

AAALAC International Fellowship Report

by Theresa Cunningham-Faughnan

I was the 2019 U.S. recipient of the AAALAC International Fellowship Award and this was an incredible once-in-a-lifetime experience to meet, talk with, and learn from U.K. lab animal colleagues. I visited six prestigious research institutions in England and the hosts at each facility prepared a day of learning for me where I toured various areas, engaged in stimulating discussions, and met various research staff and Home Office inspectors. The fellowship also includes attendance at the International Animal Technology Congress, think National AALAS style meeting.

The first facility I had the honor to visit was The Francis Crick Institute in London where I saw the most collaborative scientific environment I have ever seen as soon as I walked through the front doors. The open concept of laboratory space and the way different disciplines collaborate together was quite impressive (figure 1). I toured the experimental facilities, aquatics and a very impressive imaging center. I spent the day visiting different animal areas, talking with animal facility staff who answered so many of my questions and enjoyed a luncheon with staff members with various position titles who took the time to explain to me their role and how the research process works. I was amazed to learn about the U.K. Home Office and how the protocol process works in the U.K.. In the U.K., the government gives the final approval on all animal research protocols including mouse, rat and bird experiments. The facility's committee (like the IACUC) does need to review and approve studies, but the final approval must come from the government's Home Office. Animal welfare and the severity of pain and pain management is a top priority!

That night I boarded a train and headed down South to Salisbury and the next day I visited the Centre for Macaques. I met the incredibly dedicated staff members who care for the monkeys each day. Their enclosures were connected by rooms with large colonies of monkeys living together. All the enclosures had large windows and the monkeys could see outside and the sun streams through the glass and the animals enjoy basking in the sunlight. I enjoyed interacting with macaques which I had not done in many years since working with them in the U.S. in cancer research. It was nice to be around them again and I enjoyed giving them enrichment items and watching them interact with each other (figure 2). It was a very memorable day spent at the facility and before I left to head back to London I was able to stop at Stonehenge which was close by to see the ancient structures before sunset. (figure 3)



figure 1



figure 2



figure 3

The next morning in London, I attended a morning meeting at the organization called Understanding Animal Research (UAR) and learning from this fantastic organization about their public outreach efforts in the U.K., and also the U.K. public's perception on animal research. I was surprised to learn how open the U.K. facilities are in regards to animal research. There is animal research information found on many organizational websites and many institutions have days during the year where the public is allowed to come in and see the facility. The UAR group talked to me about the Concordat on Openness on Animal Research which in 2012, many organizations involved in animal research signed. The Concordat sets out how they will be more open about the ways in which they use animals in research in the U.K., with the objective to ensure members of the public have accurate and up-to-date information on animal research. Over 120 U.K. organizations have signed the Concordat! How impressive this was to learn about and made me think about the U.S. and how great it would be if we had something like this. But a Concordat would mean that we have to be more open and transparent in the U.S. about our use of research animals. It is also impressive to note that the public approval rating for animal research in the U.K. is over 70%, whereas in the U.S. it is just over 50%.

After that meeting, I traveled a short distance to Kings College London to meet with the Biological Services Director and afterwards I had a tour of an impressive Zebra fish facility for the afternoon. Seeing the large 3000+ tank zebra fish colony was a great learning experience (figure 4). I have not worked with Zebra fish before so learning about these animals, the research studies, and the overall operation of the facility was enlightening. The manager of the facility was exceptionally knowledgeable and answered a barrage of questions I had about the fish, the research, and the facility operations.

Early the next day I headed by train to Cambridge and spent the day at the Medical Research Council's (MRC) Laboratory of Molecular Biology (LMB). The MRC funds over 1 billion dollars in medical research and is the largest funding source in the U.K., it is similar to our National Institutes of Health (NIH) but the NIH has a much larger budget for funding medical research, but we are also a much larger country. I spent the morning in a conference room with staff members and learned more about the Named Persons in the facility, which are the roles which must be filled in each research institution in the U.K. such as the Named Veterinary Surgeon, Named Animal Care and Welfare Officer, Named Training and Competency Officer and the Named Information Officer. These roles are required by the government's Home Office and each named person in the facility has a very specific job responsibility to oversee. As an example, the Named Animal Care and Welfare Officer is responsible for overseeing the welfare and care of the animals in the establishment. I was surprised to learn that this person does not have to be a veterinarian. I learned about the emphasis on refinement at the MRC's LMB facility and I met an exceptional group of people who really care about the health and well-being of the rodents. I also saw a detailed database used for training staff which I thought would be great to have in my own place! I toured an impressive barrier facility for mice and interacted with very knowledgeable staff. I was able to tour two buildings and see how they perform the non-tail method of cage changing and instead use the tunnel method and mice go into an enrichment tunnel and that tunnel is relocated into the new cage. And I also learned more about discretionary cage changes which has cut down on mouse aggression. I also watched an ultrasound on mice for pregnancy determination, microinjection demonstrations, a non-surgical embryo transfer technique, and saw interesting grasshopper mice! That night I had a lovely dinner with some staff of the LMB and they took me to The Eagle Pub which is an historic place in Cambridge dating back to 1525. This is the place where Watson and Crick would meet and relax in the early 1950's, and surely discussed their theories on DNA.



figure 4

The next morning I arrived at Cambridge University. I was greeted by my host for the day and spent the entire day along-side him learning more about the prestigious Cambridge University. These are colleges where some of the

brightest people have studied, such as Isaac Newton, Charles Darwin, Jane Goodall, and Stephen Hawking to name a few. I spent the entire day in Cambridge, seeing different buildings and meeting different scientists, research staff and animal facility staff. I met macaques which are from the CFM breeding facility and talked with a dedicated research technician who told me how she interacts with the monkeys each day and I witnessed the bond which has developed between her and the monkeys. They trust her and look for her attention, and she knows their personalities so well. I visited an incredible marmoset colony in the veterinary school with housing areas that staff can walk into, and it was incredible to be able to walk into an enclosure with these monkeys and feed treats, an experience I will not forget. The father marmoset is the nurturer and is the one who carries the young around on his back (figure 5). At Cambridge University, studies involving cichlid fish are conducted, and their aquatics room is quite different from a Zebra fish room. These fish are amazing because they have evolved into over 850 species in an astonishing variety of related forms, which is a great example of the power of natural selection. I also saw outdoor facilities where wild birds are studied in behavior research in nice outdoor enclosures, these birds are forever hiding pebbles and other objects all around the enclosure.



figure 5

It was now the weekend where I had time of my own and was able to walk around Cambridge and see this beautiful historic city. I found a park in the middle of the city where farm animals freely roam around. You can find students sitting and studying and the animals walk all around. As soon as I walked into the area where I saw cows, they came right over to me and I enjoyed petting and interacting with them (figure 6). There are some metal bars on the ground at the park gate entrances and the animals will not cross over them with their hooves, so they stay in the large park area, with plenty of room to roam and graze. They have the Cam River that runs through Cambridge and you can sit in a wooden boat called a Punt and have a chauffeur take you on a river tour using a long pole to guide the punt along the river. Along the river one can see the wooden mathematical foot bridge which connects two parts of Queens College and it was built in 1749. It appears to be an arch, but it is composed entirely of straight timbers and it is a sophisticated engineering design (figure 7)



figure 6

On Monday, which was the last day for visiting a research facility, I spent the day at the Wellcome Trust Sanger Institute, a modern well-run institute which was founded in 1993. There are very impressive advances in genomic research which has happened there, leading to a new understanding of genomes and their role in biology. I met very knowledgeable staff members and saw mice, zebra fish and frogs and watched a research technician perform her injections with the frogs. I also spent time seeing an impressive database, and also spent time with the Transgenic Technologies Group which provides DNA and ES cell micro-injection and mouse cryopreservation services. I have seen microinjection core



figure 7

laboratories before, but here I learned so much about different specialized services and how they are performed. I saw amazing equipment and jotted down some information to take back to the U.S. with me. I saw nice anesthesia warming platforms which swivel and scavenge gas at the same time in the lab and I knew this was something which would be great to have back in my facility. I also was able to spend time in a cage-wash area with amazing robotic equipment and talked with the staff who manage this area. I was impressed with the emphasis put on ergonomics and employee safety.

The next morning I took the railway to Liverpool (of course home of the Beatles) where the International Animal Technology (IAT) Congress would be begin and last until Friday morning breakfast. This was the 33rd Annual IAT meeting and I was honored to be a part of it and saw familiar faces from the week before. I attended many different scientific talks, and was able to attend three different workshops. On Wednesday I gave a 30-minute presentation on “Expanding the 3R’s: Remembering the Animals and Respecting Staff Emotions.” The talk discussed the importance of acknowledging animal use and ways to remember the animals used in facilities, and I also discussed the emotional stress of working in the field and ways to address this stress. Compassion fatigue in the laboratory animal industry affects so many in the field and even in the U.K., dissonance in the workplace and compassion fatigue is being addressed more. After my talk I walked through the poster area. The poster and vendor area at the Congress is much like you see at a National AALAS meeting in the U.S., just on a smaller scale. (figure 8) The vendor area was filled with lots of good take-home information, and talking with the vendors was quite valuable since I saw some products which were new to me. I am so impressed in how much time is spent in the U.K. on refinement for animals and there were vendor items and posters there to prove it. Posters focusing on using tunnels to change instead of tail handling mice, subcuticular stitches instead of skin clips in rats, refinement to handling chickens in research, ferret enrichment, and looking at wooden enrichment for Syrian hamsters. There is a real sense of camaraderie at the IAT. Attendees are provided with all their meals at the Congress so there is so much time spent together talking and sharing ideas and on the last night there is a large Gala dinner for all attendees with dinner and dancing (figure 9). I was also able to talk with the Home Office inspectors at the IAT and was impressed at how they were so engaged with technicians and facility staff, and hosted workshops to help them learn more. Friday brought the close of the IAT Congress and I headed back to London, took in a last few sites of this amazing city and the next day I boarded a plane back to New York. My head was filled with new ideas and a motivation to try to improve on animal welfare whenever possible. This was an incredible learning experience and I met some wonderful experienced and knowledgeable U.K. colleagues.



figure 8



figure 9

With my time in the U.K., I realized the similarities in animal research compared to the U.S., and also the differences. The U.K. has a system where the government gives the final approval on protocols which is quite different

than the U.S. system where the institutions are charged with reviewing and giving final approval for studies. I also found the U.K. to be more focused on the 3R's of research, and refinement was surely a main focus in the facilities I visited in the U.K.. The National Centre for the Replacement, Refinement and Reduction of Animals in Research (NC3R's) is based in London and this organization collaborates with scientists and other organizations across the life sciences to support the commitment to the 3R's. I found the U.K. to be very focused on the welfare of animals with animal technicians very engaged in this process, more transparent on their use of animals and providing the public with information on their animal research, including rodent experiments. This stands in sharp contrast to the U.S. where the U.S. excludes purpose-bred rats and mice from federal Animal Welfare Act coverage. As someone who has worked in animal research for over 30 years, who has always believed that purpose-bred rats and mice should be covered under the Animal Welfare Act, and who strives to keep animal welfare a top priority, I feel the U.S. can learn from our U.K. colleagues. I will be forever impressed with the U.K.'s level of care and reporting for all research animals. The U.S. does a very good job with caring for research animals and there are so many dedicated staff members caring for the animals in U.S. facilities, but I think we can do better, especially with purpose-bred mice and rats, and more transparency with the public on animals used in research.

It is thanks to AAALAC International, with the support from the Datesand Group, Priority One Services, NIH and the MRC for this incredible opportunity for career growth, sharing and learning in the field of laboratory animal science! I have gained so much knowledge and I plan to share what I have learned with my U.S. colleagues. I encourage others to apply, or to nominate or support someone for this Fellowship Award. I thank my hosts at the various facilities I visited who helped organize my day, and a very special thanks to all the staff of the institutions I visited for sharing their time, knowledge and expertise with me!