biomedical research and the important role mice, and other animals, have in developing catastrophic disease treatment options."

Additional PowerPoint presentations and lapel pins for other disease topics will be released in the future. Up first for 2017 will be heart disease. "This upcoming year we are focusing our attention on heart disease, as so many people are impacted globally and we are very excited to launch the mouse lapel pin with a red tail," Straeter said.

*Liz Rozanski, BA is the Communications Coordinator for AALAS.*

## Using a Mesh Spatula to Handle Fragile Mouse Models

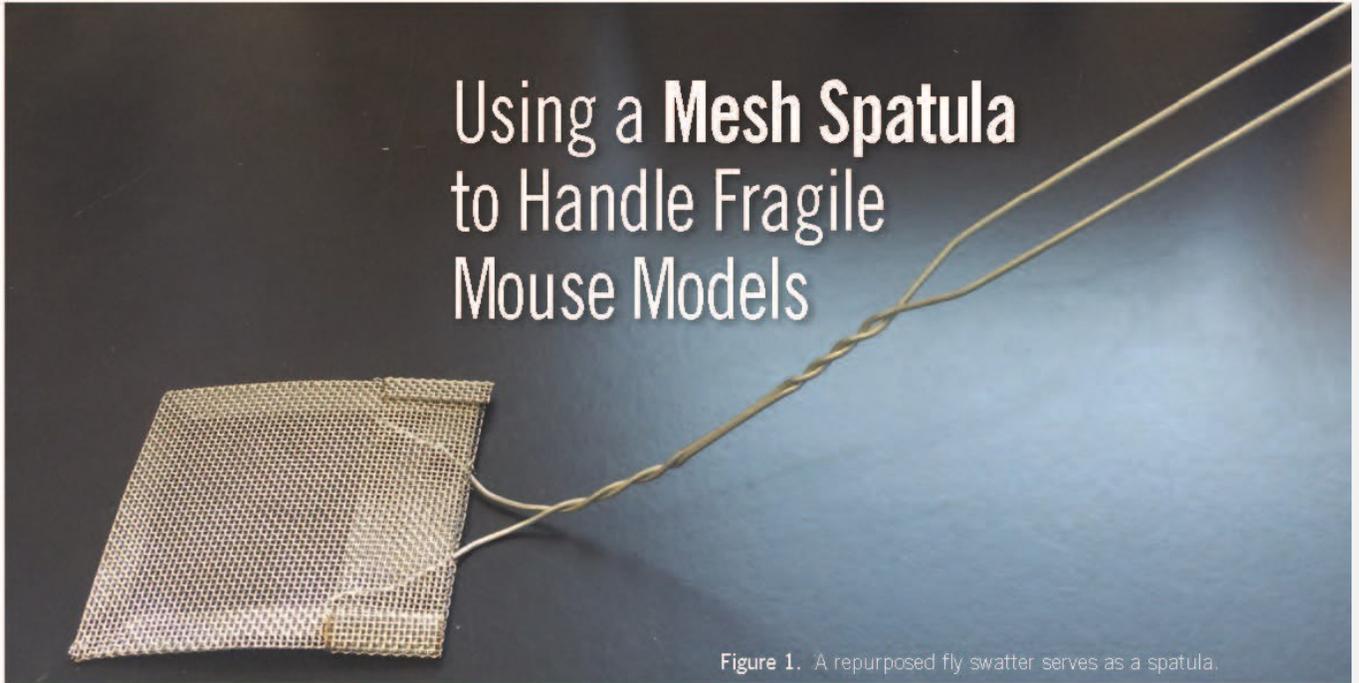


Figure 1. A repurposed fly swatter serves as a spatula.

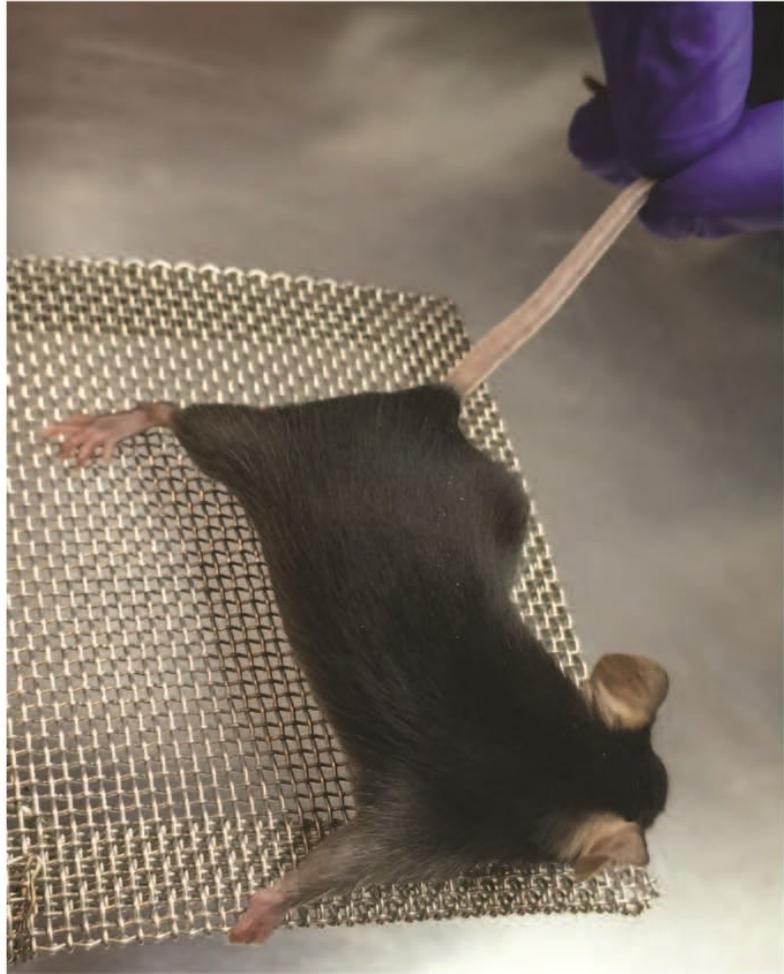
By L.S. Stanek;  
Ryan R. Kelly, BS;  
M.A. McCrackin,  
DVM, PhD, DACVS,  
DACLAM, CMAR;  
and Amanda C.  
LaRue, PhD

The osteogenesis imperfecta murine (*oim*) strain of mouse is an important model system for the study of osteogenesis imperfecta, a familial disease causing brittle bones.<sup>1</sup> Mice with this naturally occurring mutation cannot produce functional  $\alpha 2$  chains that help compose type I collagen, and mice that are homozygous for this condition suffer from skeletal malformations and frequent fractures.<sup>2</sup>

As with all other research animals, the *oim* strain of mouse must be handled by both investigators and husbandry staff in order to serve their experimental purpose and ensure their wellbeing. The most common method of handling mice involves lifting the mice by their tail and restraining them by holding their scruff and tail.<sup>3</sup> Other methods allow the mice to approach the handler, such as permitting them to walk into a small acrylic tunnel or scooping the mice with the handler's cupped hand. These techniques induce a stress response, but less so than the more common method of lifting by the tail.<sup>3</sup> Another method of moving mice is by grasping them with sanitized tongs, often by their scruff.<sup>4</sup> All of these methods can be stressful for the mice, and they often struggle in response to being restrained. Due to the propensity for injury in the *oim* strain of mouse, the force exerted on the mice by these techniques, as well as their own movements as they resist the restraints, can cause fractures or reinjure previous fractures. This creates unnecessary pain and distress and can potentially influence experimental results. To prevent this from occurring, a mesh spatula was developed, allowing *oim* mice to be handled without the physical pressure that could damage their bones.



**Figure 2.** Reflexive curl response allows mice to grip the mesh surface.



**Figure 3.** Gently holding the tail provides additional security during transport.

The spatula was designed with the intention of use in research involving the *oim* strain of mouse; however, the scope of its utility extends beyond these mice. Like this strain, other mice have conditions that require gentle handling. Therefore, research using such mice could benefit from this device. An example of this from our lab is mice with experimentally induced fractures. After surgery to create the fractures, special care is necessary so the break remains in the position called for by the protocol. Resistance to established methods of handling could displace the fracture, which would be both painful for the mouse and detrimental to the study. Thus, the spatula is used in such experiments, just as with the *oim* strain of mouse. This use can be further extended to all mice that are fragile due to genetic or physical circumstances.

### Methods

Research use of *oim* mice and mice with experimentally induced fractures was approved by the Ralph H. Johnson Veterans Affairs Medical Center IACUC. The spatula, a repurposed fly swatter, consists of a rigid rectangle of tight mesh with an

angled handle (Figure 1). The mesh is folded over towards the bottom side to avoid sharp edges that could injure the mice, and the angled handle allows for easy insertion into the cage. Like the hand scooping and acrylic tunnel methods, the spatula allows the mice to approach the handler. After the mice walk on to the spatula, they can be lifted out of the cage. When the spatula is moved, the mice reflexively curl their toes. Due to the mesh, this response allows the mice to grip the surface with their feet, anchoring them in place (Figure 2). For further control, the mice can be lightly held by the tail while on the spatula in order to reduce the tendency for them to move towards or off the edge of the spatula during transport (Figure 3). Then, the mice can walk off the spatula when they reach the desired destination. Like the tongs that are used for handling mice, the spatula can also be sanitized. This can be accomplished with any preferred chemical cleaner that does not leave harmful residue.

### Conclusion

The mesh spatula has multiple advantages for handling the *oim* strain of mouse and mice with fractures as opposed to more

traditional techniques. The device utilizes the natural gripping response of the mice in order to keep them in place, rather than encouraging the mice to move as they resist, reducing both the occurrence of new and re-injury of old fractures. It also allows the mice to approach the handler, which has been shown to be less stressful for mice. Therefore, it has the potential to lessen both pain and distress for these animals as opposed to other methods. The mesh spatula has proven itself to be useful in our lab in handling these fragile mice both before and after they have developed fractures, and has reduced experimental variability induced by pain and distress. Thus, this could be a beneficial tool in future studies utilizing the *oim* or other fragile strains of mice as research subjects.

*The contents of this article do not represent the views of the Department of Veterans Affairs or the United States Government.*

*This work was supported with resources of the Charleston Research Institute (LSS), RHJ VAMC Research Service (MAM, ACL), the Department of Comparative Medicine (LSS, MAM), the Department of Pathology & Laboratory Medicine (RRK, ACL) at MUSC, Charleston, South Carolina, and VA Merit grant #BX000333 (ACL).*

*L.S. Stanek is a Summer Research Intern with the Ralph H. Johnson (RHJ) Veterans Affairs Medical Center (VAMC) Research Service and the Department of Comparative Medicine at the Medical University of South Carolina (MUSC), Charleston, SC. Her work was supported by a stipend from the Charleston Research Institute, Charleston, SC, and VA Merit grant #BX000333 (ACL).*

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*Amanda C. LaRue, PhD is Associate Chief of Staff for Research for the RHJ VAMC Research Service, Professor in the Department of Pathology & Laboratory Medicine at MUSC, and Scientific Director of the Hollings Cancer Center Flow Cytometry and Cell Sorting Shared Resource at MUSC.*

#### REFERENCES

1. Camacho NP, Hou L, Toledano TR, Ilg WA, Brayton CF, Raggio CL, Root L, Boskey AL. 1999. The material basis for reduced mechanical properties in *oim* mice bones. *J Bone Miner Res* 14: 264-272.
2. Sims TJ, Miles CA, Bailey AJ, Camacho NP. 2003. Properties of collagen in *oim* mouse tissues. *Connect Tissue Res* 44: 202-205.
3. Hurst JL, West RS. 2010. Taming anxiety in laboratory mice. *Nat Methods* 7: 825-826.
4. Rollin BE, editor. 1995. The experimental animal in biomedical research: care, husbandry, and well-being-an overview by species. Vol 2. Fort Collins (CO): CRC Press. p 288-9.



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## The *Care* and *Feeding* of Laboratory Animal Personnel

Mentors help your employees thrive.



By Lisa K. Secrest,  
CMAR, RLATG

**M**any times we are so busy concentrating on performing the myriad of tasks to ensure proper animal care that we struggle to create a strategy on creating a more, *human-caring* workplace. A more human workplace is one that promotes an employee's strengths, capabilities, and performance. Focusing more effort on your team will lead to higher engagement and productivity, which in turn will manifest rewards for the animals in our care. Many organizations fail to thrive because their employees are not thriving. The definition of thrive is to grow or develop well or vigorously. The synonyms are full of action: flourish, prosper, burgeon, bloom, blossom, and mushroom. So what does a facility full of "thriving" team members look like? Certainly, it is not the ominous mushroom cloud after a nuclear explosion, but there is a big boom of positivity surrounding the workplace. The kinetic energy is palpable in your hallways because your staff has a purpose, knows their purpose, and acts on that purpose. Employees who are thriving seek opportunities to learn and develop and take the initiative in developing their careers.

This column series has been focused on what can be done to increase employee engagement, productivity, satisfaction, and retention. Motivation, recognition, and training are key components to guiding the staff on the path to engagement, but another factor needs to be added to complete the package and help make your animal care facility a more human-caring workplace.

### **Fourth SOP: Mentoring**

Mentoring is one of the broadest methods of encouraging human growth. Mentoring is a relationship between one person with greater experience, expertise, and wisdom to be a teacher, a counselor, or a guide to another to help that employee to develop professionally and meet exceptional standards of performance. Mentoring can improve

employee satisfaction and retention, enrich new employee initiation, and train your leaders. The best part is that mentoring uses the resources you already have. The more we can do to help our people learn and grow the more effective they will be in their jobs. Mentoring can be an important jumpstart that does not require any financial investment to shift your facility into a more human-caring, thriving workplace.

An employee who has a special person who can invest time, energy, and personal know-how will move forward toward fulfilling their potential. Styles can range from that of an ever-present encourager who helps someone build self-confidence to that of a stern taskmaster who ensures tasks are correctly completed. The mentoring process is a two-way street and to be effective, the mentee has to assume as much responsibility as the mentor. It takes communication and trust on both sides for the process to be beneficial. Most facilities probably have either a formal or informal type of mentoring system already in place. This usually entails a new employee shadowing a seasoned technician or formally assigning that team member to a “buddy” to watch and guide them. This sounds great on paper, but does it work without putting some planning and effort into the selection and pairing process? Have you ensured that the mentor is knowledgeable enough to impart the correct information without shortcuts? Do your pairs respect and listen to each other? Some of the best mentors are people who are excited about the journey in their self-development and understand that their relationship with their apprentice needs to be as a coach and encourager.

### Define Your Objectives

The objectives must be set before starting a formal mentorship program at your institute. Programs will be structured differently depending on if the aim is to develop leaders, teach a skill, or welcome new employees to your organization. Practical considerations during the planning stage can be done by answering these three things:

- **Skills**
  - What specific tasks need to be fortified?
  - Who needs to be coached?
  - Who has the knowledge and experience to be that coach?
- **Frequency**
  - How much time can or should be committed?
- **Duration**
  - Does the time need to be limited to learn a specific task?
  - What intervals need to be scheduled for progress review?

This framework will help you clearly define the boundaries of what the pair can accomplish. One factor vital to remember is whether your program fits your company culture. If your facility temperament is extremely formal, it might be best to have a process in place that defines mentor qualifications and criteria. This is a wonderful way to empower good employees and to give them some extra responsibility where they can shine and position themselves for future promotion. If the facility is small and family-like, it might be okay to match people up and then let them figure out the logistics. A study

performed by Ning Li from the University of Iowa and published in the *Journal of Applied Psychology* in 2015 found that teams work better when the team member who shows the most willingness to go above and beyond their job description is in a position where they come into contact with as many teammates as possible. If these types of employees become engaged as mentors, they will be made more central to other employees and the team is likely to be more motivated. Minimal guidelines still need to be in place otherwise control will be lost and the program can die out. Dr. Lois Zachary of the Leadership Development Services, a group out of Phoenix which focuses on mentorship consultancy, states, “You have to grow it, there’s not a template that you can take from company A to company B.” Whatever your program styles itself on, it will need a supporter who can champion the program and check-up on how well the guidelines are being followed.

If you established your goals and structure, selected your perfectly matched pairs, sent them off to work, and then wondered why your beautifully designed mentor program failed miserably or withered on the vine like an un-watered tomato plant, then you probably missed a crucial step. To achieve positive results, ensure employees learn what mentoring means. Explain why this buddy system is not a waste of time. That involves some training. Most people have different connotations of the word mentoring, so it is critical participants understand the experience’s objectives and expectations. The key to a successful mentoring program boils down to just a few things. First, the leaders in your organization need to be on board and play a role. The endorsement of the program needs to be communicated on all levels, making sure that everyone understands that doing this well is important to the company. Second, start your program gradually. This will allow time for mentoring to embed into your culture. Finally, make sure that you have a way to measure and evaluate the progress of the program goals that were targeted. Was productivity increased? Were there measurable improvements in processes or an individual’s skill level? Have you asked the participants how their experiences went? What can be improved or discarded?

Mentorship is a valuable and effective development tool. The new skills and knowledge attained through this relationship can lead to improved performance, increased visibility, and recognition. The mentor also reaps benefits from this relationship by being recognized as a subject matter expert and emerging leader. Mentoring is a useful and cost-effective way for employers to develop staff and keeps the most knowledgeable and experienced performers engaged and energized.

We can create a more human-caring workplace in our animal facilities by using the tools spelled out in this column series: motivation, recognition, training, and mentoring. Organizations that can boost team members’ positive emotions will have a more engaged workforce with increased performance and results. An environment that empowers our employees to thrive also ensures our laboratory animals will thrive.

*Lisa K. Secrest, CMAR, RLATG is a Training Program Coordinator for Priority One Services.*

# Flesh-Eating Beetles



## Produce Cleaned Rodent Skeletons for Teaching Orthopedic Animal Models

By Ryan R. Kelly, BS and Joseph V. Hying, BS, LAT; Kristi L. Helke, DVM, PhD, DACVP; Amanda C. LaRue, PhD; and M.A. McCrackin, DVM, PhD, DACVS, DACLAM, CMAR

**F**lesh-eating beetles sound like something from a horror movie, but having a colony of these within your research facility can be remarkably useful for preparation of rodent skeletons to the quality of wildlife museum specimens. The dermestid beetle (from the order Coleoptera), more commonly known as the skin beetle, eats flesh from cadavers, leaving cleaned skeletons that can be used to teach anatomy, thereby allowing researchers, students, and veterinary staff to visualize the scale and scope of the skeletons of various vertebrates. The dermestid beetle is preferred over other specimen preparation methods because they eliminate the need for hazardous chemicals and minimize the risk of damaging the specimen. Dermestid beetles are easy to obtain and care for, require little up front capital to start a colony, and do not require permits or IACUC protocols. We have found dermestid beetles to be a valuable tool for providing cleaned rodent skeletons for teaching orthopedic animal models, thereby mitigating the need for live animals for initial training steps and optimizing the use of animals euthanized for purposes unrelated to training.

### Materials and Methods

**Housing and Storage:** It is easy to house and store a dermestid beetle colony. All you need are a hard plastic storage container or aquarium large enough to hold the cadavers intended for processing and a few inches of bedding material (corn cob or wood shavings). The container should be ventilated with mesh to prevent escape of beetles or introduction of foreign organisms into the container and to provide adequate airflow (Figure 1 A-B). The chamber should be kept dark with a relative humidity of 60% to 70% and between 70° and 80° Fahrenheit (F) for optimal colony productivity.<sup>1</sup> Beetles do not eat well in colder temperatures, and they become able to fly in temperatures over 80°F. The proper balance of moisture is necessary to keep the beetles repro-

ducing, while also preventing mold production and mites. In our facility, where our colony is between 250 and 350 beetles, we prepare food (carcasses of 3 naïve mice) for the beetles approximately every other week. The frequency of feeding depends on the size of the colony (monitor the initial feeding to determine amount of food needed).

**Carcass Preparation before Beetle Feeding:** Specimens to be prepared are donated through the vivarium. All specimens must be euthanized according to the 2013 AVMA Guidelines for the Euthanasia of Animals.<sup>2</sup> Euthanasia using CO<sub>2</sub> is ideal for preventing drug residues in tissues. However, beetles consume the tissues and appear unharmed if animals are euthanized using pentobarbital or isoflurane. Before insertion into the beetle chamber, cadavers must have their



**Figure 1 A-B.** (A) Beetle storage containers need to be kept dark and the system must be designed to allow for adequate ventilation. (B) A dermestid beetle is depicted with the floor of the housing unit seen below. Within the housing, the beetles only require corncob bedding and a piece of Styrofoam to hold the specimen, which allows for easy removal after feeding.

skin, organs, and excess tissue removed through the use of forceps and dissection scissors. Carcasses are then dried for 24 to 48 hours in a biosafety cabinet. The skeleton with dried flesh can then be placed in the enclosure and left for the beetles to remove the tissue. Carcasses should be monitored to determine the duration required for beetles to clean the bones. If the end user desires the bones to stay in normal anatomic relationships, the skeleton should be removed before the beetles eat ligaments and tendons. For a mouse, we have found that minimal connective tissue remains approximately 21 days after the carcass is inserted into the chamber.

*Colony Cost:* It is relatively inexpensive to start and maintain a dermestid beetle colony (Table 1). Our beetles were donated from a local colleague, however there are commercial vendors. There are numerous commercial vendors for dermestid beetles. The following link refers the reader to once such commercial source: <http://www.bonesandbugs.com/purchase-dermestid-beetles.html>. For about 100 dollars, your animal facility can start a beetle colony that should propagate itself for many years with proper and consistent care.

### Application for Teaching

Teaching complex rodent orthopedic surgical models to research trainees or staff first requires learning the detailed anatomy of the relevant bones and use of orthopedic equipment. An ideal model would not use living animals, be size

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appropriate, and accurately reflect skeletal anatomy. We used beetle-cleaned mouse skeletons for orthopedic surgical model training. Beetle-cleaned skeletons provided the opportunity for practice of surgical procedures before the need to perform them on live animals. However, one caveat to using these skeletons is that the longer skeletons have dried, the more brittle they become. Very dry skeletons crack and fissure more easily than fresher ones.

Beetle-cleaned mouse pelvis and femurs were used for initial training to master a stabilized nonunion femoral fracture model in mice using the Locking Mouse Nail (RISystems) commercial system.<sup>3</sup> The skeletons were ideal for practicing angle of entry into the medullary cavity and visualizing the scale and ratio of the surgical implants to the bones. This practice led to greater efficiency when performing these surgeries in live animals (Figure 2 A-C). Tibias were used for preclinical training of intraosseous injections for models of bone cancer. The dermestid beetle-cleaned bones provided excellent use of mouse cadavers, exact species anatomy, and specimens conducive to practice with properly sized orthopedic tools and implants. Allowing the surgeon to become familiar with the anatomy leads to better understanding of the scope of the surgery and any manipulations that will be performed, such as optimization of angles and working with unfamiliar rodent skeletal structures, including the large third trochanter on the proximolateral mouse femur compared to other species.

## Conclusion

We have found dermestid beetles to be a valuable tool for providing cleaned rodent skeletons for teaching orthopedic animal models while promoting the 3Rs of animal research,<sup>4</sup> specifically replacing live animals for initial training steps, optimizing the use of animals euthanized for purposes unrelated

to training, and refining surgical techniques before they are used on live animals. In general, dermestid beetle colonies are easy to maintain, affordable, and allow for a method to clean skeletons without chemicals, thus making them a great addition to any research facility.

*The contents of this article do not represent the views of the Department of Veterans Affairs or the United States Government.*

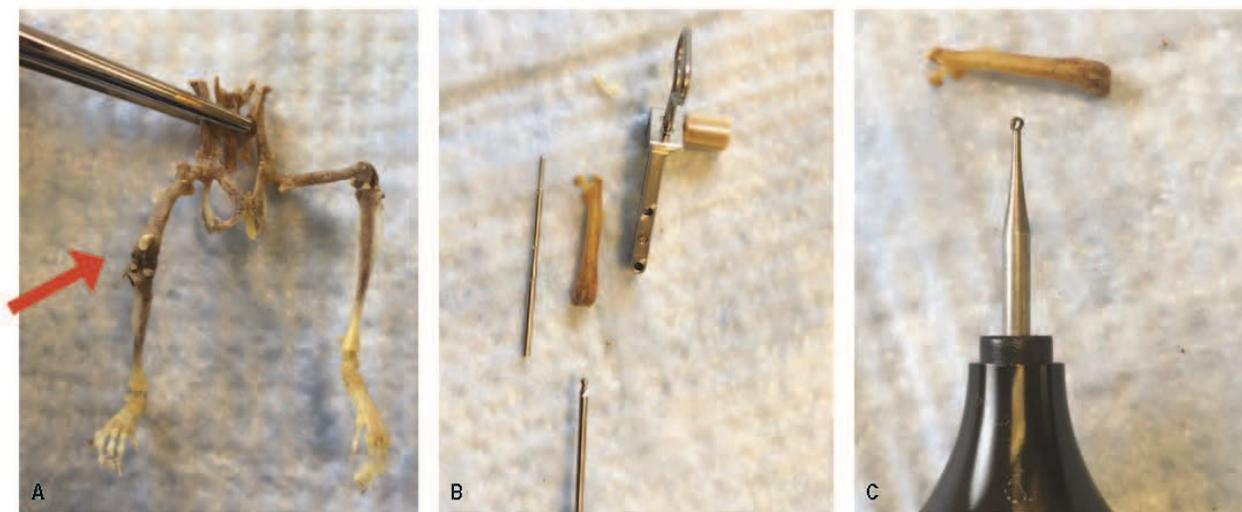
*This work was supported with resources of the Ralph H. Johnson VA Medical Center Research Service, the Veterinary Diagnostic Laboratory of the Division of Laboratory Animal Resources at the Medical University of South Carolina, Charleston, South Carolina, and VA Merit grant # BX000333. This work was presented in poster format at the Annual Forum of the American College of Laboratory Animal Medicine in St. Pete Beach, Florida in May 2016.*

*Ryan Kelly, BS is a PhD candidate under Dr. Amanda C. LaRue in the Department of Pathology and Laboratory Medicine at the Medical University of South Carolina (MUSC), Charleston, SC. His work was supported by VA Merit grant #BX000333 (AGL).*

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*Kristi L. Helke, DVM, PhD, DACVP is an Associate Professor, Departments of Comparative Medicine and Pathology & Laboratory Medicine, and Director of the Veterinary Diagnostic Laboratory at MUSC.*

*Amanda C. LaRue, PhD is the Associate Chief of Staff for Research for the RHJ VAMC Research Service, Professor in the Department of Pathology & Laboratory Medicine and Scientific Director of the Hollings Cancer Center Flow Cytometry and Cell Sorting Shared Resource at MUSC.*



**Figure 2 A-C.** (A) This skeleton allows visualization of the size and scale of the intercondylar notch (red arrow) where the initial entry into the medullary cavity is made using the LockingNail system. (B) An isolated femur alongside surgical tools gives the trainee an idea of scale and an understanding of how the third trochanter may present challenges for placing internal fixation on the proximolateral femur. (C) An isolated femur next to a microdrill burr that is used to create fractures.

EQUIPMENT	SPECIFICS	COST
DermeStid Beetles	A start-up set of ~300 beetles/larvae; colony will grow with use	\$60 (donations are possible)
Container	Plastic storage bin (~18 gallon) with mesh covered ventilation	\$25
Bedding	Corn-cob or wood shavings Styrofoam	\$15/bag
Food	Naïve animals euthanized using CO <sub>2</sub> . Can use dog food.	(donations from vivarium)
<b>TOTAL</b>		~\$100

**Table 1.** Start-up costs for an average dermestid beetle colony.

*M.A. McCrackin, DVM, PhD, DACVS, DACLAM, CMAR is the Veterinary Medical Officer for the RHJ VAMC Research Service, Associate Professor in the Department of Comparative Medicine and Director of the Surgical Research Laboratory at MUSC.*

#### REFERENCES

1. **Ward's Natural Science Establishment.** [Internet]. 2008. Dermestid Beetle 87 W 6270. [Cited 21 June 2016]. Available at: [www.wardsci.com/www.wardsci.com/images/Dermestid Beetle\(1\).pdf](http://www.wardsci.com/www.wardsci.com/images/Dermestid%20Beetle(1).pdf)
2. **Leary S, Underwood W, Anthony R, Cartner S, Corey D, Grandin T, Greenacre C, Gwaltney-Brant S, McCrackin MA, Meyer R, Miller D, Shearer J, Yanong R.** [Internet]. 2013. AVMA Guide lines for the Euthanasia of Animals. [Cited 23 June 2016]. Available at: <https://www.avma.org/KB/Policies/Pages/Euthanasia-Guidelines.aspx>.
3. **Garcia P, Herwerth S, Matthys R, Holstein JH, Histing T, Menger MD, Pohlemann T.** 2011. The LockingMouseNail—a new implant for standardized stable osteosynthesis in mice. *J Surg Res* **169**:220–226.
4. **Russell WMS and Burch RL.** 1959. *The Principles of Humane Experimental Technique.* London (UK): Methuen.

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# Looking Forward

## Trump agenda threatens US legacy of science diplomacy

Concerns mount that the new US president will sideline science's role in international relations.

Alexandra Witze

27 January 2017

A newly minted leader with no experience governing at home or establishing policy abroad now oversees the United States' vast diplomatic enterprise. US President Donald Trump has a deep bench of scientific and technical expertise to tap across multiple government agencies — but it is not clear that he will use it.

Science diplomats are watching warily to see whether the volatile new president will draw on the best available evidence when setting foreign policy. So far, his isolationist tendencies are winning: Trump is reportedly considering whether to pull the United States back from international organizations such as the United Nations. And he is drafting plans to ban immigration from a number of countries across the Middle East.

“Everybody’s worried that we won’t be in the room any more as a voice of reason advocating for evidence-based decision-making, for bringing the best and brightest to the table no matter where they come from or who they are,” says Frances Colón, who until last week was the deputy science adviser at the US Department of State.

For decades, scientists have had a key role in informing US foreign policy, primarily through the state department. The American Association for the Advancement of Science (AAAS) began sending scientists to the department on yearlong placements in 1980, just before Ronald Reagan was elected. The department got its first permanent science adviser in 2000, late in Bill Clinton’s presidency, a position that strengthened under George W. Bush when scientific exchanges were established with nations such as Iraq.



“We need scientists and engineers not just because of their technical expertise but because of their analytical nature, their ability to sift through a lot of different types of information and evidence and weigh them in a rational way,” says Tom Wang, director of the AAAS Center for Science Diplomacy in Washington DC.

Read the whole story at: <http://www.nature.com/news/trump-agenda-threatens-us-legacy-of-science-diplomacy-1.21382>

# Scientists join massive protest against Trump

Researchers at Women's March in Washington DC defend their work as US president takes office.

Sara Reardon

22 January 2017

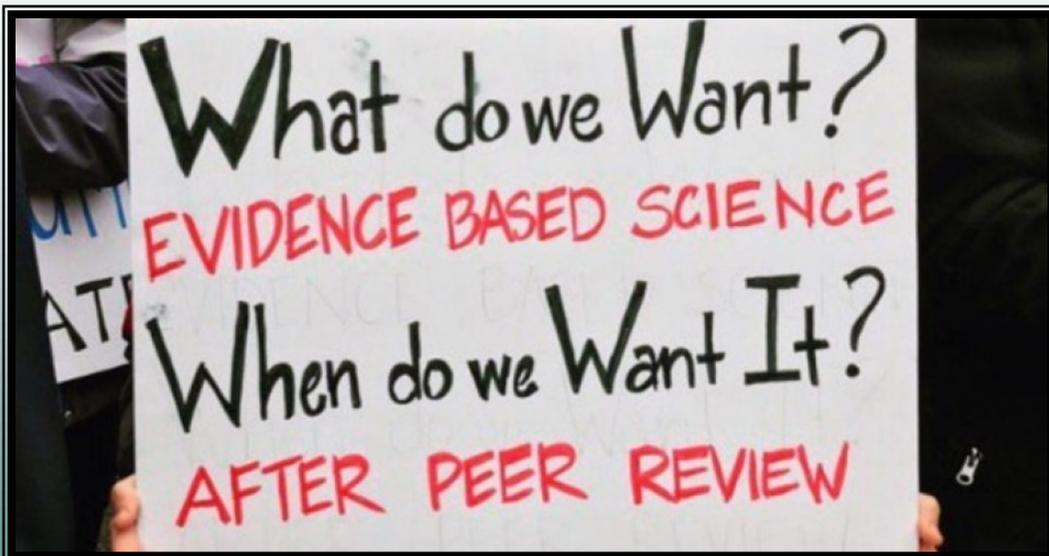
The women in white lab coats didn't expect to be treated like celebrities. The group of scientists, dozens strong, came to Washington DC on 21 January to join the Women's March, a massive protest against the brand-new US President, Donald Trump.

But as they navigated the dense crowd near the National Air and Space Museum, the researchers were greeted by shouts of "We love science!" Eager strangers asked the scientists to pose for photographs with the signs they carried, which bore slogans such as "Stand up 4 Science" and "Science does not discriminate."

The march drew hundreds of thousands of people to the US capital. It was organized to protest against Trump's comments about women and reproductive health, but for many researchers at the event, the president's positions on scientific issues are equally worrisome. Trump, who took office on 20 January, has questioned the science underlying climate change and suggested a link between childhood vaccinations and autism.

The Washington DC march drew a number of US government employees. Several told *Nature* that they were worried for their jobs under the Trump administration, and requested anonymity to avoid violating their agencies' policies about talking to the press.

Whatever the future brings, the scientists' warm reception at the Washington DC march encouraged Kim Cobb, a climate scientist at the Georgia Institute of Technology in Atlanta. "As I heard the cheers and the echoes across the hundreds of thousands of people there today," she said, "what I felt was the presence of an army of people who have my back".



Read the whole story at : [http://www.nature.com/news/scientists-join-massive-protest-against-trump-](http://www.nature.com/news/scientists-join-massive-protest-against-trump-1.21345)

1.21345

# Trump's next move? Scientists struggle with foggy future

The US president reiterated his promise to roll back climate regulations on his first day in office.

Lauren Morello,  
Sara Reardon,  
Jeff Tollefson  
& Alexandra Witze

20 January 2017

Trump's inaugural speech, delivered from a platform overlooking Washington DC's monument-filled National Mall, described a country in decline. The president's pledge to reverse "American carnage" took a markedly different tone from the hopeful address of Barack Obama in 2009, when Obama delighted many scientists by pledging to "restore science to its rightful place".

"The switch of focus to national borders, local concerns and short-term problems should give scientists cause for concern," says Jack Stilgoe, a science-policy expert at University College London, who is on sabbatical at the University of Colorado Boulder. "If 'America first' translates into technological nationalism, then the world and its science will be worse off."

Minutes after Trump took the oath of office, the White House website displayed [the new president's 'America First' energy plan](#). "For too long, we've been held back by burdensome regulations on our energy industry," the document says. "President Trump is committed to eliminating harmful and unnecessary policies such as the Climate Action Plan and the Waters of the U.S. rule."

"I could see a world in which it was equally likely we could wake up tomorrow and find that the president has proposed that the NIH budget be doubled or that the president has proposed that the NIH be eliminated," says Benjamin Corb, director of public affairs at the American Society for Biochemistry and Molecular Biology in Rockville, Maryland. "It's really unknown right now and I think that's a challenge we're trying to deal with."



Read the whole story at: <http://www.nature.com/news/trump-s-next-move-scientists-struggle-with-foggy-future-1.21339>

# Brexit vote drives UK academics to think about leaving

Many researchers also object to proposed higher-education reforms, says survey.

Daniel Cressey

09 January 2017

A survey of more than 1,000 UK-based university staff suggests that the country's vote to leave the European Union could drive an academic exodus.

Forty-two per cent of lecturers and professors surveyed say they are more likely to consider leaving the UK higher-education sector as a result of the referendum outcome. The proportion was even greater (76%) among the non-UK EU citizens in the survey, commissioned by the University and College Union, which represents tens of thousands of academics and is based in London.

Many individual foreign researchers have said they feel less welcome in Britain after the Brexit vote, or that they now see better opportunities abroad. But the latest poll is one of the clearest indications of the widespread nature of this feeling in UK academia.

The survey also reveals huge opposition to the UK government's controversial plans to reform higher education (HE) and research. More than half of academics think that the proposal [to merge the nine UK research funding agencies](#) into one body — currently being debated in Parliament — will have a negative impact. Just 9% think it would be a positive move. Even greater proportions think that there will be negative impacts from other changes, such as plans to make it easier for new universities to be set up.

“The level of concern amongst staff about the bill's plans must be cause for alarm,” said Sally Hunt, the union's general secretary, in a statement. “The government must focus its full attention on dealing with the impacts of Brexit and shelve the divisive HE bill.”



Read the whole story at: <http://www.nature.com/news/brexit-vote-drives-uk-academics-to-think-about-leaving-1.21259>

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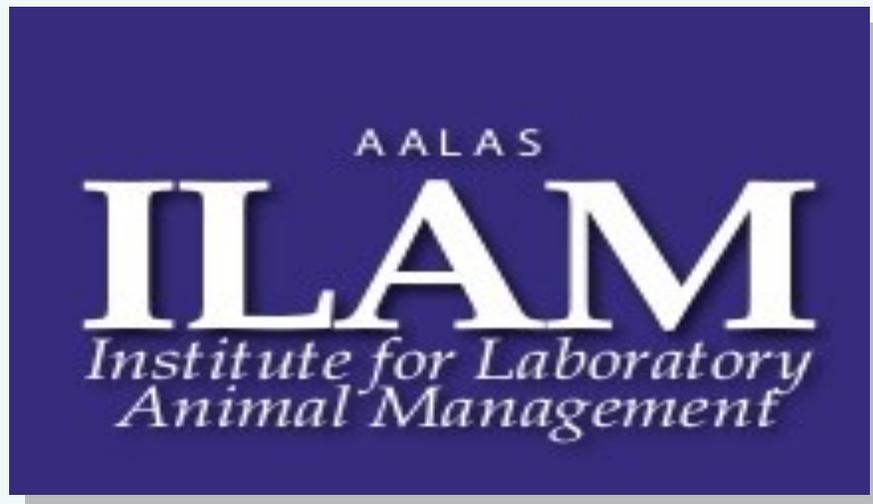
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## Wireless, Freely Behaving Rodent Cage Helps Scientists Collect More Reliable Data



*System uses video game technology to track lab animal behavior*

Instead of building a better mouse trap, Georgia Institute of Technology researchers have built a better mouse cage. They've created a system called EnerCage (Energized Cage) for scientific experiments on awake, freely behaving small animals. It wirelessly powers electronic devices and sensors traditionally used during rodent research experiments, but without the use of interconnect wires or bulky batteries. Their goal is to create as natural an environment within the cage as possible for mice and rats in order for scientists to obtain consistent and reliable results. The EnerCage system also uses Microsoft's Kinect video game technology to track the animals and recognize their activities, automating a process that typically requires researchers to stand and directly observe the rodents or watch countless hours of recorded footage to determine how they react to experiments.

The wirelessly energized cage system was presented this month at the International Conference of the IEEE Engineering in Medicine and Biology Society (EMBC) in Orlando, Florida.

The Georgia Tech EnerCage is wrapped with carefully oriented strips of copper foils that can inductively power the cage and the electronics implanted in, or attached to, one or more animal subjects inside the cage. The system can run indefinitely and collect data without human intervention because of wireless communication and power transmission.

"It's always better to keep an animal in its natural settings with minimum burden or stress to improve the quality of an experiment," said Maysam Ghovanloo, an associate professor in the School of Electrical and Computer Engineering, who developed the EnerCage. "Anything that is abnormal or unnatural may bias the experiment, no matter what experiment in any field. That includes grabbing the animal to attach or detach wires, change batteries or transferring it from one cage to another."

Ghovanloo uses four resonating copper coils to create a homogenous magnetic field inside the cage. The built-in closed loop power control mechanism supplies enough power to compensate for all freely behaving animal subject activities, whether they're standing up, crouching down, or walking around the cage. The small headstage for the animal is also wrapped with resonators to deliver power to a receiver coil.

The Kinect is suspended about three feet above the cage. It has a high-definition camera, an infrared depth camera, and four microphones to record and analyze the animal behavior. It can capture both a two-dimensional high-resolution image of a rat's location and a three-dimensional image that would identify its body posture.

"We're building computer algorithms to determine if the animal is standing, sitting, sleeping, grooming, eating, drinking or doing nothing," said Ghovanloo. "We're hoping to reduce the expensive costs of new drug and medical device development by allowing machines to do mundane, repetitive tasks now assigned to humans."

More than a million people in the USA and more than 35 million worldwide are living with HIV, many of them for years. Although antiretroviral drugs can suppress viral replication, residual low-level infection and the drugs themselves still negatively affect health. The virus integrates into the DNA of immune cells and is thought to lurk in hard-to-eradicate reservoirs.

In the *Science* paper, the antibody the team used is against  $\alpha 4\beta 7$  integrin, which helps T cells find their way to intestinal lymphoid tissues. In 2008, NIAID researchers identified  $\alpha 4\beta 7$  integrin as a cell surface molecule involved in the association of the virus envelope with CD4+ T cells, but the antibody does not appear to directly block viral entry. Previous research has shown that the administration of the same antibody can block SIV transmission in a significant number of rhesus macaques.

The Georgia Tech team is working in partnership with Emory University, hoping to impact the clinical efficacy of deep brain stimulation (DBS). A growing number of clinical trials are using DBS to treat disorders of the central nervous system, such as Parkinson's disease, depression and obsessive compulsive disorder. The cellular mechanisms that contribute to the clinical efficacy of DBS remain largely unknown, however.

Emory's Donald (Tig) Rainnie and his research team use freely moving rodent models to examine the effects of DBS on neural circuits thought to be disrupted in depression. They have tested the EnerCage system.

"The requirement to use a tethered headstage to record neural data and apply the DBS has hindered progress in this field," said Rainnie, a researcher at Emory's Yerkes National Primate Research Center and professor in the Department of Psychiatry and Behavioral Science. "We provided critical feedback, via beta testing of the EnerCage system, on how to maximize the utility of the system for different behavioral applications. We found a key advantage of the EnerCage system is that it will allow researchers to conduct chronic DBS and track associated behavioral changes for days, if not weeks, without disturbing the test animals."

Until now, Rainnie says, that hasn't been possible, and it is key to understanding the long-term benefits of DBS in patients.

The next steps at Georgia Tech are designing EnerCage-compatible implants, such as one for delivering drugs, and expanding the system to a network of dozens of cages that can collect data from multiple animals at the same time.

The conference paper, "A Wirelessly Powered Homecage with Animal Behavior Analysis and Closed-Loop Power Control," is co-authored by Yaoyao Jia, Zheyuan Wang, Daniel Canales, Morgan Tinkler, Chia-Chun Hsu, Teresa E. Madsen and S. Abdollah Mirbozorgi.

*The work is supported in part by the National Science Foundation (ECCS-1407880 and ECCS-1408318) and the National Institute of Health's National Institute of Biomedical Imaging Bioengineering (1R21EB018561). Any opinions, findings, and conclusions or recommendations expressed in this material are those of the authors and do not necessarily reflect the views of the sponsors.*



## Scientists achieve sustained remission in SIV infection

Scientists have shown they can achieve sustained control of infection by HIV's relative SIV (simian immunodeficiency virus) in rhesus macaques by supplementing antiretroviral drugs with an antibody during and after drug treatment.

Sustained control means that when antiretroviral drugs were stopped, the virus did not re-emerge and cause disease. This was the first consistent demonstration of post-treatment immune control in monkeys infected with SIV, without previous vaccination. Long-term post-treatment control of HIV has been reported in only a handful of people treated soon after infection.

Members of the research team, from the Department of Pathology, Emory University School of Medicine, the Yerkes National Primate Research Center and the National Institute of Allergy and Infectious Diseases (NIAID), part of the National Institutes of Health, report that the virus is still present in the bodies of the antibody-treated monkeys. Yet it has stayed below the limit of detectability in their blood, lasting almost two years after withdrawal of antiretroviral drugs.

The results are published in the current issue of *Science*.

The antibody the team used was designed to stop susceptible immune cells from entering intestinal tissues, a hot spot of damage during acute HIV and SIV infection. An analogous human antibody called vedolizumab was FDA-approved for the treatment of Crohn's disease and ulcerative colitis in 2014. Based on the current findings, a pilot clinical trial, testing the safety of vedolizumab and its effect on HIV in people infected with the virus, has begun at NIAID.

"This comes from an idea I had many years ago: stopping CD4+ T cells from circulating into the gut may protect them during acute infection," says senior author Aftab Ansari, PhD, professor of pathology and laboratory medicine at Emory University School of Medicine and Yerkes National Primate Research Center. "But precisely how it works in regulating viral replication is still far from clear. The antibody therapy appears to have helped reconstitute the entire immune system."

The co-first authors of the paper are Emory researcher Siddappa Byrareddy, PhD, now an associate professor at University of Nebraska Medical Center, and James Arthos, PhD, and Claudia Cicala, PhD both of the Laboratory of Immunoregulation. Arthos and Cicala worked under the overall direction of co-author Anthony Fauci, MD, director of NIAID. The study was conducted at Yerkes National Primate Research Center, Emory University. Collaborators at Georgia Tech, University of Manitoba, University of Maryland, University of Michigan and the German Primate Center contributed to the paper.

Several questions remain. How long can apparent remission last? Which parts of the immune system are most important for viral control? And what differences between this experiment and HIV infection of humans might impede translation of this finding into the clinic?

One possibly important difference between this experiment and HIV infection is that the macaques were infected for just five weeks, before beginning a three-month course of antiretroviral drugs. People usually don't discover they are HIV-positive so soon after infection.

At week 9, four weeks after starting on antiretroviral drugs, 18 monkeys began to receive infusions of the  $\alpha 4\beta 7$  antibody or control antibodies, every three weeks. Three developed antibodies against the  $\alpha 4\beta 7$  antibody and were excluded from further study. Drugs were withdrawn at week 18 and antibodies at week 32. When antiretroviral drugs were stopped, SIV came roaring back in the seven control animals. In contrast, six of eight  $\alpha 4\beta 7$ -treated animals showed some rebound of viral levels, but they controlled it within four weeks. The other two never even rebounded.

In the  $\alpha 4\beta 7$ -treated monkeys, the researchers observed a gradual restoration of CD4+ T cells, the main target cells for the virus, and other immune cells. The team used a PET/CT imaging technique, developed by co-authors Philip Santangelo, PhD, at Georgia Tech and Francois Villinger, DVM, PhD, at Yerkes, to visualize CD4+ T cells throughout the body.

Also, in the  $\alpha 4\beta 7$ -treated monkeys, the team did not see neutralizing antibodies. HIV vaccine designers have made a goal of stimulating neutralizing antibodies, which may be able to prevent a nascent viral infection. However, the researchers did see non-neutralizing antibodies against part of the envelope protein of SIV called the V2 loop. Antibodies against the V2 loop of HIV were beneficial in the RV144 study in Thailand, the only HIV vaccine study to demonstrate partial protection against infection.

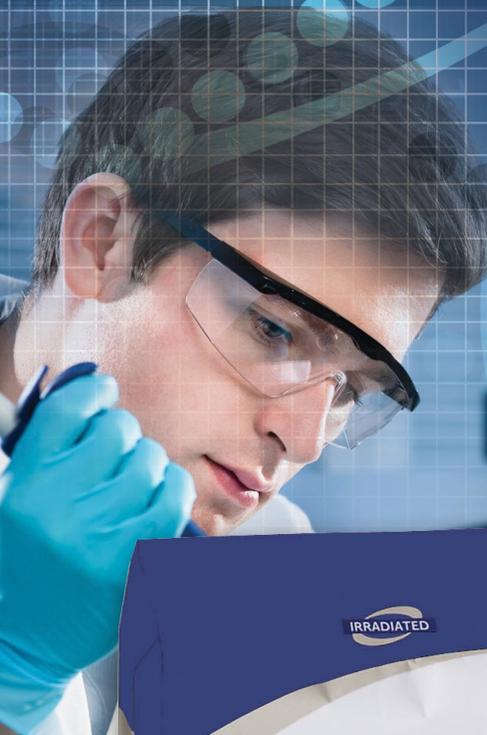
"This finding could become a blueprint for an alternative therapy for HIV, which could make it so someone would not need to continuously take anti-retroviral drugs," Ansari says. "It could also help us craft more effective vaccines. We need to know more about how  $\alpha 4\beta 7$  antibody treatment exerts its effects."

Additional experiments are planned to determine which parts of the  $\alpha 4\beta 7$ -treated macaques' immune systems are critical for maintaining control of SIV, he adds.

Before withdrawal of antiretroviral drugs, the  $\alpha 4\beta 7$ -treated animals showed a restoration of the levels of retinoic acid, a derivative of vitamin A, and other immune regulators. Potentially, biomarkers like these could help predict whether someone's immune system is ready for stopping anti-retrovirals.

The research was supported by the National Institute of Allergy and Infectious Diseases (AI098628, AI111907, Intramural) the National Institute of Child Health and Human Development (RO1HD077260), the Food and Drug Administration (U01FD005266) and the National Institutes of Health's Office of Research Infrastructure Programs (Primate centers: P51OD11132).

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# NABR's Long-Time President Announces Retirement



After serving 37 years as NABR's first and only President, Frankie Trull has announced her retirement, effective December 31, 2016. "With mixed emotions I informed the NABR Board of Directors yesterday that I plan to retire at year's end. The animal research issue at times can be challenging, but I have always believed deeply in our mission. It has been an exciting and interesting career and has allowed me to work with caring, accomplished and committed people. For that, I am most grateful."

During her tenure, NABR played a key role in the 1985 Amendments to the Animal Welfare Act, and the passage of both the 1991 Animal Enterprise Protection Act and the 2006 Animal Enterprise Terrorism Act. In 2002, she also developed and implemented the strategy to exempt rats, mice and birds from the Animal Welfare Act. "I am most proud of NABR's record on Capitol Hill. NABR has never suffered a legislative defeat and has successfully implemented every one of the research community's legislative initiatives affecting animal research. Without outstanding NABR staff and the cooperation and participation of the NABR members these accomplishments would not have been possible."

Trull offered the following remarks to the NABR Board, "It has been my privilege to represent a community committed to improving the lives of both people and animals through the alleviation of suffering. I hope in some small way, my work at NABR has made a difference in this mission".

Frankie plans to spend time travelling with friends and enjoying her Virginia farm with her cats, dogs, horses and cows. If you'd like to send Frankie well wishes, please email her at [frull@nabr.org](mailto:frull@nabr.org).

## Matthew Bailey Voted NABR's New President

At NABR's annual Board meeting on September 7, 2016, the Board of Directors elected Matt Bailey NABR's new President, effective January 1, 2017. Matt has been with NABR since 2005 and has served as Executive Vice President since 2015. Originally from Arkansas, Matt's Washington career began in 1996, and during that time he has served in roles in the Executive Branch and the Legislative Branch alongside both Democrats and Republicans. After serving as a congressional liaison for the U.S. Department of Commerce's National Institutes of Standards and Technology, Mr. Bailey joined NABR in part to assist with the effort to pass the 2006 Animal Enterprise Terrorism Act. For more than a decade, Mr. Bailey has worked diligently to educate policy makers about the irreplaceable value of animal research and has been instrumental in the steady growth of NABR.

Bailey offered the following remarks to the NABR board, "A decade at NABR has allowed me to meet people across the spectrum, most notably, those who are suffering and those who are seeking cures."

He added, "As an impassioned advocate for science, I share Frankie's long-held assertion that disease knows no political affiliation. It is my sincere hope that in this new role I can play a small but important part in assisting the medical research community with its mission to develop much needed treatments and cures for people and their pets."

"Please join me in congratulating Frankie on her retirement and thanking her for her unparalleled leadership and immeasurable contributions to the advancement of biomedical research over the last 37 years."

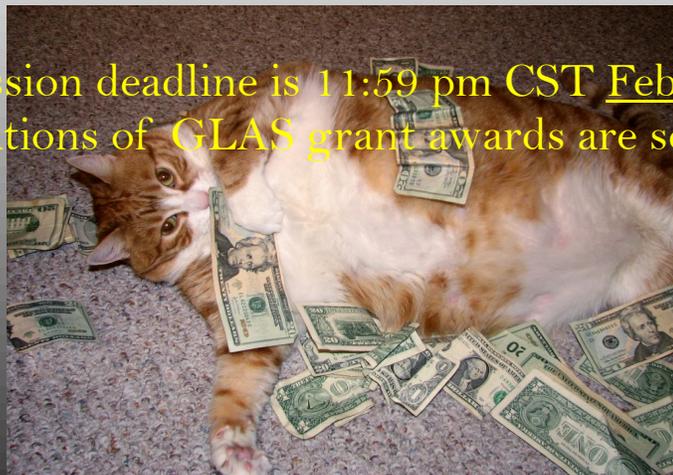


## Applications Available December 1st!

The GLAS Program provides competitive short-term research grants in the laboratory animal science field. Current AALAS members are invited to apply for one-year grants of ***up to \$50,000*** (Standard Grant) or \$7,500 (Small Grant). **The principal investigator (PI) must be an AALAS member** but Co-PIs need not be members. PIs are strongly encouraged to include collaboration with a research scientist in their proposals.

Examples of research interest are as follows: environmental conditions; housing and enrichment; pain and distress; health and welfare; euthanasia; and advancements in animal care and use. Refer to previous awards for examples of the kind of research supported.

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- Sanitize animal rooms, cages, and other equipment to maintain a healthy environment for animals. Operate
- sanitizing equipment, environmental housing equipment and research related equipment.

### **Basic Qualifications:**

- **Education:** Technical Diploma, Associates Degree or two years college course work or equivalent combination of
- education and experience
- **Work Experience:** One to two years job related experience
- **Certifications:** N/A
- **Skills:** This job requires basic knowledge of research lab equipment and support processes and practices. Includes
- skill in data organization, statistical analysis and use of statistical and scientific computer applications.

### **Preferred Qualifications:**

- **Preferred Education:** N/A
- **Preferred Work Experience:** One or more years of rodent or livestock experience preferred.
- **Preferred Certifications:** N/A
- **Preferred Skills:** N/A

**Additional Information:**

Additional tasks may include:

- Provide daily care to laboratory animals including feeding, watering, and cage cleaning.
- Maintain accurate daily records of animal health as well as all SOP and regulatory required documents.
- Sanitize animal rooms, cages, and other equipment in order to maintain a healthy environment for animals.
- Operate sanitizing equipment, environmental housing equipment and research related equipment.
- Assist with research studies as necessary
- Under veterinary supervision, administer veterinary treatments to laboratory animals. This would include but is not limited to oral, injectable, and topical medications.
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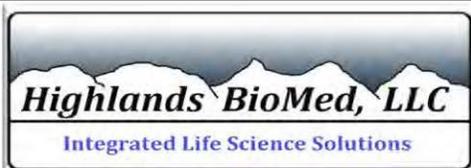


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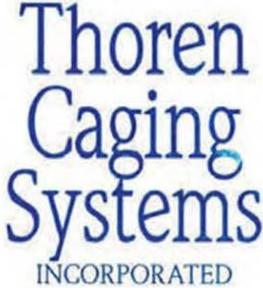
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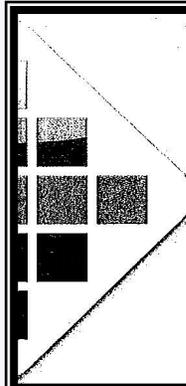
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