



Universities Federation for Animal Welfare Annual Report 2016-2017

Science in the Service of Animal Welfare



www.ufaw.org.uk

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.

This report highlights the work undertaken by the charity during the last year which has been possible due to the continued commitment of its members and donors who have supported the charity through subscriptions, donations and legacies. This support is the very heart and life-blood of the charity and enables us to continue to strive for improvements in animal welfare – for which we thank you.

UFAW's vision is simple – to improve animals' lives through research, education, information and advice. It does this by:

- 1 Promoting, funding and supporting animal welfare science and technology that underpins advances in animal welfare
- 2 Promoting and supporting education in animal care and welfare
- 3 Providing information, organising meetings and publishing books, articles, technical reports, information on its website and the journal *Animal Welfare*
- 4 Providing expert advice to government departments and other bodies, and helping to draft and amend laws and guidelines



Photo: Dr Arvind Sharma, University of Queensland

One of the grants UFAW awarded this year was to help assess the welfare of cows in Indian cattle shelters

Welcome to the 2016/17 Annual Report for UFAW

From its earliest days in 1926, UFAW has strived to improve the welfare of animals and advance the science of animal welfare. 90 years ago this year, Professor Sir Frederick Hobday, Principal of the Royal Veterinary College, was appointed President of UFAW and began to help establish the scientific approach to animal welfare problems that the charity has pioneered.

By using a scientific approach, we've begun to learn more and more about a whole variety of species of animals – what matters to them and how we can best meet their needs. And that knowledge is growing rapidly – not only for our pets, of which there are now around 57 million in the UK, but also the many millions of animals kept on farms, in zoos, in scientific research, and in the wild.

UFAW has led the way in discovering and disseminating scientific knowledge about animal welfare and this past year has been no exception. The charity has supported a wide range of research projects around the world, including one which aims to try to develop a method which allows us to better understand how an animal feels – perhaps the most fundamental question in animal welfare.

This year has also seen the publication of the 100th edition of UFAW's scientific and technical journal *Animal Welfare* – a real milestone for the charity. The journal was established with the aim of producing a quality technical publication that dealt specifically with peer-reviewed scientific and factual aspects of animal welfare which would, by sharing knowledge, lead to an improvement in the health and well-being of animals.

As this review period draws to a close, UFAW is also close to achieving its 100th University LINK, thus continuing to build global capacity in terms of sharing knowledge and understanding, promoting best practice and helping the next generation of animal welfare advocates.

UFAW's progress and achievements over the past twelve months is a reflection of the support the charity has had from its members, donors and supporters. I would like to thank everyone who shares UFAW's vision of working to improve animals' lives through research, education, information and advice by continuing to give their support. Through its work UFAW has, and continues to make, a difference to the lives of millions of animals all around the world. Thank you.



Professor Andrea Nolan OBE
Chairman of Council



“UFAW has led the way in discovering and disseminating scientific knowledge about animal welfare and this past year has been no exception”



“UFAW is not just a UK charity, but works internationally, funding essential research and encouraging young animal welfare professionals around the world”.

UFAW’s strapline, summarising UFAW’s approach to improving animal welfare, is *science in the service of animal welfare*. While we have learnt much about animals and their welfare, there are still large gaps in our understanding, simply because of the very large numbers of species whose welfare we affect, and the complexity of their lives and adaptability. Where we lack knowledge about what matters to animals, how to assess their welfare, or how best to meet their needs then it is often necessary to rely on research to provide these answers; and supporting the necessary science to do this is one of UFAW’s core activities.

UFAW is not just a UK charity, but works internationally, funding essential research and encouraging young animal welfare professionals around the world. Over the last year, UFAW has supported a range of projects aimed at improving our knowledge of the impact of various human activities on animal welfare. Examples include: projects on the implications of disturbance to water vole populations, the welfare of cattle in shelters in India, and the care of captive gerbils and pigmy slow lorises. UFAW has also supported projects aimed at improving the tools available to better assess animal welfare. UFAW has also continued its support of a research scholarship on neural markers of poultry welfare. The use of thermography to assess health and perhaps even animals’ feelings is an exciting new area of welfare research, but techniques need validation. To this end, UFAW has supported research on

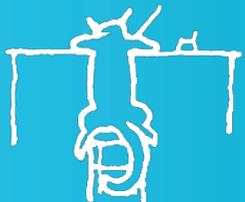
thermography as a welfare tool both through its project grants and through one of its major awards.

An active research community is essential for the development of animal welfare and UFAW continues to build capacity in animal welfare through its project grants, programme of educational meetings, widely respected publications on animal welfare and support of the Animal Welfare Research Network. UFAW has added to its information resource on genetic conditions affecting the welfare of companion animals and there are now 61 new or updated conditions on the website. UFAW committed this year to three years further support of the Garden Wildlife Health Project, which grew out of a UFAW initiative to improve the welfare of garden birds. The collaborative project uses observations from the public as a valuable source of information about new disease threats to wildlife, some of which are related to human activities.

UFAW receives no funds from universities or government, so all of this valuable work is very dependent on the generosity of UFAW’s supporters. I would like to warmly thank all of those who have supported UFAW through membership, donations or who have pledged a legacy.

A handwritten signature in black ink, reading "Robert C Hubrecht". The signature is fluid and cursive, with a long horizontal stroke at the end.

Robert C Hubrecht OBE
Chief Executive & Scientific Director



PROMOTING AND SUPPORTING ANIMAL WELFARE SCIENCE

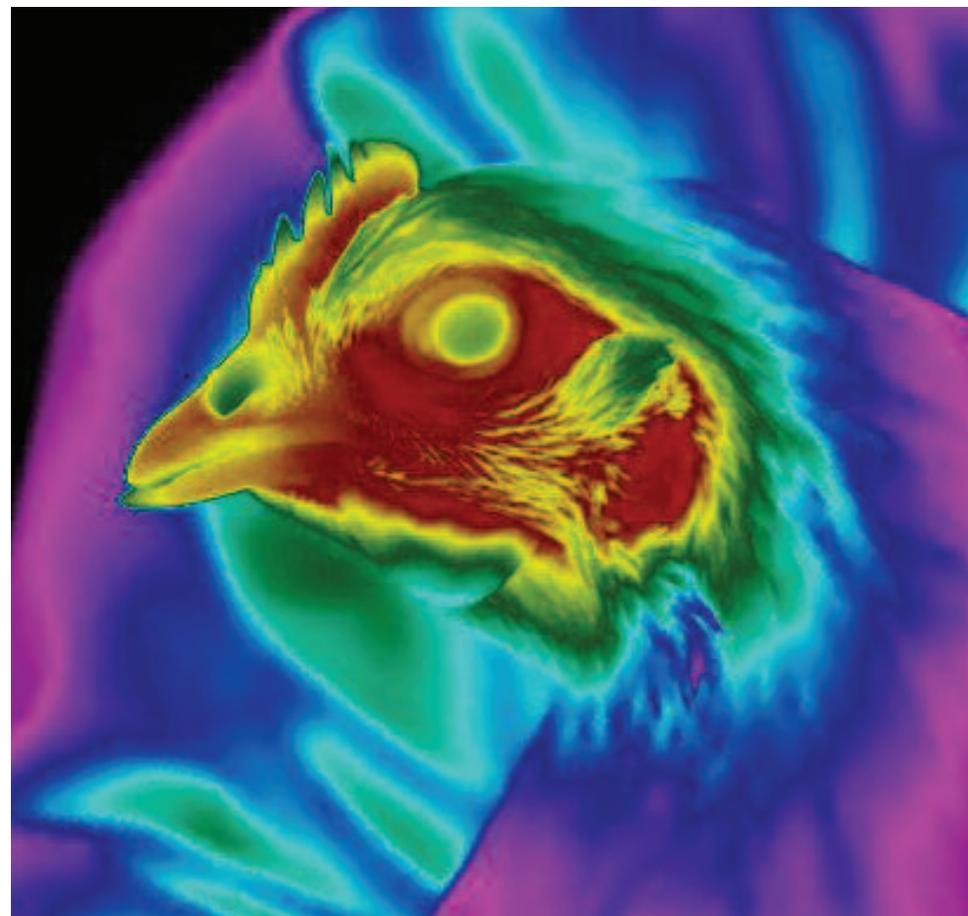
UFAW promotes and supports high quality science that will lead to substantial advances in animal welfare, and to promote education in animal welfare – particularly at the university and college level.

PROVIDING FUNDING FOR RESEARCH TO BENEFIT ANIMAL WELFARE

One of the primary ways in which UFAW promotes science in the service of animal welfare is by supporting fundamental scientific research aimed at improving or better understanding the welfare of animals. UFAW's grants range from small pilot awards to major research projects.

An award of almost £50,000 was made to Professor Mike Mendl and colleagues at Bristol University to try to develop a method which allows us to better assess how an animal feels – perhaps the most fundamental question in animal welfare. Using thermography (thermal imaging) they will test a hypothesis that the left and right sides of the brain respond differently in different emotional states. These 'brain lateralisation' effects may be detectable as temperature changes in various areas such as the nostrils. If successful, the technique might allow us to know when animals are in positive or negative emotional states and so guide us towards ways of reducing negative experiences and increasing positive ones for animals. Initial tests in chickens and cows are currently underway.

Smaller grants included an award to Nuno Franco (a previous UFAW Young Animal Welfare Scientist of the Year) to investigate whether a very low cost thermal imaging device which can be attached to a mobile phone could be used to accurately measure animals' body temperature, in place of more stressful invasive measuring techniques and an award to Professor Clive Phillips at the University of Queensland, Australia, to help assess the welfare of cows in Indian cattle shelters. UFAW also supported Dr John Mulley at the University of Bangor to look at ways of enriching the cages of laboratory gerbils such as by providing them with artificial tunnels to more closely mimic their natural habitats.



Using thermography to test a hypothesis that the left and right sides of the brain respond differently in different emotional states

Photo: Helen Telkenranta

As well as affecting the welfare of captive animals in zoos, laboratories or the food chain, humans often impact the welfare of animals in the wild, and UFAW supports work to understand and minimise these effects. Last year, UFAW provided a grant to Professor David Macdonald of Oxford University to investigate whether deliberately displacing water voles from their habitats (which is often done prior to building works) in an attempt to persuade them to relocate actually does persuade the voles to relocate or in fact harms them by exposing them to predation or starvation. Following the initial results, the charity agreed to continue support for the study, which will also examine whether there are more or less appropriate times of year to attempt to displace voles to a new habitat.

The charity also supported a workshop project in Thailand aimed at improving the welfare of elephants living in captivity in Thailand and elsewhere in Southeast Asia. Dr Lisa Yon, a Lecturer in Zoo and Wildlife Medicine at the School of Veterinary Medicine and Science, Nottingham University and UFAW LINK member, has been instrumental in developing the workshop, which is aimed at elephant owners and mahouts from Thailand's elephant camps. The workshop will help participants develop a better understanding of elephant welfare, learn new and better training and care methods and so improve the welfare of these elephants.

PROVIDING TRAVEL GRANTS TO FACILITATE SHARING AND KNOWLEDGE

UFAW offers travel grants to support students and academics to attend scientific meetings. In the last year, for example, UFAW funded Dr Rowena Packer from the Royal Veterinary College to present her work on dog welfare at a conference in France. UFAW also supported Professor Mangala Gunatilake, a laboratory animal veterinarian from Sri Lanka, to travel to Newcastle in the UK to attend a training course on the Assessment, Prevention and Alleviation of Pain and Distress in Laboratory Animals. UFAW has also provided funds to enable several researchers, who would otherwise have been unable to attend, to present their work at the UFAW symposium.



Photo: John Edward Roberts

UFAW supported a workshop project in Thailand aimed at improving the welfare of elephants. The elephant seen here is being trained using positive reinforcement techniques

COMING TOGETHER TO SHARE KNOWLEDGE AND ADVANCE UNDERSTANDING

UFAW promotes animal welfare science and the exchange of new ideas in the field by organising scientific meetings, by participating in major scientific events around the world and by supporting animal welfare scientists to present their findings at meetings and conferences.

In 2016/17 the charity organised several scientific meetings. The annual joint UFAW/RSPCA rodent and rabbit welfare meeting took place in Edinburgh in November 2016. Refinements discussed at the meeting included the role of lighting conditions on the welfare of laboratory mice and techniques to reduce the welfare impact of irradiation in rodent models of cancer therapy. Plans are well underway for this year's meeting.

UFAW staff co-organised a symposium, with the RSPCA, at the Measuring Behaviour conference held in Dublin in May 2016. The meeting, entitled *The 9 to 5 Rodent, time for change?* highlighted the effects of carrying out behavioural tests on rodents at different times of day. Rodents are nocturnal, yet their behaviour is often studied in laboratories during the daytime under bright light. The symposium featured several talks on the welfare implications of carrying out behavioural experiments on nocturnal rodents during the day time when they would normally be asleep. The meeting also discussed ways to test rodents in less stressful conditions that would both improve the quality of the data collected and improve the welfare of the animals. Several papers from the meeting were published in a special issue of the Journal of Neuroscience Methods.

For a number of years UFAW has, with the Laboratory Animal Science Association, organised an annual meeting on the welfare of animals used in research for animal care professionals. This year, speakers at the meeting provided information and advice on how best to assess the welfare of animals. Presentations included a paper by Dr Golledge, UFAW's Senior Scientific Programme Manager, on the importance of proper validation of assessment techniques. Another presentation addressed the development of a rodent

touchscreen apparatus and protocols with the aim that the rodents might indicate their affective states. The difficulties of screening tens or hundreds of thousands of small zebra fish in research facilities, together with advice on how to do so, were also covered. Cephalopods (eg octopuses, squids, cuttlefish), when used in research, are now protected under EU legislation, and a presentation on the challenges involved in assessing their welfare was therefore very topical.

UFAW has also provided support for scientific meetings organised by others. The charity supported the inaugural meeting of the Animal Welfare Research Network, which *“aims to bring together the UK animal welfare research community, researchers in related areas, and stakeholders with interests in animal welfare, to identify important research topics, increase collaboration and support and encourage research activities”*, an aim shared with UFAW.

Good welfare leads to good science in China

UFAW helped organise the 4th Sino-UK International Forum on Animal Welfare and Ethics in Shanghai, China in March 2017. UFAW staff travelled to China to give talks on the welfare of research animals and to network with the large animal research community in China who are becoming increasingly engaged in laboratory animal welfare.

UFAW has been a faculty member from the outset of this project, helping in the development of subject matter, lecture programme and also by giving lectures and teaching at the meetings. The seminars were initiated because of a Government priority to advance the 3Rs principles of Replacement, Reduction, and Refinement developed by UFAW scholars Russell and Burch in the 1950s, and which are now accepted around the world; and because China is developing codes of practice for the care and use of animals used in research. UFAW has provided comments and advice on the draft codes, and we have been informed that the codes should come into effect in China by the end of the year.

Animal welfare in Israel

The UFAW SAWI Fund supports and promotes scientific and educational initiatives for the advancement of animal welfare in Israel. In September 2011 a UFAW SAWI Scholarship was awarded to Roi Mandel to carry out research aimed at improving the welfare of dairy cattle. Roi is now nearing the end of his project and spoke about his work at a symposium on animal welfare, held at the Koret School of Veterinary Medicine in January. UFAW supported the meeting by sending UFAW educational materials and by funding the travel of his co-author and co-supervisor to attend the symposium.

Wild Animal Welfare Committee

UFAW has a long standing interest in wild animal welfare issues, supporting many initiatives over the years to better understand how human activity impacts on their welfare and on ways this might be mitigated. This year, in addition to providing advice to the Wild Animal Welfare Committee (WAWC), UFAW has supported the attendance of Professor David Fraser, University of British Columbia, Canada – an internationally recognised expert on the welfare of wild animals – to give the keynote speech at the WAWC conference held in Edinburgh on Wild Animal Welfare: Challenges and Opportunities. The meeting was attended by over 70 delegates, with the aim of identifying priorities for policy development and government action.

2017 International symposium on animal welfare

In June 2017 UFAW held its biennial international symposium *Measuring animal welfare and applying scientific advances – Why is it still so difficult?* at Royal Holloway, University of London. The symposium attracted over 240 delegates from 26 countries, including leading scientists, veterinary surgeons, policy makers and others interested in animals and their welfare.

The theme was inspired in part by a paper published by Professor Georgia Mason (University of Guelph) and Professor Mike Mendl (University of Bristol) in UFAW's journal *Animal Welfare* in 1993. Both professors gave keynote lectures at the symposium, which

addressed conceptual and methodological difficulties in measuring animal welfare, helped promote new ideas and aimed to encourage higher quality and better-focused animal welfare science. An outstanding feature of the symposium was the quality of the presentations, including those from very new researchers, which gives great hope for the future of animal welfare research.

The use of controlled atmosphere methods for stunning or killing animals used for food, in research and for pest control

Controlled atmosphere stunning methods are commonly used in the production of meat, and for killing rodents used in research. For instance, many pigs and chickens are stunned using carbon dioxide in slaughterhouses. However, there is considerable scientific concern regarding the humaneness of these methods. Other gas mixtures have been proposed and controlled atmospheres have also been proposed or used for other animal stunning or killing purposes so UFAW jointly organised with the Humane Slaughter Association a two-day meeting in June 2017 on the animal welfare aspects of controlled atmospheres for stunning or killing animals. The meeting presented the latest research on alternatives, practicalities, welfare and translation of the science with the aim of improving the welfare of animals in slaughterhouses, laboratories or during the control of pests.

RECOGNISING EXCELLENCE – AWARDS

Medal for Outstanding Contributions to Animal Welfare Science

The UFAW medal for Outstanding Contributions to Animal Welfare Science recognises the exceptional achievement of scientists who have made fundamental contributions to the advancement of animal welfare over a number of years.

UFAW made two awards in 2017 to two exceptional scientists who have had a substantial impact on animal welfare – Professor Sandra Edwards of the School of Agriculture, Food and Rural Development at Newcastle University and Professor Jeff Rushen of the Dairy Education & Research Centre, University of British Columbia, Canada.

Professor Edwards is a globally respected expert on pig welfare. Her research has focused on the major welfare issues facing the pig industry world-wide, seeking to better understand these problems at a scientific level and using this knowledge to develop practical approaches to enhance pig welfare. Many of the welfare projects that Sandra has led involved collaborations between government, academia, NGOs and industry seeking to work together for the benefit of animals. In addition, she has provided expertise on farm animal welfare for influential policy/advisory committees such as the Farm Animal Welfare Council (FAWC) and European Food Safety Authority (EFSA), the industry and welfare assurance schemes.

Professor Edwards has published more than 200 papers and book chapters and serves on the editorial board for a range of journals. She has inspired young animal scientists and agriculturalists through her teaching animal welfare, and how to measure and promote it.

UFAW's second medal winner, Professor Jeff Rushen, has an extraordinary lifetime record in the field of animal welfare science. He has co-authored some of the most important books to date on both the welfare of cattle and stereotypic animal behaviour.

Over the course of his career, Jeff has published over 300 papers that provide a model of clear-thinking and research excellence. Amongst his work has been a series of very high impact papers on how people can become an important



Dr Robert Hubrecht with Dr Pol Llonch, UFAW Young Animal Welfare Scientist of the Year

source of fear for animals and how this fear can be mitigated to improve human-animal relationships.

Jeff also has an impressive record of service and leadership within the field. He led Canada's National Farm Animal Care Council (NFACC) process ensuring that the welfare standards are science-based, and also served as science expert to the Council. He was a member of the European Food Safety Authority working group reviewing dairy cow welfare and is currently a member of the US Farmed Animal Well-being Commission for beef.

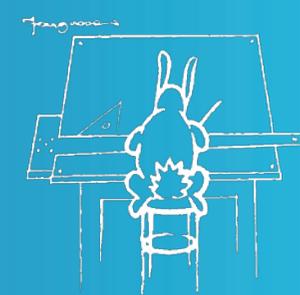
Young Animal Welfare Scientist of the Year

UFAW makes this award to recognise the achievements of young scientists who have made significant contributions in improving the welfare of animals.

The 2017 winner of the award was Dr Pol Llonch, a Researcher with the School of Veterinary Science at the Universitat Autònoma de Barcelona, Spain. Dr Llonch has an impressive track record of more than 20 papers in peer-reviewed journals. He began his career working on the welfare of pigs being stunned using gas mixtures and he has since worked on a range of animal welfare topics affecting a variety of species, including the electrical stunning of mammals and fish and indicators of welfare in sheep, and most recently the relationship between animal husbandry, productivity, welfare and environmental sustainability. Pol's work has been

innovative and practical. He has also shown enthusiasm and skill at teaching animal welfare science.

EDUCATION IN ANIMAL CARE AND WELFARE



EDUCATING TOMORROW'S ANIMAL WELFARE ADVOCATES

UFAW promotes education in animal welfare – particularly at the university and college level – in a variety of ways. Over the past twelve months, new university LINKS have been made around the world, thereby helping UFAW to expand its outreach work, and UFAW's 2016 student scholars have made impressive progress in their chosen studies.

LINK SCHEME

Consisting of an international network of academics at 89 universities and research institutions, the LINK scheme is one of the ways that UFAW encourages interest and engagement in the science of animal welfare and builds world-wide capacity in this field. The scheme promotes animal welfare science and the objectives of UFAW at universities and similar institutions while providing a forum for the involvement of members and supporters, and we are grateful for the support given in response to the charity's 2017 Spring Appeal for this scheme.

Over the last twelve months, new LINKS have been created in Swansea, Durham and Leeds universities, the Wrocław University of Environmental and Life Sciences in Poland, Lviv National University of Veterinary Medicine and Biotechnology in Ukraine and Eötvös Loránd University in Hungary.

Distribution of UFAW LINKS

| | | | |
|------------------------|----|-------------|---|
| Europe | 56 | Asia | 3 |
| Americas | 21 | Australasia | 7 |
| Africa and Middle East | 2 | | |

CASE STUDY

In March, with the support of the UFAW LINK scheme, Professor Tetsuro Matsuzawa, a distinguished Professor at the University of Kyoto, Japan, gave a seminar to staff and students from the University of Stirling's Psychology Department. They heard a fascinating



Photo: UFAW

and very engaging presentation entitled *SAGA: An attempt to promote the welfare of chimpanzees and other non-human primates in Japan*. Professor Matsuzawa described the cognitive abilities of chimpanzees, using many video clips. In 2007 all biomedical research on chimpanzees ceased completely in Japan and Professor Matsuzawa explained how they had spent the past 10 years seeking to improve captive conditions for chimpanzees, including building new facilities at Kyoto University that consist of an outdoor compound with high climbing frames and naturalistic fauna, as well as large adjoining enclosures that allow them to simulate the social groupings characteristic of wild chimpanzees. He then summarized his own efforts in research, conservation, education, and social outreach concerning chimpanzees and other non-human primates, with a special focus on welfare issues.

UFAW Student Scholars 2016

Each year students awarded a UFAW Animal Welfare Student Scholarship are invited to present the findings of their studies at an annual meeting, to share their knowledge amongst their peers and forge valuable relationships within the academic world. For the 2016 scholars, the meeting was hosted by the University of Stirling in January 2017.

Understanding the needs of animals and assessing their welfare is always a difficult challenge because we cannot ask them how they feel. Instead we have to find ways of inferring this by finding measures that are reflective of their state and it is this challenge that was addressed by many of the scholars who presented at this year's meeting.

Topics included the impact of visitors on the Morelet's Tree Frog in a public aquarium (Martin Pearson, University of Chester), emotional contagion in laboratory rats (Lisa Waddell, University of St Andrews) and a novel technique to assess post-operative pain in laboratory New Zealand white rabbits (Caroline Krall, Newcastle University).

Animal Welfare Student Scholars 2017

This year, UFAW has awarded 14 Animal Welfare Student Scholarships. They join over 355 students who have, since 1983, aimed to investigate and improve the welfare of animals through undertaking a UFAW scholarship. The judging panel awarded the first 'Ruth Harrison Student Scholarship' to Eva Read. This scholarship has been established with the support of the Farm Animal Care Trust (FACT), and is in memory of Ruth Harrison, whose tireless work at the Trust, and seminal book, *Animal Machines*, led to reform and long-lasting improvements in farm animal welfare both within the UK farming industry and beyond.

Iona Charlton: 'Compare Colombian cattle welfare in a silvopastoral system with a pasture-only based system', under the supervision of Dr David Williams, University of Cambridge, UK.

Alexander Davies: 'Measuring chronic stress in canine epilepsy', under the supervision of Dr Rowena Packer, Royal Veterinary College, UK.

Helen Inzani: 'Behavioural evaluation of the welfare in wild birds caught for ringing', under the supervision of Dr David Williams, University of Cambridge, UK.

Katie Lihou: 'Using natural brooding patterns to develop intermittent lighting schedules for commercial chicks', under the supervision of Dr Jo Edgar, University of Bristol, UK.

Gabrielle Lindley: 'Identifying risk factors for obesity in companion animals using SAVSNET in order to improve their health and welfare', under the supervision of Dr Alan Radford, University of Liverpool, UK.

Reanne McDonald: 'Testing effects of static or varying enrichment on dairy calves', under the supervision of Dr Rebecca Meagher, University of Reading, UK.

Janica Niva: 'What is most enriching about learning for captive primates: Novelty and challenge or achievement and control?', under the supervision of Professor Christine Chadwell, University of Stirling, UK.

Eva Read: 'How feed restricted are dry sows?', under the supervision of Dr Rick D'Eath, Scotland's Rural College, UK.

Martha Sahota: 'Behavioural responses of primiparous and multiparous dairy cows at calf separation', under the supervision of Mrs Rosie Godfrey, Solihull College & University Centre, UK.

Mary Swift: 'The effect of enrichment on time spent displaying stereotypic behaviours in captive chimpanzees in a zoo, Kumasi, Ghana', under the supervision of Miss Magdalena Svensson, Oxford Brookes University, UK.

Petra Briene: 'Clarifying the links between skin lesions, aggression and lameness in breeding sows', under the supervision of Professor Frank Tuytens, Research Institute for Agriculture, Fisheries and Food, Belgium.

Eric de Andrade Culhari: 'Impact of photovoltaic canopy shade on animal welfare and energy efficiency in a tropical environment', under the supervision of Dr Alex Sandro Campos Maia, São Paulo State University, Brazil.

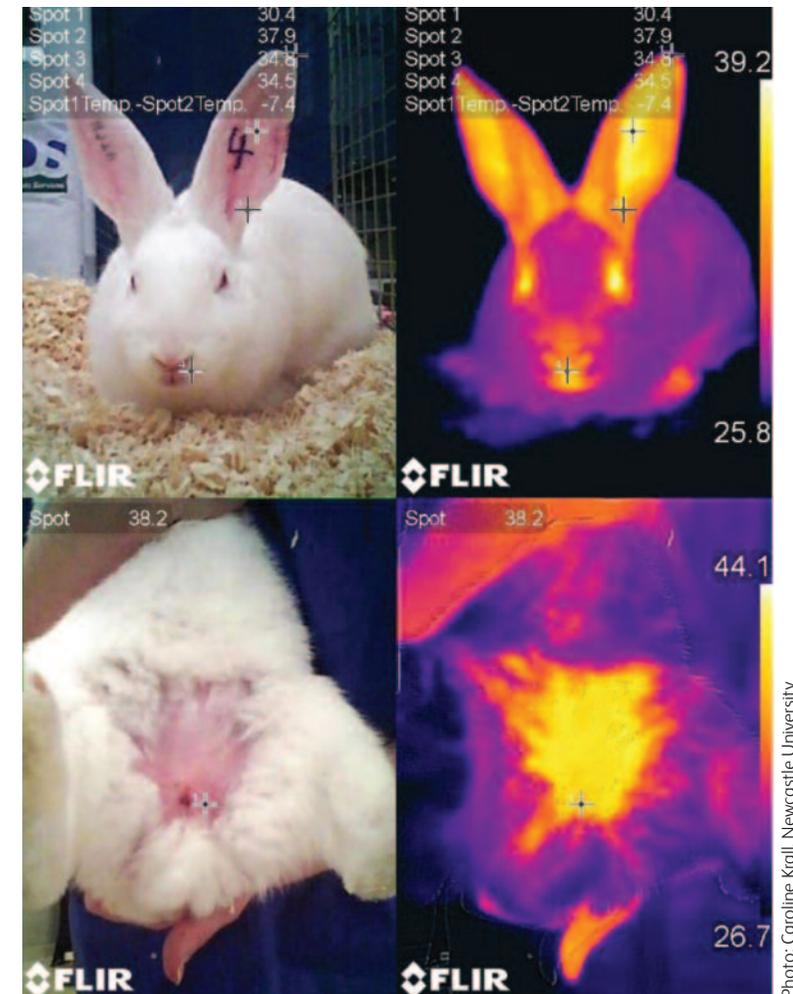
Lydia Inglis: 'The effectiveness of meloxicam in mitigating pain in response to mulesing', under the supervision of Dr Andrew Thompson, Murdoch University, Australia.

Cäcilia Wimmler: 'Intensively kept but still high welfare state? – Evaluation of a new Austrian pig welfare initiative', under the supervision of Dr Christine Leeb, University of Natural Resources and Life Sciences, Austria.

CASE STUDY Caroline Krall, Newcastle University

Infrared thermography is a relatively new, non-invasive, technique that looks for changes in surface temperature that may be indicative of inflammation or a painful stimulus. Assessing rabbit welfare using their behaviour is difficult, so Caroline Krall used this technology to investigate whether it could be used to support behavioural measures of post-operative pain in male rabbits under two different pain relief protocols, by comparing the temperature at three points in the ear and the nose.

For both pain relief protocols, there was a decrease in temperature in each point two hours post castration, matching previous findings, and a recovery by five hours. Caroline also found that the tip of the ear was the only location in which there was detectable variation in temperature between the protocols. The rabbits treated with the standard pain relief protocol showed significantly lower temperature at the tip five hours post-castration than those rabbits on an enhanced multi-modal pain relief protocol, possibly because of more pain and vasoconstriction in the standard group. Caroline was cautious in her interpretation, pointing out that temperature changes are not specific to pain, and that to fully validate the technique such changes need to be supported and linked with established pain recognition techniques.



Assessing rabbit welfare using infrared thermography

Photo: Caroline Krall, Newcastle University

SCHOLARS UPDATE

Rachel Tanner

Rachel Tanner, the last UFAW 3Rs Liaison Group student, worked for her PhD, funded by this scheme, on the development of an *in vitro* assay (the MGIT assay) as a correlate of TB protection, in the hope that the test might ultimately replace the use of animals in TB vaccine testing. UFAW is pleased to learn that the National Centre for the 3Rs (NC3Rs) has indicated that they will further support Dr Tanner's research on a project that aims to transfer the NHP MGIT assay to two major end-user laboratories (Public Health England and the Biomedical Primate Research Centre) for use in vaccine studies. The 3Rs Liaison Group studentship scheme has been wound up and the remaining funds will be used to support research to Replace, Reduce or Refine the use of animals.

Emma Harding

In 1998 Emma Harding was awarded the first UFAW Animal Welfare Research Training Scholarship (RTS), a three year PhD scholarship established by UFAW to encourage high quality science likely to lead to substantial advances in animal welfare. Emma published the findings from her work in the journal *Nature* (along with co-authors Mike Mendl and Elizabeth Paul) and since this time seven other talented students have also been supported in their studies, as they seek to improve the welfare of animals across a diverse range of species. A total of 25 papers have been published in peer-reviewed journals as a result of work supported through the RTS scheme.

Further information about each of these students, and details of their papers, has now been added to the UFAW website, including information about our latest scholar, Elena Armstrong for her project: *Developing lifetime animal welfare assessment tools using novel physiological measures of cumulative chronic stress*. See www.ufaw.org.uk/pastprojects

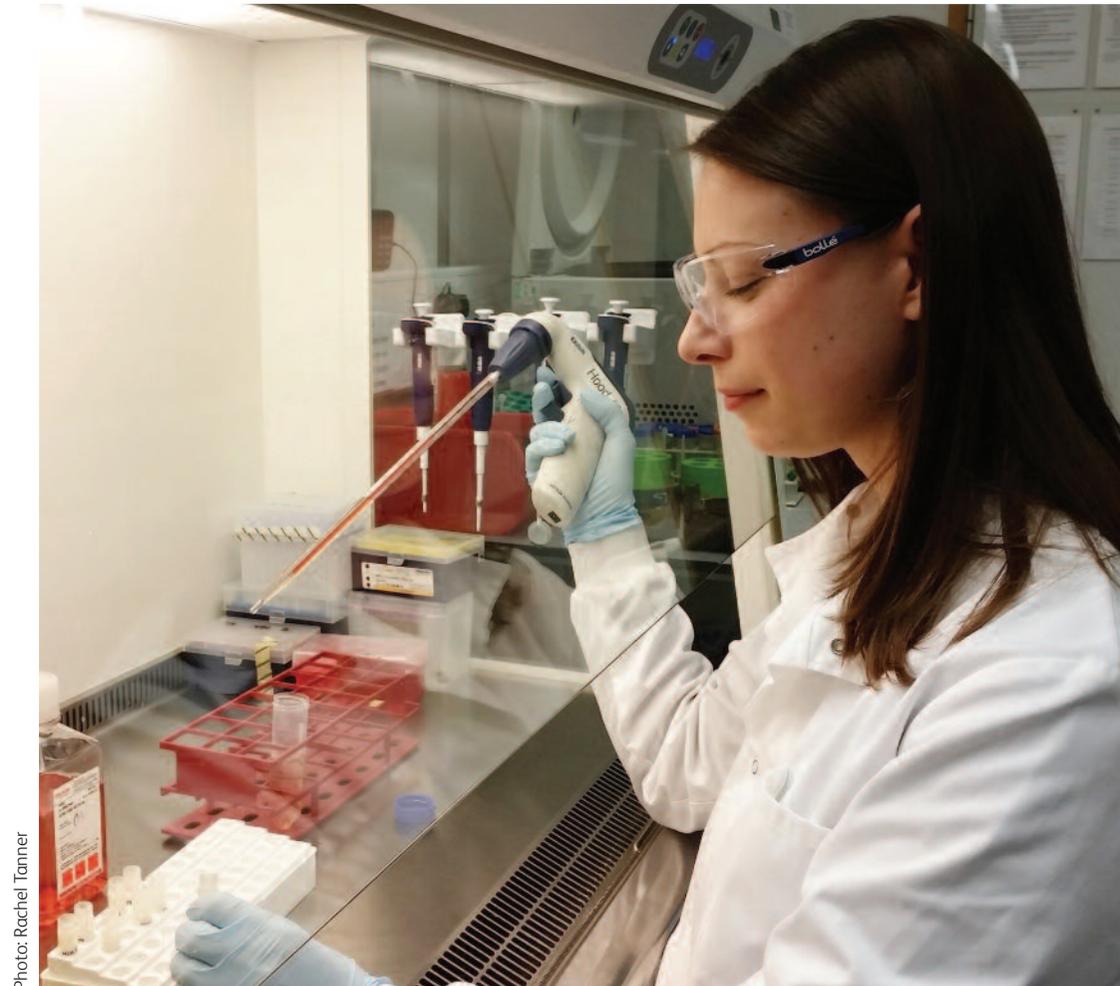


Photo: Rachel Tanner

Rachel Tanner UFAW 3Rs Liaison Group Student



Margaret Cooper and students in Rwanda with Ruby the dog

Photo: John and Margaret Cooper

Outreach in Rwanda

Long-serving UFAW members John and Margaret Cooper completed a two-week teaching trip to Rwanda, Central Africa and very kindly distributed educational materials which UFAW had supplied for the programme. John, who trained as a veterinary surgeon and who is now a specialist pathologist and his wife Margaret, a lawyer, combine their medical and legal backgrounds in the promotion of an inter-disciplinary approach to veterinary and biological education, wildlife conservation and forensic service and work with communities in East Africa. Their training included formal lectures, practical work (clinical cases, post-mortem examinations and laboratory investigations) and interactive sessions. Topics included the humane control of stray dogs, nursing care of sick animals and Rwandan slaughter practices.

Animal Welfare Journal reaches landmark issue

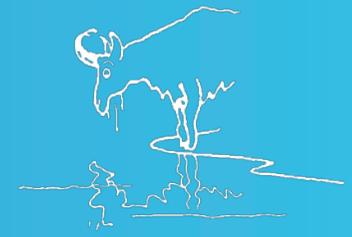
The 100th edition of UFAW's internationally renowned and respected scientific and technical journal *Animal Welfare* was published in November 2016. Launched in 1992, the first edition included papers on humane stunning of cattle, bullfighting, and the responses of park deer to disturbance by the public. The journal was established with the aim of producing a quality publication that dealt specifically with peer-reviewed scientific and factual aspects of animal welfare which would, by sharing knowledge, lead to an improvement in the health and well-being of animals.

Over the years, *Animal Welfare* has grown in readership and stature, regularly attracting high-quality papers from leading international experts in animal welfare science and with a global reach extending to over 43 countries. It has covered an extremely wide and diverse range of topics from the welfare costs of civet coffee tourism and empathy in veterinary students to using automated technology to monitor and improve zoo animal welfare and behavioural problems in dogs and cats.

The 100th issue contained 11 papers including studies on electrical stunning of edible crabs, assessment of horse welfare and how membership of voluntary welfare schemes results in better compliance with animal welfare legislation on farms.

New sections added to website

UFAW is continuing to expand the content available on its website and the latest information to be added is a new section entitled *Why UFAW's work is so important*. It is easy to forget that there is still so much to learn about the animals that we share our lives with – whether that is in our homes, on farms, within zoos, in the wild, or kept in laboratories – and continuing to support and learn about animals is a key part of being able to improve their welfare. The new section gives examples of areas where there are still welfare concerns, and shows how UFAW has helped to tackle these. So far sections have been added on the welfare of farmed animals and of animals used in scientific testing and research. Sections currently under construction will cover animal welfare for companion, zoo and wild animals. See www.ufaw.org.uk/important



PROVIDING EXPERT ADVICE

UFAW provides information and advice on aspects of biology, management, health, behaviour and ethics relating to the welfare of domestic and wild animals to government departments, non-governmental organisations, universities and others. The charity is also consulted on draft legislation, guidelines and codes of practice relating to animal welfare.

Over the past twelve months, UFAW staff have continued to provide animal welfare advice to the general public and to other Government, NGOs or companies that work with animals, either by formally taking part in internal advisory committees, by working as members of grant and ethics panels or by visiting and lecturing at facilities. Some examples are provided below:

Dr Hubrecht gave two lectures at the 4th UK-China Seminar on Research Animal Welfare and Ethics. The first lecture introducing a workshop by Dr Steve Schapiro from the University of Texas, was on the value of positive reinforcement training to encourage animals to voluntarily take part in routine husbandry and procedures, so improving animal welfare and the quality of data obtained. The second lecture was on primate captive care, behaviour and welfare.

Dr Hubrecht lectured on dog welfare and behaviour on the CAWSEL course *Law and Companion Animal and Horse Welfare* held at St Catharine's College, Cambridge. This course provides career progression development in animal welfare, ethics and law for researchers, animal care staff, legislators, and regulators working in this field.

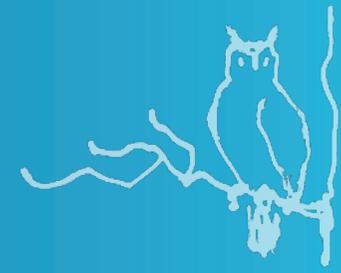
Over the last year, Dr Hubrecht has also served on advisory committees for a multi-national corporation and a conservation NGO. He is also a 3Rs Convenor for LASA, a scientific advisor to the Douglas Houghton Memorial Fund, and serves on an Animal Welfare and Ethical Review Body for a breeding and research establishment.



Photo: Understanding Animals in Research

Dr Golledge lectured on euthanasia at the 4th UK-China Seminar on Research Animal Welfare and Ethics. Dr Golledge also gave lectures at meetings of the Institute of Animal Technology, Oxford University, Edinburgh University and the Irish Government's 3Rs days. He has also taught on two master's degree courses in animal welfare at the University of Edinburgh.

Dr Stephen Wickens, UFAW's Development Officer, represented UFAW at the Wild Animal Welfare Committee (WAWC) meeting, the Animal Welfare Research Network meeting in February and two Marwell Zoo Ethics Committee meetings.



ADMINISTRATION AND FINANCE

Annual General Meeting 2016

The AGM was held at the Old School, Brewhouse Hill, Wheathampstead. This was held in conjunction with the General Meeting of the Humane Slaughter Association and Council of Justice to Animals (HSA & CJA), as in previous years, and the AGM of the Humane Slaughter Association (CIO). 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 members and was taken as read. The meeting agreed the Minutes of the AGM of 2015 and resolved to receive the Accounts and Auditor's Report for the year ended 31st March 2016. Questions on the Report of the year's work were answered by the officials present and the meeting resolved that the Report and Accounts be received.

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

Professor R Bennett and Mr A Simmons, stood down under the rules regarding rotation, both offered themselves for re-election, and were re-elected. Following the sad death of Professor Ohl a new candidate was proposed, Dr Anna Olsson. The nominations had the full support of Council.

Notice of Annual General Meeting 2017

The Annual General Meeting of the Universities Federation for Animal Welfare will be held at 12.30pm on Tuesday 7th November 2017 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 following summarised accounts 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 12th July 2017.

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 7th November 2017.

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

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 12th July 2017.

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 2017.



12th July 2017

S Francis-Joseph FCCA, Senior Statutory Auditor for and on behalf of, Anthony Joseph & Co Limited, Stevenage, Hertfordshire.

Summary of Financial Activity year ended 31st March 2017

| | 2016/17 £ | 2015/16 £ |
|---|------------------|------------------|
| Incoming Resources | | |
| Voluntary Income | 528,548 | 184,157 |
| Charitable Activities | 93,401 | 119,103 |
| Investment Income | 189,068 | 194,719 |
| Total Incoming Resources | 811,017 | 497,979 |
| Resources Expended | | |
| Cost of Generating Funds | 76,552 | 74,034 |
| Charitable Activities | 400,367 | 341,808 |
| Other Resources Expended | 159,943 | 150,806 |
| Total Resources Expended | 636,862 | 566,648 |
| Net Operational (Outgoing)/Incoming Resources for the Year | 174,155 | (68,669) |
| Other Recognised Gains and Losses: | | |
| Net Realised Gain/(Losses) on Investments | 148,763 | 213,969 |
| Unrealised Gains/Losses on Investments | 777,206 | (544,681) |
| Net Movement in Funds | 1,100,124 | (399,381) |
| Balance Brought Forward | 7,208,107 | 7,607,488 |
| Balance Carried Forward | 8,308,231 | 7,208,107 |

The summarised accounts were approved by Council and signed on their behalf on 12th July 2017



Professor A Nolan
OBE MVP DipECVPT DVA MRCVS
Chairman



C L McCann BSc ACA
Hon Treasurer

Balance Sheet as at 31st March 2017

| | 2016/17 £ | 2015/16 £ |
|---|------------------|------------------|
| Fixed Assets | | |
| Tangible Fixed Assets | 378,314 | 387,093 |
| Investments | 7,725,669 | 6,597,313 |
| | 8,103,983 | 6,984,406 |
| Current Assets | | |
| Debtors | 43,271 | 26,119 |
| Money Market & Deposit Accounts | 424,105 | 324,665 |
| Cash at Bank & in Hand | 22,787 | 16,913 |
| | 490,163 | 367,697 |
| Current Liabilities | | |
| Creditors: Amounts Falling Due within One Year | (237,698) | (143,996) |
| Net Current Assets | 252,465 | 223,701 |
| Total Assets less Current Liabilities | 8,356,448 | 7,208,107 |
| Creditors: Amounts Falling Due after More than One Year | (48,217) | – |
| Net Assets | 8,308,231 | 7,208,107 |
| Funds | | |
| Unrestricted | 7,702,652 | 6,617,831 |
| Restricted | 605,579 | 590,276 |
| | 8,308,231 | 7,208,107 |

LEGAL AND ADMINISTRATIVE INFORMATION



The Universities Federation for Animal Welfare

(Company limited by guarantee No 579991
Registered in England Charity No 207996)

Vice-Presidents:

Professor P H Holmes OBE BVMS PhD FRCVS FRSE

J H Pratt BVM&S DVSM FRCVS

G D Sales BSc PhD AKC MRSB DipTCDHE

Professor R S Anderson BVMS PhD MRCVS

Professor P M Biggs CBE DSc DVM FRCPath FRFB FRS FRCVS

B Howard BVMS PhD FRCVS

L A Brown MBE BVSc BA PhD FRFB MBA FRCVS

Council:

(who are the Directors of the Limited Company)

Chairman:

Professor R M Bennett BSc MSc PhD ∞λφ (to 19.10.16)

Professor A Nolan OBE MVB DipECVA DipECVPT DVA

MRCVS ∞φλ (from 19.10.16)

Vice-Chairman:

Professor A Nolan OBE MVB DipECVA DipECVPT DVA

MRCVS ∞φλ (to 19.10.16)

A G Simmons BVMS MSc MRCVS λ (from 19.10.16)

Honorary Treasurer: C L McCann BSc ACA φλ

Members:

Professor R M Bennett BSc MSc PhD ∞λφ (from 19.10.16)

J Bradshaw BA PhD φ

B North MBA PhD MSc

A Olsson (from 19.10.16)

D Pritchard BSc BVetMed MPH MRCVS ∞

M Radford OBE LLB

C Reid ∞

D R Sargan MA PhD φ∞

A Wilson BVMS DVSM MRCVS (retired 07.01.17)

φ Member of the Grant Panel

λ Member of the Finance Panel

∞ Member of the Fundraising Panel

Staff

Chief Executive/Scientific Director:

Robert C Hubrecht OBE BSc PhD FRFB

Senior Scientific Programme Manager:

Huw D R Gollledge BSc PhD

Scientific Officer:

Elizabeth Carter BSc MSc

Development Officer:

Stephen M Wickens BSc PhD

Editorial Assistant:

Steven Weddell BSc BVSc MRCVS HND

Fundraising & Communications Manager:

Tracey Woods MCIPR

Charity Secretary:

Jane Moorman

Office staff:

Samantha Griffin

Wendy L Goodwin

Caitlin Gillespie (to 27.05.16)

Principal Office:

The Old School, Brewhouse Hill,
Wheathampstead, Hertfordshire AL4 8AN

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Fax: + 44(0)1582 831414

Website: www.ufaw.org.uk

E-mail: ufaw@ufaw.org.uk

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

Bankers:

HSBC Bank plc, 31 Chequer Street, St Albans, Herts, AL1 4YN

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

Santander UK plc, Bridle Road, Bootle L30 4GB

Solicitors

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

Investment Advisers:

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

If you no longer wish to receive information about the charity's activities or support, then please contact the UFAW office. (Members should be aware that notification of future Annual General Meetings is provided in the Annual Report).

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