



*Science in the Service
of Animal Welfare*

UFAW

*The international animal
welfare science society*

Annual Report 2012-2013



UFAW

The international animal welfare science society

The Universities Federation for Animal Welfare, founded in 1926, is an independent charity promoting animal welfare science worldwide together with high standards of welfare for farm, companion, laboratory and captive wild animals, and for those animals with which we interact in the wild.

It works to improve animals' lives by:

- Promoting and supporting developments in the science and technology that underpin advances in animal welfare
- Promoting education in animal care and welfare
- Providing information, organising meetings, and publishing books, videos, articles, technical reports and the journal *Animal Welfare*
- Providing expert advice to government departments and other bodies and helping to draft and amend laws and guidelines
- Enlisting the energies of animal keepers, scientists, veterinarians, lawyers and others who care about animals

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Letter from the Chairman

Welcome to the 2012-2013 Annual Report which reflects a very positive year for the charity over the wide range of its activities.



During the year Council members and staff undertook a review of UFAW's strategy to help ensure we are doing all we can in terms of advancing animal welfare through promoting and supporting animal welfare science and education worldwide. International development is a major part of this strategy and it is pleasing to report continued advancement in this area – from the very successful symposium in Barcelona, the innovative research in Israel, expanding reach of the Animal Welfare journal, and overseas student scholars, to growing numbers of LINK institutions and activities around the world.

I had the pleasure of presenting the UFAW Medals and the Young Animal Welfare Scientist of the Year award (the latter to a young researcher in Portugal) at the Barcelona symposium, and of noting the high regard for UFAW and its work amongst the delegates from all parts of the world. Plans are being devised for further international development.

The success of UFAW programmes in the UK is also evident in the Report, particularly the Animal Welfare Student Scholarship and LINKs schemes, and some exciting research in the 3Rs (Replacement, Reduction and Refinement principles of humane research first developed at UFAW by William Russell and Rex Birch in the 1950's).

Achievement over the year has been significant, despite a difficult economic environment, and I thank you for your continued support without which that achievement would not be possible. Animal welfare science goes from strength to strength and UFAW plays, and will continue to play, a crucial role in that.

On behalf of myself and the Council I also thank Donald Davidson who retired this year as UFAW Secretary, and wish him a long and rewarding retirement.



Lydia Brown

Chief Executive's Report

Through its 88 years, although based in the UK, UFAW has increasingly come to operate internationally (as outlined on page 3). This is a natural development since UFAW promotes the scientific approach to tackling problems and neither science nor animal welfare problems pay heed to national boundaries. However, the extent to which UFAW should further develop internationally – to further help build capacity in animal welfare science worldwide – was discussed as part of a wide-ranging review of UFAW strategy conducted during the year. The charity aims to make best use of its resources to advance animal welfare and, to this end, also to raise funds to support its work. The strategy review (these are conducted every few years) was to consider if the charity is doing all it can in these regards or if better ways can be identified.



The conclusion was that UFAW should continue to develop in this international direction. There was wide support for this also from the participants in a session on international developments that was held at the symposium in Barcelona in July 2013. As outlined on page 3, we are looking into how to take these ideas and specific recommendations forward.

In promoting the scientific approach to tackling problems, UFAW has played a positive and significant role in advancing animal welfare. It is very grateful to its supporters for enabling it to do this and it aims to continue to pursue this approach and to roll it out further, to meet requests for help to build capacity for animal welfare science internationally. UFAW is a small organisation and funds are limited so we are not talking about large-scale projects (at this stage anyway) but about helping making beginnings – planting acorns that may grow.

On that note, it is very pleasing to see that the Garden Bird Health Initiative that UFAW helped to start in 2003 (<http://www.ufaw.org.uk/gbhi.php>) has, thanks to the great efforts of all involved (congratulations!), grown and developed into the Garden Wildlife Project (<http://www.gardenwildlifehealth.org/>) which provides a system for early detection of the threats to the health, welfare and conservation of wildlife in the UK that modern human life can often present. We hope that this may expand internationally also.



James K Kirkwood

International Developments

UFAW has over the years taken on many of the roles of an international animal welfare science society. For example, the charity:

- is an inclusive organisation for all those working in the field of animal welfare: it covers all aspects of animal welfare and members include ethologists, veterinarians and other animal welfare scientists, agricultural economists and others;
- publishes the journal *Animal Welfare* which has an international editorial board, and is a major vehicle for animal welfare science (and related subjects) around the world;
- runs international symposiums, conferences and workshops on animal welfare science and related aspects;
- has a network of university and college LINKs around the world;
- supports undergraduate, PhD and post-doc animal welfare research internationally; and,

- runs, with Wiley Blackwell scientific, animal welfare book series which has an international authorship.

At the symposium in Barcelona a session was held to seek ideas about and discuss further or other ways in which UFAW could help develop and build capacity in animal welfare science internationally. This was very helpful and three ideas emerged in particular, further support for: (i) regional conferences and meetings, (ii) undergraduate research projects and (iii) travel scholarships to enable scientists (including students) to visit centres of expertise in other countries to learn approaches and methods that they can apply to tackling the problems faced in their home countries. We are making plans to provide further support in these areas.

At present, the UFAW Council members are all from the UK. This reflects its present state of evolution. In the future, it is hoped that people will stand for election to Council from other parts of the world also. At this stage, we are exploring setting up an international committee to provide advise on further international development.

UFAW International Animal Welfare Science Symposium

The importance of science in elucidating and tackling animal welfare problems is increasingly recognised, but priorities, concerns and approaches vary between nations and cultures.

In July 2013, over 160 delegates from 33 countries - including Brazil, China, Egypt, Nigeria, Pakistan and Russia - came together at the Universitat Autònoma de Barcelona, Spain to explore such issues and to discuss and identify how a scientific approach to animal welfare might be further encouraged in their countries. During the two days of the symposium, delegates listened to a varied range of talks addressing both issues fundamental to the improvement of animal welfare and practical solutions to welfare problems. Such themes and many others were also addressed in the many posters that were presented alongside the talks. The full programme and abstracts of all presentations can be found on the UFAW website (www.ufaw.org.uk). At a special session delegates also discussed the needs of the international animal welfare science community and how UFAW might further support these (see box above).

We would like to thank all those who contributed to the meeting through their talks or poster presentations, and who chaired the sessions and helped the symposium run so smoothly. We would also like to thank Professors Antonio Velarde (IRTA – Montells) and Xavier Manteca (UAB) and their students for so graciously hosting us and for their practical assistance. Finally, thanks are extended to all the staff of the Convention Centre and Hotel. We would welcome suggestions for future meetings or offers to host similar events in the future.

Medal for Outstanding Contributions to Animal Welfare Science

On July 4th 2013 at the UFAW Symposium in Barcelona, UFAW Medals for outstanding contributions were awarded to Professor John Webster and to Professor Peter Sandøe both of who have been very influential in the development of animal welfare science internationally.

The UFAW Medal is open to individuals, anywhere in the world, whose research, teaching, service and advocacy has significantly benefited animals. It recognises the exceptional achievements of scientists who have made fundamental contributions to the advancement of animal welfare over a number of years.

John Webster is Professor Emeritus at the University of Bristol School of Veterinary Science. Soon after his appointment to the Chair of Animal Husbandry at Bristol in 1977, he established a unit for the study of behaviour and welfare. This has grown into the major international centre of expertise that it - the Animal Behaviour and Welfare Science Group - is today. As a founder member of the Farm Animal Welfare Council, it was John who first propounded the 5 Freedoms – a concept that has had a worldwide influence on standards for, and approaches to the assessment of, the welfare of domesticated animals. He has published many papers on aspects of animal welfare science and the subjects to which he has made important contributions include cattle lameness and welfare assessment methods. He has published several books in the field including two in the UFAW/ Wiley Blackwell series: 'Animal Welfare: limping towards Eden' and



UFAW Medal winners Professor John Webster (centre) and Professor Peter Sandøe (right), and Young Animal Welfare Scientist of the Year Dr Nuno Franco, with Lydia Brown, UFAW Chairman, at the symposium in Barcelona.

'Management and Welfare of Farm Animals'. Among other responsibilities he has been President of the Nutrition Society and President of the British Society for Animal Science.

Peter Sandøe is Professor of Bioethics in the Department of Large Animal Sciences and Department of Food and Resource Economics at the University of Copenhagen. He is also Director of the Danish Centre for Bioethics and Risk Assessment. Over the past two decades he has established himself in a unique position in the academic study, university teaching and public discussion of animal welfare and animal ethics. In his interdisciplinary work with animal welfare researchers, veterinarians and animal scientists, he has used his expertise in philosophy to ensure that critical questions of ethical relevance are asked and appropriately analysed. He has published many influential papers, many textbook chapters and web-based teaching materials, and his expertise, clarity of thought and wisdom is widely sought.

His main contribution to research falls within the following four areas: understanding the interface between animal ethics and animal welfare science; analysing the special ethical issues raised by animal biotechnology; the effects of farm animal breeding on animal welfare; and assessment of animal welfare at farm and group level.

UFAW is pleased to award these special medals to Professor John Webster and Professor Peter Sandøe in recognition of their exceptional achievements through fundamental contributions to the advancement of animal welfare and animal welfare science. Their work has had international impact and significantly benefited the welfare of animals.

Young Animal Welfare Scientist of the Year Award 2013

UFAW makes this award to recognise the achievements of young scientists who have made significant contributions to improving the welfare of animals. The award is open to postgraduate students, anywhere in the world, who are currently studying for a doctoral degree or who are in post-doctoral work within 6 years of their PhD.

The winner of the 2013 award is Dr Nuno Franco of the Institute of Molecular and Cell Biology, Porto, Portugal. He was presented with his award on 4th July at the UFAW Symposium in Barcelona.

Nuno was awarded his Doctoral degree (with Distinction) at the University of Porto in 2012 for his thesis on 'Animal Welfare and the implementation of refinement in biomedical research' and has published a series of papers on this subject. Through his work, he has promoted the use of biomarkers that give early indications of the state of the disease, in studies of infectious diseases using animal models, so that these can be used as humane end points and the later stages of the disease can be avoided. As he says in a recent paper published in PLoS Pathogens¹: 'A science-driven approach for the termination of animal studies may not only prevent unnecessary and avoidable suffering, but also contribute to optimizing financial and human resources, enhancing the scientific output and speeding up the scientific process.'

¹ Franco NH, Correia-Neves M, Olsson IAS (2012) How "Humane" Is Your Endpoint?—Refining the Science-Driven Approach for Termination of Animal Studies of Chronic Infection. PLoS Pathog 8(1): e1002399. doi:10.1371/journal.ppat.1002399

Research

The welfare of animals under human care depends upon:

- Belief in the sentience of the animals
- Understanding that this is morally important
- Having proper knowledge of the animals' needs
- Having the ability and resources to meet these needs
- Applying these beliefs, abilities and resources conscientiously

UFAW's efforts are focused largely at the third of these points – improving knowledge of animals' needs. It is now accepted widely, although it was not always so, that a broad range of species of animals are sentient – that is, that they have the capacity to experience unpleasant and pleasant feelings.

For many species, including some companion and farm animals, knowledge of environmental and psychological needs and how these needs can be recognised and met – minimising unpleasant and maximising pleasant feelings – remains less complete than is often assumed, and a great deal of both fundamental and applied research remains to be done in these areas.

UFAW's varied grant schemes to fund animal welfare science allow us to support projects ranging from small pilot studies through to high quality post-doctoral research. It has often been difficult for scientists to obtain funding in animal welfare science, but our efforts, with your generous support, have helped to educate and support a growing number of highly respected animal welfare scientists who not only carry out the necessary research but are a source of expert advice to individuals, institutions and Government.

A few UFAW-funded projects are outlined to demonstrate the Federation's current research interests.



Animal welfare research in Israel

In 2011, UFAW's efforts to help support developments in animal welfare science in Israel took a significant step forward with the establishment of a UFAW-funded PhD studentship at the Veterinary School of the Hebrew University of Jerusalem. Roi Mandel's interesting project is an effort to gauge cows'

own perspectives on the quality of their lives. Excerpts from the abstract of the paper (with co-authors Becky Whay, Christine Nicol and Eyal Klement), that Roi presented at the UFAW symposium in Barcelona, describe the idea well as follows.

'Animals allocate time and effort to a range of core (e.g. sleeping, feeding, drinking) and 'luxury' (e.g. playing, exploring) activities. As luxury activities are secondary to core activities in their importance for survival, we hypothesize that luxury activities will be inversely correlated with the effort allocated to

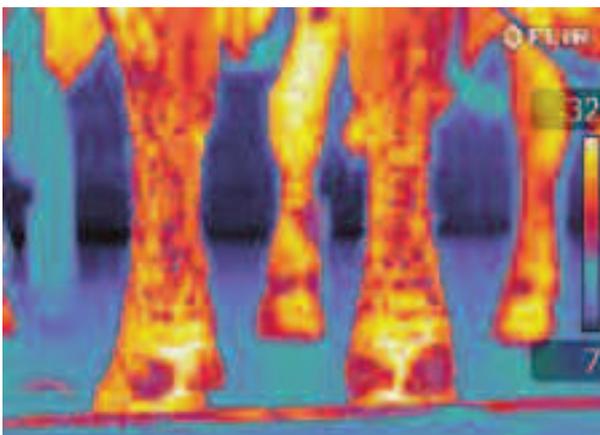
conduct them... . One seemingly luxury activity available to cows in an increasing number of dairy farms is scrubbing against an automated scrubbing brush. Despite the increasing popularity of such brushes, there are hardly any data on factors influencing cows' brush usage nor any documentation on reduced usage of the device at time of stress and morbidity... This study was aimed at examining the correlation of brush usage with distance from food, heat load and a stressful manipulation in the form of a vaginal examination. We show that brush usage decreases when food is located distantly from the brush, at high temperature and humidity levels (THI) and after stressful manipulation. We conclude that the results of the study support the suggested hypothesis. These findings imply that changes in brush usage may be utilized to detect morbidity or stressful events. Further research should be conducted in order to assess the sensitivity and specificity of this suggested tool.'

Roi is in the second year of his PhD studies.

Research and other projects supported by UFAW

UFAW receives many applications for support for projects to address animal welfare problems, including by research or education. Some that have been completed this year are described below.

Nicole Renn was awarded a grant for a project on the use of digital imaging as a diagnostic tool for lameness in dairy cattle. This is a serious welfare problem affecting about 20 to 25% of the UK herd. Nicole showed that a handheld thermal imaging camera (see figure) provided a more sensitive and accurate means of assessing lameness than traditional scoring systems that rely on observations of cattle mobility.



A thermal image of cattle feet. The lighter areas show higher temperatures.

UFAW provided travel support to Laura Webb for a project on the preferences of calves for different foods. Laura found that calves showed a preference for long versus chopped hay and for hay over straw. Knowledge of preferences such as these is obviously important for welfare.

It is now generally accepted that positive reinforcement training can be valuable for animal welfare. It can often be used to encourage animals to cooperate with care staff and handlers. Those who wish to use positive reinforcement, however, also require training. UFAW funded Stuart Mason to attend a primate training and enrichment workshop in the USA. Mr Mason subsequently wrote 'the support received from UFAW helped to make this trip possible. I have implemented many new ideas already in my work and I am seeing the benefits to the animals.'

Many pedigree dogs suffer from breed specific genetic defects. UFAW funded Rowena Packer, who is carrying out a PhD on this subject at the Royal Veterinary College, to attend the Swedish Kennel Club's 2012 dog health workshop. She reported that the workshop recognised that if we wish to improve the incidence of genetic disease, effective education is necessary for everyone involved, from the occasional breeder through to the highest level championship judges. The genetic disease database on the UFAW website helps address this.





UFAW supported William Thomas, a veterinarian, to travel to Lao PDR (Laos). He reported that the financial support from UFAW allowed him to spend over seven months providing veterinary care to elephants in remote and often challenging conditions while travelling throughout the country. Further he was involved in creating the first Mahout Association within Lao and which now provides education on welfare issues such as suitable diets and durations of treks. He writes that 'thanks to the funding from UFAW... I believe that I have made a substantial impact on the current welfare situation and can proudly say that I not only leave behind a domestic (elephant) population visibly healthier than before, but a committed group of Lao nationals who better understand the welfare needs and concerns for the elephants within their care.'

UFAW gave funds to support the activities of Zoo Outreach in Asia. This organisation helps promote animal welfare and conservation issues amongst zoo and other professionals in this region through the use of training materials conferences and workshops.

Conservation and welfare do not always work in synergy, but good housing can improve both rehabilitation of animals that have suffered poor welfare and also conservation outcomes. Hannah Trayford of the University of Cambridge Wildlife Group examined the welfare of captive orang-utans in various rehabilitation centres in Indonesia, and found that providing complex and stimulating environments helped improve psychological and physiological characteristics. She suggests that enrichment should preferably be goal-directed and relevant to survival skills by, for example, developing the complex locomotory skills and ability to solve problems that these animals will need in their natural forest habitat.



Donkeys are often thought of as stoical creatures compared to horses and sometimes seem to be less responsive to painful stimuli. However behaviour is not always a reliable indicator of pain. Nicola Grint carried out a comparative analysis of EEGs in horses and donkeys during castration and found similar responses, suggesting that donkeys need effective pain control as much as horses.



UFAW helped support a two-day conference at the Northumbria University Law Faculty on 'The use of animals in medical research: Law, Science and Ethics'. The aim of the conference was to promote dialogue between lawyers, ethicists, biomedical scientists, social scientists and veterinarians regarding the ethical use of animals, and the extent to which animal welfare can be further improved. The Deputy Scientific Director, Dr Robert Hubrecht, gave a presentation on the decisions that have to be made when implementing the 3Rs and the scientific evidence base for such decisions.

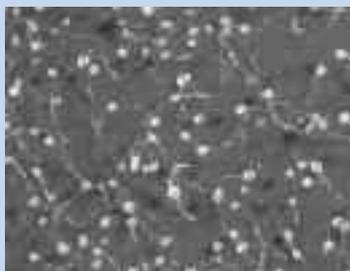
UFAW funded Victoria Davis to study the feeding behaviour of captive lemurids with the aim of improving their husbandry. She writes 'I think conducting this project at Bristol Zoo was instrumental in me being offered a PhD position to study animal behaviour at Oxford University.'

UFAW 3Rs Liaison Group

The UFAW 3Rs Liaison Group (founded by UFAW in 1998), is a collaboration between UFAW, pharmaceutical companies, contract research organisations, animal breeders, and other animal welfare organizations. The group funds PhD studentships with the aim of promoting high quality research to find practical ways of improving the welfare of animals used in research. It has raised over £460,000 since its inception and has funded 7 studentships.

Two projects are currently in progress. Rachel Tanner is in the first year of her PhD at Oxford University, and aims to develop in-vitro assays for the early screening of novel TB vaccine candidates. TB is a dangerous disease that is becoming increasingly drug resistant and so there is considerable research effort aimed at producing an effective vaccine. If her research proves successful then it could lead to a substantial reduction in the numbers of animals used in this topical area of research.

Many potential drugs fail at a late stage, after animals have been used in their development, because it is found that they result in nausea in humans. Steve Robery is now nearing the end of his PhD at Royal Holloway, University of London on the use of *Dictyostelium discoideum*, a soil-living amoeba, as a preliminary screen for emetic liability in



Soil-living amoeba *Dictyostelium*

drug development. In the course of his studies, he has used the amoeba to screen various known emetic/aversive/bitter compounds and has identified a limited number of compounds that caused a rapid, dose-dependent effect on the amoebae, similar to that seen in mammalian (including human) tests. The research group, to which he belongs, is now exploring with a pharmaceutical company options for further research and possible take up of this new screening technique so as to reduce animal use. The project has already yielded one publication* and further papers are in the pipeline with the Journal of Cell Science and British Journal of Pharmacology.

Another student, Claire Richardson, passed her PhD viva in September. Her work resulted in the development of an automated behavioural system for assessing mouse welfare that shows promise for detecting welfare problems before clinical signs become obvious. Another advantage of the apparatus that she developed is that, during the assessment, the mice can be housed in social groups in an enriched environment. We congratulate her on her research and wish her the best of luck in her future career.

*Robery S, Mukanowa J, Percie du Sert N, Andrews PLR, and Williams RSB 2011 Investigating the effect of emetic compounds on chemotaxis in *Dictyostelium* identifies a non-sentient model for bitter and hot tastant research. PLoS One 6: e24439.

Legislation

In January, the UK introduced revised legislation on the use and care of animals used in research as required by the new European Directive 2010/63/EU. This resulted in a need to update the associated guidance and codes of practice. UFAW provided substantial input into the development of the original (1986) Act and is continuing to provide input to the updated regulations and guidance through discussions with Home Office officials and responses to consultations.

3Rs award

The Deputy Scientific Director, Dr Robert Hubrecht, was invited by the pharmaceutical company Novo Nordisk to be a member of a three person jury to decide the winner of an internal 3Rs award. The 2012 award was given to employees who had refined blood coagulation studies by demonstrating that it was not necessary to use conscious mice and that equivalent data could be collected under terminal anaesthesia. These results could well impact on similar studies worldwide and substantially reduce suffering experienced by mice in these studies.

LASA 3Rs Section/UFAW Meeting 28th September 2012 Defining and Refining Humane Endpoints'

In 1959 Russell and Burch (1959) wrote that 'the humanest possible treatment of experimental animals, far from being an obstacle, is actually a prerequisite for successful animal experiments'. The implementation of humane endpoints is just one, but very important, way in which experiments can be made more humane, and it was the subject of a one-day meeting for laboratory animal professionals held at GSK, Stevenage. Speakers included the Home Office Chief Inspector who outlined the legal responsibilities of those licensed to carry out experiments on animals, as well as some practical ways of achieving humane endpoints. A speaker from the Medicines and Healthcare products Regulatory Agency (MHRA) discussed regulatory expectations and the ways in which this organization can help. Others discussed the challenges experienced in academic research institutions, commercial pharmaceutical organisations and contract research organisations. The day ended with a series of papers on ways of refining and scoring humane endpoints. Claire Richardson – a previous UFAW 3RS Liaison group Scholar, described an automated behavioural analysis system, and Matt Leach (Newcastle University) showed how facial expressions could be used to assess pain in various species.

RSPCA/UFAW Rodent Welfare Group meeting

This group helps contribute CPD for animal care staff and researchers who use rodents in research. It meets annually to hear of current welfare research, exchange views on rodent welfare issues and share experiences of the implementation of the 3Rs. Topics discussed at the 2012 meeting included the use of rodents in Chile, the care of older mice, means to reduce stress during blood sampling and the refinement of research into neuropathic pain. A report of the meeting has been published*. Further information can be obtained from the lead organizer, Dr Penny Hawkins, Research Animals Department, RSPCA, penny.hawkins@rspca.org.uk.

*Hawkins P, Gimpel J, Rice ASC, Wells DJ, Latcham J, Heath K, Gardiner M, Wattam T, Lilley E, Jennings M, and Hubrecht R 2013 Report of the 2012 RSPCA/UFAW Rodent Welfare Group meeting. Animal Technology and Welfare 12: 49-58.



Education

Lack of information about, and poor understanding of animals' needs, and the inability to detect and evaluate both negative and positive aspects of welfare – pain and pleasure – are at the root of many animal welfare problems.

UFAW promotes education in animal welfare science, largely at university and college level, to help address these difficulties – helping to teach those who will become the teachers in the future. Ways that UFAW does this include:

- Publication of the journal *Animal Welfare*
- Publication of key texts on animal welfare (eg *The UFAW Handbook on the Care and Management of Laboratory and Other Research Animals*, and the *UFAW/Wiley-Blackwell Animal Welfare Series*)
- Running workshops and symposia
- Lecturing at universities and colleges
- Running the Animal Welfare Student Scholarship scheme to enable students to develop their interest in animal welfare science
- Running the Research Training Scholarship scheme to provide training in animal welfare research
- Providing financial support for other educational initiatives

Some examples of the educational work undertaken or supported by UFAW are outlined overleaf.

UFAW Animal Welfare Student Scholarships

For thirty years, UFAW has been offering animal welfare scholarships to students at universities or colleges in the British Isles who are interested in improving the lives of animals. More recently, these scholarships have also been available to those studying at institutions outside of the UK with a UFAW LINK (see page 11). Scholars are given funds to support an 8 week research project into an area relating to the better understanding of animals and their needs and are invited to present the results to their peers and others at an annual meeting. Over 300 of these scholarships have been awarded and for many they have been a step towards a career in animal welfare science. Some past scholars have gone on to supervise scholars themselves, and in some cases these have, in turn, supervised the next generation of aspiring animal welfare scientists. In this way UFAW has helped to establish and build a network of informed individuals committed to advancing the cause of animal welfare. Congratulations to this year's winners:

Ashley Barratclough: 'Devising a protocol to estimate the weight of right whales at sea, to facilitate sedation and disentanglement from life threatening fishing gear entanglement', under the supervision of Dr Michael Moore at the Woods Hole Oceanographic Institute, USA.

Anna Brown: 'Ear tag retention in the Eurasian beaver, Castor fiber and implications of tagging procedures for wild beaver welfare', under the supervision of Prof Frank Rosell at Telemark University College, Norway.

Po-Yan Cheng: 'Can the Mouse Grimace Scale be applied to mouse pups?', under the supervision of Dr Patricia Turner, University of Guelph, Canada.

Laura Feeney: 'Does a history of racing affect a greyhound's quality of life in rehoming kennels?', under the supervision of Dr Lisa M. Collins at Queen's University Belfast.

Kirsty French: 'Non-invasive indicators of nociception or pain in zebrafish: facial analysis and water cortisol in laboratory fish', under the supervision of Dr Iain Young, University of Liverpool.

Francesca Sanders Hewett: 'Do supermarket welfare schemes benefit dairy cattle?', under the supervision of Dr David Williams, University of Cambridge.

Corrie Kerr: 'The effects of access to shade on the behaviour of replacement heifers', under the supervision of Dr Jose Peralta, College of Veterinary Medicine, California.

Osarumen Omonuwa: 'Welfare assessment and end-point refinement in a mouse model of bone cancer', under the supervision of Dr Jonny Roughan, Newcastle University.

Mallory Paoli: 'Behavioural differences between pigs with docked and intact tails', under the supervision of Dr Rick D'Eath, Scotland's Rural College.

Sophia Pereira: 'Comparing the delivery methods of Duddingtonia Flagrans in sheep', under the supervision of Dr Richard Cooke, Writtle College.

Paula Rodrigues: 'Using vocalisations to assess and negative emotions in cattle', under the supervision of Dr Patricia Ferrier Monticelli, University of San Paulo, Brazil.

Mark Rose: 'Widening the spotlight in genetic welfare problems: heritable disorders in selectively bred reptiles', under the supervision of Dr Fritha Langford, The University of Edinburgh.

Marie-Theres Schlemmer: 'Development of an on-farm welfare assessment protocol for dairy sheep', under the supervision of Dr Christine Leeb, University of Natural Resources and Life Sciences, Vienna, Austria.

Cameron Stone: 'Project Splatter-a citizen science project to record wildlife roadkill data in the UK', under the supervision of Dr Sarah Perkins, Cardiff School of Biosciences.

Katy Syrett: 'Assessing emotional states in dairy cattle', under the supervision of Dr Gareth Pearce, University of Cambridge

Sian Tarrant: 'Exposure of biotoxin to fish-eating marine predators', under the supervision of Miss Silje-Kristen Jensen, University of St Andrews.

Rebecca Venn: 'Effect of kennel noise on the hearing of dogs', under the supervision of Dr Dorothy McKeegan, University of Glasgow.

15th Annual Animal Welfare Student Scholars Meeting The Royal Veterinary College, London.

This meeting for student scholars to present their results is held during the beginning of December each year. Also presenting will be those students who received a Dorothy Sidley scholarship from our sister charity, the Humane Slaughter Association and a guest speaker. This year, Dr Siobhan Abeysinghe has kindly offered to host the meeting at the Royal Veterinary College, London. We invite anyone with an interest in animal welfare – UFAW members, supporters, or others – to come along for the day and listen and engage with the scholars. Lunch and refreshments are provided to all those who let us know they are attending.

Anyone wishing to attend or who wishes further details should contact Stephen Wickens, Development Officer (wickens@ufaw.org.uk).

Staff Publications

2013

Hawkins P, Gimpel J, Rice ASC, Wells DJ, Latcham J, Heath K, Gardiner M, Wattam T, Lilley E, Jennings M, and **Hubrecht R** (2013) Report of the 2012 RSPCA/UFAW Rodent Welfare Group meeting. *Animal Technology and Welfare* 12: 49-58.

Kirkwood J K (2013) Wild animal welfare. *Animal Welfare* 22, 147-148. doi: 10.7120/09627286.22.1.147

Kirkwood J K (2013) Wildlife medicine, conservation and welfare. In C.M Wathes, S.A. Corr, S.A. May, S.P McCulloch and M.C. Whiting (eds) *Veterinary and Animal Ethics: Proceedings of the First International Conference on Veterinary and Animal Ethics*, September 2011. Wiley Blackwell, Oxford. Pp 133-154.

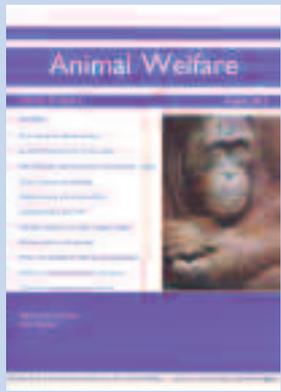
Kirkwood J K (2013) Contribution to the debate: Is it better to have lived and lost than not to have lived at all? In C.M Wathes, S.A. Corr, S.A. May, S.P McCulloch and M.C. Whiting (eds) *Veterinary and Animal Ethics: Proceedings of the First International Conference on Veterinary and Animal Ethics*, September 2011. Wiley Blackwell, Oxford. Pp 287-289.

2012

Hawkins P, Burn C, Deacon R, Dennison N, Heath M, Mackin P, Tremoleda J, Webb A, Woodhall G, Jennings M, and **Hubrecht R** (2012) Report of the 2011 RSPCA/UFAW Rodent Welfare Group meeting – harms and benefits of new technologies. *Animal Technology and Welfare* 11: 95-104.

Kirkwood J K (2012) Tackling genetic welfare problems in pets. *The Biologist* 59, 11.

Kirkwood J K (2012) Selective breeding: making the welfare consequences clear. *Veterinary Record* 170, 535-537. doi: 10.1136/vr.e3344



Animal Welfare, the Journal

This year we have put in place an on-line manuscript handling system – the Thomson Reuters' system, ScholarOne. Papers are now submitted at Manuscriptcentral*. Switching to this system, which helps in shepherding manuscripts through the peer review process, went smoothly (thanks to Steve Weddell who managed the changeover).

The move to open access publication in science is gathering pace. The journal is compliant with the RCUK (UK research Councils) gold standard for open access (immediate and unrestricted access to the final published version). It has offered full open access publishing (at author's request and on payment of the required fee) for two years now and some papers have been published in this way.

The journal is in its 23rd year and the number of manuscripts submitted continues to grow year on year. This year, Volume 22, Issue 1 included a set of extended abstracts and papers from a workshop, hosted by the UK Government and supported by the World Society for the Protection of Animals (WSPA), held in March 2011 in Cornwall, UK, on whale welfare and ethics.

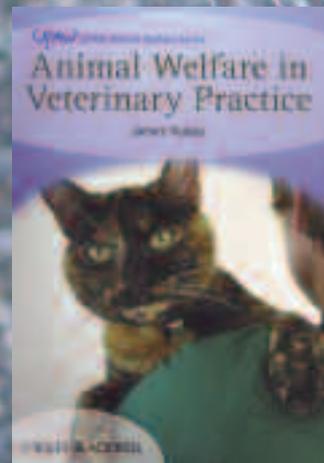
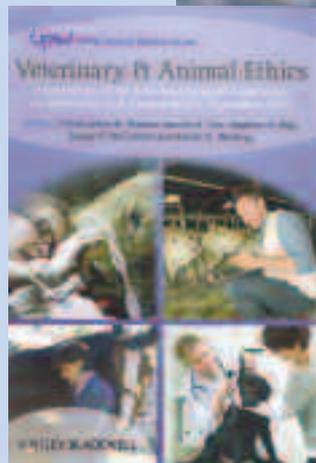
We are grateful to the Persula Foundation for providing funds to enable free subscriptions to the journal for 3 years for the Nanjing Veterinary School, China; the Kasetsart Veterinary School, Thailand; the Centre for the ThreeRs, Konkuk University South Korea; the Faculty of Veterinary Medicine, Beni-Suef University, Egypt and the Faculty of Veterinary Medicine, Chittagong Veterinary and Animal Sciences University, Bangladesh.

Production and publication of the journal depends on the efforts of many, to all of whom, and especially the Section Editors (Jann Hau, Denmark; Jonathan Cooper, UK; Peter Sandøe, Denmark; David Mellor, New Zealand; Katherine Houpt, USA; Christine Nicol, UK; Don Lay, USA; Dan Weary, Canada; Kate Littin, New Zealand; Victoria Braithwaite, USA; Christoph Schwitzer, UK) and the referees, we are very grateful.

*(<http://mc04.manuscriptcentral.com/ufaw-aw>)

The UFAW / Wiley-Blackwell Animal Welfare book series

During the year two more books have been published in this series: 'Animal welfare and veterinary practice' by James Yeates and 'Veterinary and Animal Ethics: the Proceedings of the First International Conference on Veterinary and Animal Ethics' edited by Christopher Wathes, Stephen May, Sandra Corr, Stephen McCulloch and Martin Whiting. UFAW is very grateful to all the authors involved. Details of these and of previous books in the series are at: <http://www.ufaw.org.uk/public-list.php#pl01>. Two further books are due to be published in the 13/14 year: 'Companion Animal Ethics' edited by Peter Sandøe, Sandra Corr and Claire Palmer and 'The welfare of animals used in research: welfare and ethics' by Robert Hubrecht. If you have an idea for a book for this series, please let us know.



The UFAW LINK Scheme

UFAW initiated the LINK scheme to help encourage and develop activities and initiatives in animal welfare science at universities and colleges in the UK and elsewhere.

Each year, the LINK scheme supports a diverse range of activities. Lincoln University, the RVC and Stirling, for example, use it to support a regular programme of seminars on matters relating to animal welfare. Other examples of activities supported this year are described below. More information on these is on the UFAW website (www.ufaw.org.uk/links-news-events.php)

The number of LINKS continues to grow around the world. Universities which are part of the LINK network become eligible to apply for UFAW awards such as the Animal Welfare Student Scholarships

Hartpury/Writtle/Moulton

For a number of years UFAW has been supporting the annual Student Animal Welfare Conference that is organised jointly by Hartpury, Moulton and Writtle Colleges. Students from each college present the outcome of research they have undertaken as part of their academic studies – either as a poster or as a talk.

Edinburgh

Students on the MSc Applied Animal Behaviour and Animal Welfare course at the University of Edinburgh, organised a conference on ‘The Future of Animal Welfare’ in February 2013, and with the support of the LINK scheme were able to invite a range of guest speakers, including Professor Christopher Wathes (RVC), Professor Jonathan Copper (University of Lincoln) and Professor Xavier Manteca (Universitat Autònoma de Barcelona).

Newcastle

UFAW supported an ‘Animal Health’ conference organised by the 3rd year students from the School of Agriculture, Food and Rural Development at Newcastle University.

Bristol

Staff and PhD students from University of Bristol’s Department of Clinical Veterinary Sciences held a two-day conference focusing on animal welfare and behaviour research. This is an annual conference that UFAW has supported for a number of years. Other universities participating in this year’s conference included: the Scottish Rural College (formerly Barony, Elmwood and Oatridge Colleges and the Scottish Agricultural College), the University of Lincoln, Newcastle University, the University of Nottingham, and the University of Edinburgh.



Professor Temple Grandin at University College, Dublin.

University College, Dublin

In April 2013, UFAW supported the visit of Temple Grandin, Professor of Animal Science at Colorado State University, to University College, Dublin where she gave a talk on ‘Auditing Animal Welfare: Practical Improvements in Slaughter Plants’ to an audience of over 300 staff and students.

University of Prince Edward Island, Canada

UPEI have used their LINK fund to help some of their students attend an Intercollegiate Animal Welfare Judging & Assessment Contest, held this year at the University of Guelph, Ontario, Canada. This contest is open to teams of students with an interest in animal welfare and seeks to teach ethical reasoning, encourage objective assessment of animal welfare on the basis of scientific theory and data, promote critical thinking, and improve communication skills.

University of Guelph, Canada

UFAW continued its on-going support for the University of Guelph’s Animal Welfare Research Symposium. This annual event, which took place in May 2013, was organized by the Campbell Centre for the Study of Animal Welfare

and featured presentations on a range of subjects including the welfare consequences of ‘boredom’, animal housing, early warning signs for injury and disease, and assessing and improving behaviour issues.



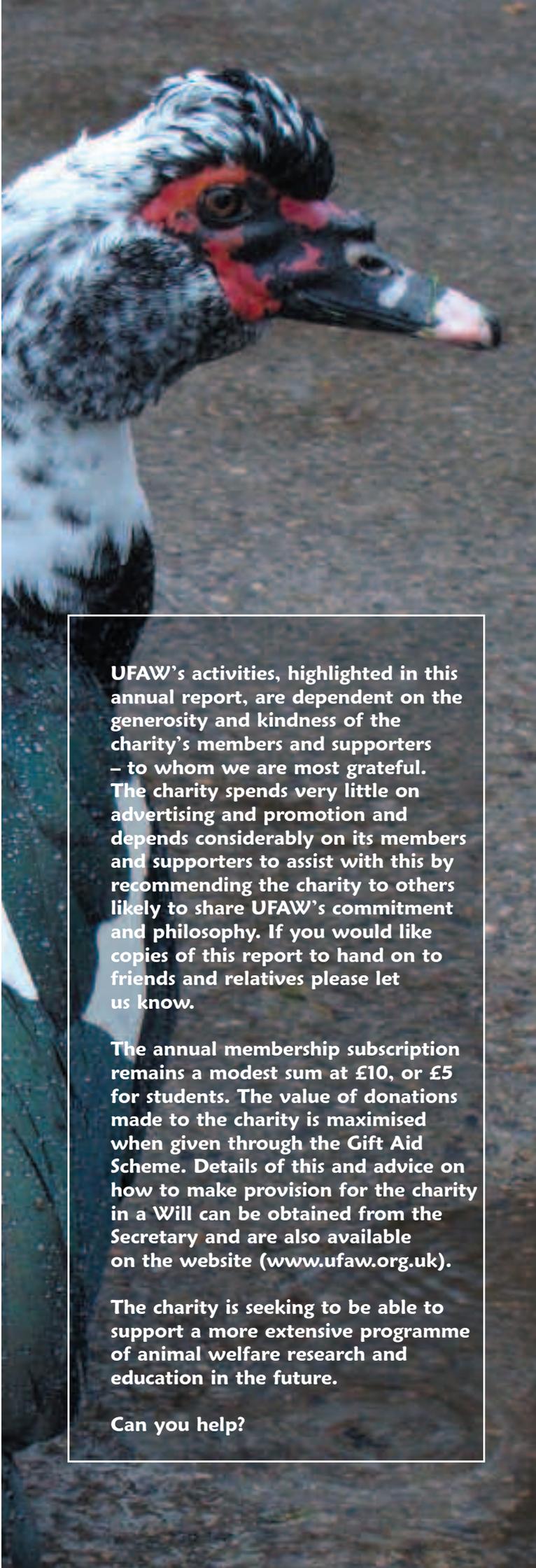
Prize winners and staff at the UFAW Student Animal Welfare Conference. Left to right: Dr Wanda McCormick (senior lecturer at Moulton College); Katherine Smith (Writtle College); Dr Jonathon Amory (principal lecturer at Writtle College); Luisa Dormer (Hartpury College); Nicole Renn (Moulton College); Dr Stephen Wickens (Development Officer at UFAW); Jenna Catlin (Moulton College); Lucy Clarke (subject leader at Hartpury College).



Posters at the Animal Welfare Research Symposium, University of Guelph.



Staff and students from the Department of Clinical Veterinary Sciences, University of Bristol.



UFAW's activities, highlighted in this annual report, are dependent on the generosity and kindness of the charity's members and supporters – to whom we are most grateful. The charity spends very little on advertising and promotion and depends considerably on its members and supporters to assist with this by recommending the charity to others likely to share UFAW's commitment and philosophy. If you would like copies of this report to hand on to friends and relatives please let us know.

The annual membership subscription remains a modest sum at £10, or £5 for students. The value of donations made to the charity is maximised when given through the Gift Aid Scheme. Details of this and advice on how to make provision for the charity in a Will can be obtained from the Secretary and are also available on the website (www.ufaw.org.uk).

The charity is seeking to be able to support a more extensive programme of animal welfare research and education in the future.

Can you help?

Administration & Finance

Annual General Meeting 2012

The AGM was held at the Old School, Brewhouse Hill, Wheathampstead. As in previous years this was held in conjunction with the General Meeting of the Humane Slaughter Association and Council of Justice to Animals (HSA & CJA). The members of UFAW Council also act as Trustees for the HSA. Joint meetings are held to save time and money.

The notice convening the meeting had been sent to all subscribers and was taken as read. The meeting agreed the Minutes of the AGM of 2011 and resolved to receive the Accounts and Auditor's Report for the year ended 31st March 2012. There were no questions on the Report of the year's work and the meeting resolved that the Report and Accounts be received.

It was resolved that Anthony Joseph & Co, Registered Auditors, be appointed as auditors to UFAW and its associated Trusts and their remuneration should be fixed by Council.

Mr M T Bird retired from the Council. There were two new candidates for election, and in accordance with UFAW's Articles of Association Mr Alick Simmons and Dr David Sargan were elected. Professor R Bennett, Professor J Bradshaw, Ms B Cooper and Professor N Gregory were re-elected.

Notice of Annual General Meeting 2013

The Annual General Meeting of the Universities Federation for Animal Welfare will be held at 12.30pm on Wednesday 16th October 2013 at The Old School, Brewhouse Hill, Wheathampstead. The formal notice and agenda have been sent to all members and are available from the Secretary at the registered office.

Finance and Accounts

The summarised accounts set out overleaf have been extracted from the full accounts and have been prepared in accordance with the Companies Act 2006, which were approved by the Directors/Council and signed on its behalf on 16th July 2013.

The full accounts have been audited and the auditors' opinion was without qualification. The accounts will be filed with the Companies Registry and the Charity Commission after the annual general meeting on 16th October 2013.

Full accounts, and the audit report can be obtained from the Company Secretary, The Old School, Brewhouse Hill, Wheathampstead, Herts AL4 8AN.



Donald Davidson retires

UFAW Secretary Donald Davidson retired from his position at the end of July this year. He was appointed as Secretary of the charity in 1997 and in due course also became Secretary of the HSA. He has overseen many developments and changes in UFAW over the years, including the move from South Mimms to the present offices in Wheathampstead. We are all very grateful to him for his 17 years of excellent work for the administration and finances of the charities and wish him a very happy retirement.

Finance and Accounts

Summary of Financial Activity year ended 31st March 2013

	2012/13 £	2011/12 £
Incoming resources:		
Voluntary income		
Subscriptions & donations	31,375	25,749
Appeals	2,473	2,265
Legacies	<u>140,393</u>	<u>101,054</u>
	<u>174,241</u>	<u>129,068</u>
Charitable activities		
Publications	79,079	70,517
Royalties & lecture fees	5,020	9,081
Symposium	<u>4,185</u>	<u>47,770</u>
	<u>88,284</u>	<u>127,368</u>
Investment income		
Interest bearing deposits	1,408	2,174
Securities	<u>149,306</u>	<u>133,500</u>
	<u>150,714</u>	<u>135,674</u>
Total incoming resources	<u>413,239</u>	<u>392,110</u>
Resources expended:		
Costs of generating funds	71,000	67,543
Charitable activities	284,992	505,178
Governance costs	5,450	3,000
Other resources expended	<u>169,099</u>	<u>166,128</u>
	<u>530,541</u>	<u>741,849</u>
Total resources expended	<u>530,541</u>	<u>741,849</u>
Net (outgoing)/incoming resources for the year	<u>(117,302)</u>	<u>(349,739)</u>
Other recognised gains and losses:		
Net realised gain on investments	72,470	221,861
Net income/expenditure for the year	<u>(44,832)</u>	<u>127,878</u>
Net unrealised (losses)/gains on investments	616,108	(180,003)
Unrealised loss on revaluation of property	<u>(170,740)</u>	<u>-</u>
Net movement in funds	<u>400,536</u>	<u>307,881</u>
Balance brought forward	<u>6,493,010</u>	<u>6,800,891</u>
Balance carried forward	<u>6,893,546</u>	<u>6,493,010</u>

BALANCE SHEET as at 31st March 2013

	2012/13 £	2011/12 £
Fixed assets:		
Tangible fixed assets	400,084	571,569
Investments	<u>6,272,553</u>	<u>5,854,465</u>
	<u>6,672,637</u>	<u>6,426,034</u>
Current assets:		
Debtors	40,417	19,835
Term deposits at bank	356,500	289,323
Cash at bank & in hand	<u>32,051</u>	<u>30,447</u>
	<u>428,968</u>	<u>339,605</u>
Creditors:		
Amounts falling due within 1 year	<u>(129,042)</u>	<u>(98,957)</u>
Net current assets	<u>299,926</u>	<u>240,648</u>
Total assets less current liabilities	<u>6,972,563</u>	<u>6,666,682</u>
Creditors:		
Amounts falling due after more than 1 year	<u>(79,017)</u>	<u>(173,672)</u>
Net assets	<u>6,893,546</u>	<u>6,493,010</u>
Funds:		
Unrestricted	6,361,994	6,003,166
Restricted	<u>531,552</u>	<u>489,844</u>
	<u>6,893,546</u>	<u>6,493,010</u>

The summarised accounts were approved by Council and signed on their behalf on 16th July 2013



L Brown MBE BVSc BA PhD FSB MBA FRCVS
Chairman



C McCann BSc ACA
Hon Treasurer

Independent Auditors' Statement to the Council of the Universities Federation for Animal Welfare

We have examined the summarised financial statements that comprise the summary statement of financial activities and summary balance sheet.

Respective Responsibilities of the Council and Auditors

You are responsible as the Council for the preparation of the summarised financial statements. We have agreed to report to you our opinion on the summarised financial statements' consistency with the financial statements, on which we reported to you on 16th July 2013.

Basis of Opinion

We have carried out the procedures we consider necessary to ascertain whether the summarised financial statements are consistent with the full financial statements from which they have been prepared.

Opinion

In our opinion the summarised financial statements are consistent with the full financial statements for the year ended 31st March 2013.



S Francis-Joseph FCCA, Senior Statutory Auditor, Anthony Joseph & Co, Registered Auditors, Stevenage, 16th July 2013.

Universities Federation for Animal Welfare

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Hertfordshire AL4 8AN, UK

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Registered in England Charity No. 207996

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I J Lean BSc PhD MSB
J H Pratt BVM&S DVSM FRCVS
G D Sales BSc PhD AKC MSB DipTCDHE
Professor R S Anderson BVMS PhD MRCVS
Professor P M Biggs CBE DSc DVM FRCPath
FSB FRS FRCVS
B R Howard BVMS PhD MRCVS

Council (who are the Directors of the Limited Company)

Chairman: L A Brown MBE BVSc BA PhD FSB MBA FRCVS*^Λ
(from Oct 2012)

Vice-Chairman: Professor R M Bennett BSc MSc PhD^Λ (from Oct 2012)

Honorary Treasurer: M T Bird FCA*^Λ (to Oct 2012)
C L McCann BSc ACA*^Λ (from Oct 2012)

Members
Professor J Bradshaw BA PhD *
B Cooper VN Cert DTM
Professor N Gregory BSc PhD
Professor A Lawrence BSc DipRurSci PhD
Professor A Nolan MVB DipECVA DipECVPT DVA
MRCVS^Λ
D Pritchard BSc BVetMed MPH MRCVS
M Radford OBE LLB
D R Sargan MA PhD* (from Oct 2012)
A G Simmons BVMS MSc MRCVS (from Oct 2012)

*Member of the Grant Panel ^ΛMember of the Finance Panel

Staff

**Chief Executive
& Scientific Director:** James K Kirkwood OBE BVSc PhD FSB HonFRCVS

**Deputy Scientific
Director:** Robert C Hubrecht OBE BSc PhD FSB
Scientific Officer: Elizabeth Carter BSc MSc
Development Officer: Stephen M Wickens BSc PhD
Editorial Assistant: Steven Weddell BSc BVSc MRCVS HND

**Public Relations
& Fundraising Officer:** Brian D Pemberton BA MA
Secretary: Donald C Davidson
Office Staff: Samantha Griffin
Wendy L Goodwin

Registered Auditors: Anthony Joseph & Co, Suite F47, Business & Technology
Centre, Bessemer Drive, Stevenage, Herts SG1 2DX, UK

Bankers: HSBC Bank plc, 171 Darkes Lane, Potters Bar, Herts
EN6 1BU, UK

Barclays Bank plc, 33 Darkes Lane, Potters Bar, Herts
EN6 1BA, UK

Santander UK plc, Bridle Road, Bootle L30 4GB, UK
Bank of America, Westwood Village Branch, PO Box
37176, San Francisco, CA 94137-0001, USA

Solicitors: Withers LLP, 16 Old Bailey, London, EC4M 7EG, UK

Investment Advisers: Smith & Williamson Investment Managers,
25 Moorgate, London EC2V 5NS, UK



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