The AAALAC INTERNATIONAL TECHNICAL FELLOWSHIP AWARD 2008*

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The AAALAC INTERNATIONAL TECHNICAL FELLOWSHIP is awarded on an annual basis to recognise two outstanding international animal technologists, who have made (or have the potential to make) significant contributions to the field of laboratory animal care and use. One IAT Registered (R.AntTech) U.K. nominee, and one AALAS Registered (RALAT, RLAT, RLATG, CMAR) American nominee are selected each year. (The award is presented by the Association for Assessment and Accreditation of Laboratory Animal Care International(AAALAC) through a grant by Priority One Services, Inc. and in cooperation with AALAS, IAT, NC3Rs, the Medical Research Council and the National Institutes of Health, and is valued at more than £3000.)

As the 2008 U.K. Fellow, I was privileged to receive a week-long guest visit to the National Institutes of Health (NIH) in Bethesda, which is one of the most prestigious biomedical research facilities in the U.S.A., followed by attendance at the AALAS National meeting in Indianapolis, which is one of the largest laboratory animal science and technology meetings of its kind, attracting in excess of 4000 delegates annually. Also by pure coincidence my visit to America’s Capital City coincided with the week of what was going to be one of the major milestones in the country’s political history. This was very apparent on the weekend of my arrival, and particularly during my whistle stop tour of some of Washington’s major attractions on Sunday (my only free day during my visit), when I managed to cram in visits to Capitol Hill, The Botanical Gardens, The Smithsonian Institute, National Air & Space Museum and of course The White House. Washington is a place I really need to return to one day and actually spend some quality time looking at its wonderful exhibitions. I certainly would recommend it as a great city to add to any holiday itinerary.

The NIH Experience; Monday, 3rd – Friday 7th November, 2008

Location - Bethesda, Maryland

The National Institutes of Health (NIH) campus is located in Bethesda, Maryland. Most of the Institutes house their Divisions of Intramural Research on this campus spread out among various buildings. The campus is located between Old Georgetown Road on the west, Wisconsin Avenue on the east, West Cedar Lane on the North, and downtown Bethesda on the south. The National Naval Medical Centre is located directly across Wisconsin Ave. from the campus (which I was told is used by the President of the United States) and the Washington, D.C. border is only several miles south. The Medical Centre Washington Metro stop is located just beyond the campus fence along Wisconsin Ave.

The Bethesda campus has been occupied since 1938 when the original National Institute of Health began to expand outside of Washington, D.C. The Clinical Centre opened in 1953 with 540 beds, thus allowing for clinical research. Launched in the wake of Nazi medical experiments done during World War II, research protocols here fell under ethical review by a review board.

I was to spend my first week at the NIH National Eye Institute located in the Silvio O Conte Building named after the late Congressman Silvio O. Conte who through his interests in the future benefits of polymer research, created the first National Centre for Polymer Research in Amherst, which was further boosted by the state government’s decision to designate the University’s polymer research effort as a regional "Centre of Excellence." The building was named in his honour as the Silvio O. Conte Polymer Research Centre. But as important as strategic materials were to Silvio Conte, there was one concern that he held even higher—his love for the environment. As a practicing environmentalist, he was convinced that the researchers at UMass Amherst were on the right track in developing truly biodegradable plastics, encouraging recycling efforts, and inventing new environmentally safe processes for producing super strong polymers.
Security

As a federal government facility housing sensitive research, the Bethesda campus has very strict security measures (operated by its own police department) for the safety of its employees, patients, and visitors (similar to those used at major international airports). A Department of Health and Human Services identification card is needed for immediate access, visitors must have a government issued photo ID for a pass, and their vehicles and/or persons undergo inspections. I had to present my passport for access onto the site each day during my visit it is certainly the most intense entry system I have come across in any of the many research establishments I have ever visited. There was also local security in the building I was working in.

History:
The National Institutes of Health (NIH) is an agency of the United States Department of Health and Human Services and is the primary agency of the United States government responsible for biomedical and health-related research. Its science and engineering counterpart is the National Science Foundation.

As of 2003, the Institutes are responsible for 28%—about $28 billion—of the total biomedical research funding spent annually in the U.S., with most of the rest coming from industry. The NIH is divided into two parts: the "Extramural" parts of NIH are responsible for the funding of biomedical research outside of NIH, while the "Intramural" parts of NIH conduct research. Intramural research is primarily conducted at the main campus in Bethesda in Montgomery County Maryland and the surrounding communities. The National Institute of Ageing and the National Institute on Drug Abuse are located in Baltimore, Maryland, and the National Institute of Environmental Health Sciences is in Research Triangle, North Carolina. The National Institute of Allergy and Infectious Diseases (NIAID) maintain Rocky Mountain Labs in Hamilton, Montana which emphasizes virology.

The predecessor of the NIH began in 1887 as the Laboratory of Hygiene. It grew and was reorganized in 1930 by the Ransdell Act into the National Institute of Health (singular at the time). Today it is one of the world's foremost medical research centres, and the Federal focal point for medical research in the U.S. The NIH, comprising 27 separate Institutes, centres and the Office of the Director, is part of the United States Department of Health and Human Services. The current NIH Acting Director is Raynard Kington.

The goal of NIH research is to acquire new knowledge to help prevent, detect, diagnose, and treat disease and disability—from the rarest genetic disorder to the common cold. The NIH mission is to uncover new knowledge that will lead to better health for everyone. NIH works toward that mission by: conducting research in its own laboratories; supporting the research of non-Federal scientists in universities, medical schools, hospitals, and research institutions throughout the country and abroad; helping in the training of research investigators; and fostering communication of medical and health sciences information.

Having read the detailed reports of previous Fellows, I was looking forward to my visit with great interest. When I arrived at the Central Animal Facility I was greeted by the Animal Facility Administrator for the National Eye Institute and National Institute of Mental Health, as well as one of the trustees of the AAALAC Fellowship. I was introduced to the Animal Facility Management Team, and given an overview of the NIH and how the Institutes functioned.

The six Institutes are as follows:

- National Institute of Mental Health
- National Eye Institute
- National Institute of Child Health
- National Institute of Neurological Disorders
- National Institute of Dental and Craniofacial Research
- National Human Genome Research Institute

Each Institute has its own Institutional Animal Care & Use Committee (IACUC) reporting through the Facility Veterinarian.

Unlike in the U.K., the national legislation, namely the “Animal Welfare Act” (AWA), does not protect birds and rodents being used for scientific research. Instead this research is managed at an institutional level by the Institutional Animal Care & Use Committee (IACUC). All of NIH and its associated animal facilities are AAALAC Accredited and have participated in the accreditation program for a number of decades. To earn AAALAC accreditation, a research programme must undergo periodic internal assessments and rigorous evaluations by independent panels of experts from around the world. An accredited programme must conform to the principles outlined in the Guide for the Care and Use of Laboratory Animals (“The Guide”). AAALAC Accreditation is widely accepted as a sign of quality symbolising an institution’s commitment to responsible animal care and use, whilst also enhancing the overall quality of science and promotion of the validity of the research for which the animals are used within institutional programmes.
What does the programme at NIH entail, and how is it structured for the visiting Fellow?

If the reader (or future applicants?) can envisage working in a large multi-discipline animal facility of their own, and inviting a visitor to join their organisation to get a balanced overview and some active involvement in the facilities operations for five working days—bundled in with visits to a number of external collaborators, organisations, places of interest and an excellent social package—that is exactly what the Management Team in the Central Animal Facility set out to achieve for me as the visiting Fellow. It seems that the team set themselves a challenge to meet their own high expectations (whilst still carrying on with their own tasks), and also to create a formidable programme with very precise time schedules which would achieve the final goal of professional development and sharing to benefit all. The also built in time to enjoy a social programme.

Day 1 - Monday 3rd November, 2008
Work programme
NIH Overview - Office of Animal Care and Use
Priority One Services Overview/ Government Partnership
Tour through the Central Animal Facility (CAF)
Small Animal Training for Study Investigators – Facility Veterinarian
Large Animal Training
Meet & Greet Lunch – Facility management, research and technical team
Meeting: Overview of the Central Animal Facility (CAF) Program

Social programme- Evening
Attend an American Football Game - Washington Red Skins versus The Pittsburgh Steelers

Day 2 - Tuesday, 4th November, 2008 (Presidential Election Day)
Work programme
Welcome/Continental Breakfast
SOP training on Surgery Support
Surgery Support Experience
Reflection/Feedback Session
Training and Quality Assurance Program Overview Session

Social programme- Evening
Personal Time

Day 3 - Wednesday 5th November, 2008
Work programme
SOP training on Facility Support Services
Overview of Cage Processing Area
Reflection/Feedback Session

Travel off site;
AAALAC National Office Visit , Frederick, MD - Working Lunch Meeting & Discussion
National Aquarium Baltimore, MD - Behind the scenes tour of the Aquarium

Social programme- Evening
ESPN Sports Cafe - Baltimore

Day 4 – Thursday 6th November, 2008
Work programme
SOP training on Small & Large Animals
Large Animal Experience
Small Animal Experience
Reflection/Feedback Session

Travel off site;
Tour of Poolesville Facility - Facility Manager

Social programme- Evening
Picking Crabs – Pelican Pete’s Crab restaurant
Overview of my Visit to NIH

It is not my intention to walk the reader through every aspect of the week, more to give an overview of the organisation and some of the week’s highlights.

The first appointment of my visit was with the Office of Animal Care and Use (OACU) Director and Deputy Director. The role of the OACU is to administer the NIH intramural programme of Animal Care and Use by managing Animal Welfare Assurance to ensure compliance with the following laws, regulations and policies:

- Guide for the Care and Use of Laboratory Animals (Guide)
- Manual Chapter 3040-2 Animal Care and Use in the Intramural Program (MC 3040-2)
- Public Health Service Policy on Humane Care and Use of Laboratory Animals (PHS Policy)
- U.S. Government Principles for the Utilization and Care of Vertebrate Animals Used in Testing, Research and Training
- USDA Animal Welfare Act and its implementing regulations
- International Transportation Standards and other applicable laws

We had a lively and interesting discussion on the structure and funding of animal research programmes within the U.S. from the Senate down to individual institutions which included the comparisons and differences between U.K., European and U.S. Legislative process. The OACU also delivers a schedule of training programmes for NIH intramural personnel who work with animals. These courses are provided free to participants and fulfil federal training requirements for working with animals. Further details of OACU and all its operations can be found at [http://oacu.od.nih.gov/](http://oacu.od.nih.gov/)

I also met with the Facility Veterinarian who, along with a new Research Investigator, took me through the small animal induction programme. At NIH all new research staff undergo full induction training with him and then further training over a number of days within the Institute’s various programmes depending on their work/species discipline. The Institute has a good portfolio of training for all staff (technical and research) which is well formatted and documented with good records.

One item of great value on day one is the Meet & Greet Lunch chaired by the Animal Programme Director at the National Eye Institute and the National Institute of Mental Health which offered an informal get together with the Facility management, research and technical team. This was an interesting meeting with various members of the research, management and technical staff, giving me a “friendly grilling” on my background and experience. One of the problems they clearly had was understanding my accent and enthusiastic fast talking as I outlined my 35+ year career in 10 minutes while trying to consume an abundance of excellent food. We clearly had some differences of opinion on some areas of animal welfare and housing which I looked forward to harmonising during the rest of the week. The lunch was a great success and certainly a good way for all of us to learn about each other and for me to get my initial insight into the Institute’s operations.

### Monday Nite Football!

Monday evening at the Washington Red Skins versus The Pittsburgh Steelers game. What a great night thanks to the generosity of Priority One Services Inc and my companion and chauffeur (who almost lost her own car!). Unfortunately the Steelers took the points but since I was neutral, it didn’t matter.
NIH is funded by the Government and the multi species Central Research Facility which is AAALAC accredited, and managed by direct employees of the NIH, who oversee the management of the research programmes and animal welfare and technical duties which are outsourced to a contractor; Priority One Services who have their own Project Management Team, and Training Officer. The facility operates with a total of 120 staff, and income is generated through per-diem and service charges (£5 per cage/week for rodents).

During a tour of some of the animal holding areas with my hosts they gave me an overview of Priority One Services and its role in the Facility. One thing that becomes clear very early in the visit is how fast time disappears. I am well known for my inquisitive nature which probably delayed schedules on more than one occasion although one of the most enjoyable parts of the Fellowship was how quickly I was made to feel welcome by all my hosts and the great dialogue and interest among both parties to share experiences and ideas.

Operating under a very strict and cohesive Animal Care programme with some 200+ SOP’s in place, the management and logistical operations appear seamless between the NIH Staff and the Priority One Service Team, with good team co-ordination and well managed strategies in a caring environment. Along with larger species (including primates and rabbits), amphibians and fish, the facility holds some 26,000 IVC rodent cages which includes up to 500 transgenic strains. They have an active embryo re-derivation programme for all new strains and only outsource from known commercial vendors. All colonies are screened at least twice a year with certain rooms under the supervision of the Facility Veterinarian’s sentinel programme.

The Institute also has a number of large animal projects including primates (which are all purpose bred at the Institutes own breeding facility in Poolesville, MD, see below) an area which I was particularly interested to visit having cared for primates back in the early part of my career. I also visited one of the primate behavioural areas where the animals are trained to carry out a number of physical and mechanical reaction programmes To carry out the behavioural programme, the animal is released from its holding area and with minimum restraint (a simple collar and pole lead) it travels across the room and enters its behavioural assessment position without any sign of resistance or stress. Small rewards are given following accomplished tasks, the animal then returned to its home environment in the same voluntary manner. The primates are all housed in rooms on an upper level floor with external windows so they can watch “the world go by,” something I haven’t seen in a U.K. facility, particularly one with the general public also visiting the site.

**Wednesday 5th November** was the day when American history changed and we awoke to the beginning of new era. Barack Obama had officially become President elect. On arriving at the Institute everyone was buoyant and appeared to have a big smile on their face. This really was a popular vote, and for me to be “camped out” right in the middle of the celebrations was one of those “where were you when.....” moments I will remember forever.

Setting off mid-morning with the Animal Programme Administrator and the Vice President of Operations at Priority One I traveled to the AAALAC National Office to visit the organisers of the Fellowship. For me this was extra special as I have been an Ad-hoc Consultant for a number of years and it was a chance to see friends and colleagues in their own offices. We met up with the President of Priority One Services Inc. (*one of the main financial sponsors of the Fellowship*) and travelled the next part of the journey with him which gave me a great opportunity to discuss the breadth of Priority One Services, and the pros and cons of outsourcing major sections of animal care and technical work in an academic research environment.

When I arrived at AAALAC, I was introduced to the new Executive Director and was pleased to have lunch with him and some old colleagues and friends from AAALAC. Over lunch I was updated on the latest developments of the organisation and I was generously presented with some mementos and a fleece jacket. I can strongly recommend applying to join the organisation as a specialist consultant (which I have been privileged to be for the past six years) as it is a great opportunity to participate in the accreditation programme and also develop your own skill base (details of AAALAC International can be found at [http://www.aaalac.org](http://www.aaalac.org)).
After an enjoyable visit to AAALAC, we moved on to Baltimore to visit the National Aquarium were we were met by the Director of Federal Relations, who following an overview, was presented with a donation to the programme by the President of Priority One Services.

For the tour we met up with some of the NIH staff and were able to visit behind the scenes of the aquarium breeding area and some of the tank areas. The aquarium has a fascinating array of many different species of marine life, and the excellent Animal Planet Australia exhibition which has its own waterfall, with many different species of birds in free flight and various special of alligators. It really was a great place to visit. This special day was completed with a visit to the ESPN Sports Cafe, where against my host’s best wishes, I was actually able to get a round in! Certainly a great day to remember in many different ways.

On Thursday, I was invited to visit a large animal field station in Poolesville. The main focus of the tour was centred on the primate breeding and development areas, which are home to rhesus macaques, marmosets and squirrel monkeys. Our hosts were the Facility Manager and some of her colleagues, who took us to all the breeding and gang development areas and the nursery area where rejected infants are meticulously cared for by the team. I was to learn that these orphans often continued to remain buddies and although they lived within the hierarchy of the other co-habitsants, when stressed they tended to huddle together. Also of great interest was the huge open enclosure which consisted of many hideouts, enrichment equipment and a lake. Our host mentioned that on occasion some of the monkeys had jumped the surrounding fence and sat in the surrounding trees but had returned of their own choice back into the “family.” It was good to observe such a well run facility operated by the manager and her team, They demonstrated a very caring welfare and development programme. This was the biggest captive breeding programme I have seen, and it certainly provides animals with a high quality caring environment.

My final day at the Institute had a changed itinerary due to operational demands on my NIH hosts for the week, and unfortunately I was unable to visit the core transgenic facility (another day maybe?). But I was able to spend some time within the aquatic facility which was very similar to the systems I had visited in the U.K..

This was followed by a chance to sign off with the team in the form of a lunch consisting of a Team Leaders Pot Luck “bring and share” buffet [something I also hope to adopt in Leicester] with a huge volume of different dishes to choose from and even though I had been with the guys all week, my appetite was still full apart from their’s. Having mentioned my “taste” for Oreos, one of the guys had provided endless packets of different flavours I didn’t even know existed..... Once again it was a great time to reflect on the week I had enjoyed so much, and say farewell to some of the many new friends I had made while at NIH. They really are a great bunch of people and managing a very busy professional scientific environment in a truly caring way in a relaxed atmosphere. It’s a great way to operate and this lunch in particular emphasised the friendship and camaraderie among the team.

Saturday morning it was farewell to Bethesda and Washington, D.C. As I reflected on what had been a very busy and enjoyable week at NIH, it was time to pack up my wares and travel to Indianapolis for the AALAS National Meeting. I last visited Indianapolis for the 50th National Meeting in 1999 to give a presentation on Environmental Enrichment for rodents and I was looking forward to my return trip.

Capitol Hill from the National Library
Smithsonian Institute
AALAS 59th National Meeting.
Indianapolis, U.S.A.

Indianapolis

Located in the centre of Indiana, Indianapolis is the 12th largest city in the United States, with a population of 818,014. Metropolitan Indianapolis includes a nine-county area with a combined population of 1,461,684 and is within a day's drive of half the nation's population.

Often referred to as the "Crossroads of America," Indianapolis is intersected by more segments of interstate highway than any other metro area.

Indianapolis is a plethora of hotels, entertainment venues, restaurants, bars (including the never-to-be-forgotten Slippery Noodles Blues Bar), and is a sports emporium with the all new Lucas Oil Stadium and, of course, the famous Indianapolis Race Circuit which hosts the three largest single day sporting events in the world (the Indy 500, Brickyard 400, and Pole Day Indy 500).

The meeting was held in the Indianapolis Convention Centre. Situated downtown, it was an excellent venue for the meeting with somewhere in excess of 4600 delegates, and 52 meeting rooms offering 127,595 sq ft of meeting space, ably occupied by more than 300 vendors.

Scientific Programme

The Scientific Programme opened on Sunday evening with keynote Speaker Oliver Smithies, Ph.D., Excellence Professor of Pathology and Laboratory Medicine at the University of North Carolina at Chapel Hill. A native of Halifax in Yorkshire, he is now a naturalised American geneticist and Nobel laureate, credited with the invention of gel electrophoresis in 1955, and the simultaneous discovery (with Mario Capecchi), of the technique of homologous recombination of transgenic DNA with genomic DNA—a much more reliable method of altering animal genomes than previously used, and the technique behind gene targeting and knockout mice.

One of the biggest challenges of any visit to the National AALAS Meeting is plan your strategy well in advance of the meeting since there are more than 250 Platform and Poster presentations focusing on four main topic areas,

I. Biomedical Research, Medicine and Methodology
II. Animal Welfare, Regulatory Compliance and Public Education
III. Facility Design, Management and Operation
IV. Neurobehavioral Sciences

I have highlighted below some of the many Platform sessions that I personally attended which last between 2-3 hours with the various presenters being allocated a 20 minute slot for their specific subject area. This is then followed by a “walk and talk” questions period where unlike meetings in the U.K., the audience lines up behind the aisle microphone to raise their questions.

i. Biomedical Research, Medicine and Methodology
   Alternatives in BIOMEDICAL Research; Putting ideas into practice
   Rodent fur mites; an emerging Biosecurity issue

ii. Animal Welfare, Regulatory Compliance and Public Education
   Integration of Zebrafish Laboratories into an Institutions Animal Care Programme
iii. Facility Design, Management and Operation

- The Effects of physical crowding on Job Satisfaction and the risk of injury in Laboratory Animal Technicians
- The Capacity of animal holding rooms for rodent caging; is more always better
- A user’s guide to transgenic Mice; How to maximise production and minimise frustrations
- Selecting a decontamination method for equipment exposed to infectious disease
- Retaining your top animal care and cage wash performers

iv. Neurobehavioral Sciences

- Classical Conditioning; Implications for animal husbandry and research

If delegates (readers) have an interest in following up any of the subject areas or individual sessions, one of the unique things about the AALAS National Meeting is that all the Platform sessions are recorded and available as audio discs (for details check out the website at [http://shop.lawrencemg.com/aalas-2008-m-35.html](http://shop.lawrencemg.com/aalas-2008-m-35.html) and the AALAS Home page).

As well as Platform sessions there were in excess of 200 Poster displays covering areas on:

- **Clinical**: evaluation and development of models for research;
- **Husbandry and Management**: with topics enrichment (“Enhanced Enrichment for Rodents in Negative Pressure Isolators”), housing, technical advances, financial management;
- **Laboratory Investigations**: reporting on models of Alzheimer’s Disease, Arterial Fibrillation, Helicobacter detection in murine faecal samples, the effects of buprenorphine analgesia on the growth of neonatal mice Trade Delegation.

One of, if not the biggest Animal Technology Trade exhibitions in the world was home to some 300+ different companies—everything from mushy transgenic diet to animal suppliers, cage suppliers, heavy equipment (such as cage wash machines and autoclaves), a very impressive display of a robotic cage cleaning, washing, bedding and stacking system, facility management systems, transportation, surgical equipment, etc.

It is an awesome task to try and visit those you are familiar with (a whole day can be taken up in the trade Hall alone) along with the many others not represented in the U.K. but who will willingly trade with us (at sometimes very competitive rates) particularly when the dollar/pound exchange rates are favourable. In fact it was through my attendances at previous meetings that the institute where I work has so much American manufactured equipment. I hope that my colleague Fellowship winners from the U.S. are able to set up similar relationships with U.K. and European vendors.

**Associate Meetings**

As this is the main chance for colleagues from all over the USA to get together, there are many other affiliated meetings and functions going on throughout the week, including meetings held by AALAS National and Local Groups, examination and training sessions, AALAS Foundation, ACLAM, ICLAS, and LAMA. AAALAC International hosts the **International Luncheon** which is one of the headline events held on Wednesday afternoon. This is a wonderful get together with more than 100 International delegates from around the globe—it is always a most enjoyable event and this year was to be even more special as I was being presented with the **AAALAC International Fellowship Award**. Being very humbled by the occasion, and having already spent a week at the NIH and as an invited guest to the National Meeting, I was presented with an inscribed crystal globe by the Executive Director of AAALAC International.

In accepting this prestigious award, I spoke about the great experience I had at the NIH in Bethesda and the great team of people I had met and worked with and also about my ultimate hope that eventually all animals within scientific institutions around the world would be guaranteed the same level of care and welfare. I acknowledged the great efforts being made by colleagues present at the luncheon aiming for the same goal. Finally, I was pleased to dedicate my award to all the animal technicians and support staff I had worked with during my career—without them I couldn’t have achieved such an accolade.

It was also an opportunity to meet up with and congratulate the American award winner, who had travelled to the U.K. earlier in the year.
Social Programme

While the meeting organisers offer a number of organised interesting visits and tours, the main content of social activity is organised by the many trade delegates who sponsor various events during the week. I would particularly like to recognise Priority One Services for an excellent dining evening, LabDiet Inc. for their kind invitation to the PMI Award Dinner, Allentown Inc. who put on a wonderful celebration dinner and concert evening, Wm Fischer for dinner and an interesting evening at the Children’s Museum, and to many colleagues and friends whose support, generous hospitality and interesting and diverse conversations enhanced what truly was a great meeting.

Summary

Finally, did we meet the aims of the Fellowship programme? Most definitely yes. It was a great experience, and how they managed to keep on schedule (i.e. keep me on focus!) at the NIH, I am not sure. Of course as with any visits we host, things go off on tangents, discussions expand and eat up well planned time, but surely this is what these visits are all about—the sharing of experiences and practices to enable both parties to think and reflect and adopt some of each other’s successes. For me, I certainly have adopted some of the practices from NIH in my own facility and hope that some of the experience, practices and policies I was able to share will benefit my hosts. Having taken two weeks of my annual leave to pursue the Fellowship, it truly was one of the best organised working practice visits I have had the pleasure to be a part of, and along with the AALAS Meeting, one which I heartily recommend to other colleagues in the U.K..

Acknowledgments

I would like to acknowledge all those people (past and present) who made it possible for me to receive this wonderful accolade. It really was one of the greatest honours of my career.

Special thanks go to;

   Prof. Ian Forsythe, University of Leicester, Mrs Cathy Godfrey(RCSI, Dublin)
   Mr Fred Douglas, Purdue University USA, for their kind support in my Fellowship application
   The Management at NIH, Bethesda
   The President and Vice President of Priority One Services
   The Executive Director and the staff at AAALAC International for organising the whole trip

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*Please note that some names and titles of individuals have been omitted from this report in order to protect their privacy.