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DICK VET NEWS

ISSUE 32



THE UNIVERSITY of EDINBURGH
The Royal (Dick) School
of Veterinary Studies

WELCOME

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We are incredibly proud as a School that we have adapted to a new environment and also contributed significantly to the fight against this dreadful disease.



Professor David Argyle
Head of School

At the start of 2020, who could have predicted the massive upheaval and changes that we have all experienced because of a major worldwide pandemic. It has changed the way we work and live, and it has pushed at our resilience. However, as we move to 2021, I would like to reflect on 2020 and the School's achievements, and look forward with optimism to a bright 2021 and beyond.

In late February and early March, it became clear that the world was succumbing to a rapidly advancing viral pandemic and the School would have to respond accordingly. With the health and safety of all staff and students as our major priority, the School set up a Covid-19 task force to deal with the potential impact of the pandemic on teaching, student support, research, clinical care and staff wellbeing. We brought together key people from across the campus to help co-ordinate the School's response, including moving teaching and assessment online, repatriation of staff and students from across the globe, moving clinics to emergency only, and setting up the infrastructure for home working. The group has continued to meet weekly throughout the crisis to discuss matters arising and outstanding issues, and has been instrumental in ensuring the smooth running of the School during 2020. You can see the task force membership on page 3, and to them I would like to offer my personal thanks for the enormous support they have given me and the School during this period.

The presence of the virus in our lives has had wide-ranging effects on how we work. We have a fantastic community here, and every person has worked hard to ensure we can continue to deliver the quality that we are known for, in extraordinary circumstances. A large proportion of our staff have been working from home since March, and some will continue to do so until it is safe and practical to return. We

have all become far more tech-literate than we were before, and the adage 'necessity breeds invention' has never been proved truer.

The innovation from everyone involved in teaching has been incredible. Everyone has worked so hard to ensure that our students have access to the high-quality education that we are internationally respected for. Teaching and support staff, our Digital Education Unit and student support teams came together to ensure our students have an immersive student experience despite the challenges. We have also worked closely with our accrediting bodies to ensure we meet all of the standards required of our programmes. This has involved massive amounts of work and I am hugely grateful for the incredible dedication of everyone involved. You can read more about our teaching on page 8.

Running the clinics and supporting our patients has also been hugely challenging this year with all of the imposed restrictions. However, all of our clinical and support staff have done an incredible job of keeping the show moving. Despite the challenges, our clinics have been amazing and we have even been able to open new services in Ophthalmology and Dentistry. You can learn more about the continued operation of our clinical facilities on page 9.

Despite many moving to at home working, essential Covid-19 research continued in the Roslin Institute and our research teams continued to work at home writing papers and grant applications. We are incredibly proud as a School that we have adapted to a new environment and also contributed significantly to the fight against this dreadful disease. You can read more about our research response to the Covid-19 pandemic on page 6.

Our teaching, research and clinical activities are all underpinned by an amazing operations team. These dedicated colleagues have helped us to adapt to a changing landscape in terms of our workspace, our IT,

Covid-19 Task Force

our HR, our finance and our physical and emotional health. I am hugely grateful to all of them.

As we started to emerge from lockdown conditions at the start of Semester 1, and to mirror wider University action, the School developed a series of further workstreams to build a programme of adaptation and renewal for a sustainable future. These focus on governance, estate, finance, teaching, clinical activity, research and student recruitment, are essential for us to build a strong future and have led to the new strategic plan which will be officially launched at the beginning of 2021.

Despite this being a challenging year, we have every reason to be optimistic for 2021. The amazing way everyone has adapted and come together to support each other and the Dick Vet community (see page 11) augers well for the future of the School. Once again, we have excelled in international and national league tables for research and teaching (see page 19) and we were awarded the School of the Year at the WVA Animal Welfare Awards (page 20). These are all reflections of the strength of community and commitment from staff and students alike. We have also learned a lot from the way we have had to adapt our teaching, which is directly feeding into our evolving curriculum review. Everyone has had an opportunity to feed into the strategic plan, which will help us chart an exciting course for the next five years.

Finally, I must thank the wonderful staff and students of the Dick Vet for their amazing work and collegiality over the past year. I would also like to thank alumni and friends who have continued to support us during these unusual times. I look forward to continuing to work with you all in the coming year. The School will continue to work across all of our teams to optimise the staff, student and client experience, and ensure that we continue to deliver on our three pillars of excellence: teaching, research and clinical practice.



David Argyle



Lindsay Dalziel



Paul Digard



Catherine Eastwood



Colin Farquharson



Mike Grieve



John Mackenzie



Pauline McLeod



Richard Mellanby



Sue Murphy



James Nixon



Susan Rhind



Darren Shaw



Hannah Simpson



Mark Stevens



Jeni Temperley



Marianne Watson



Darren Watt



Val White



Bruce Whitelaw

2020

IN REVIEW

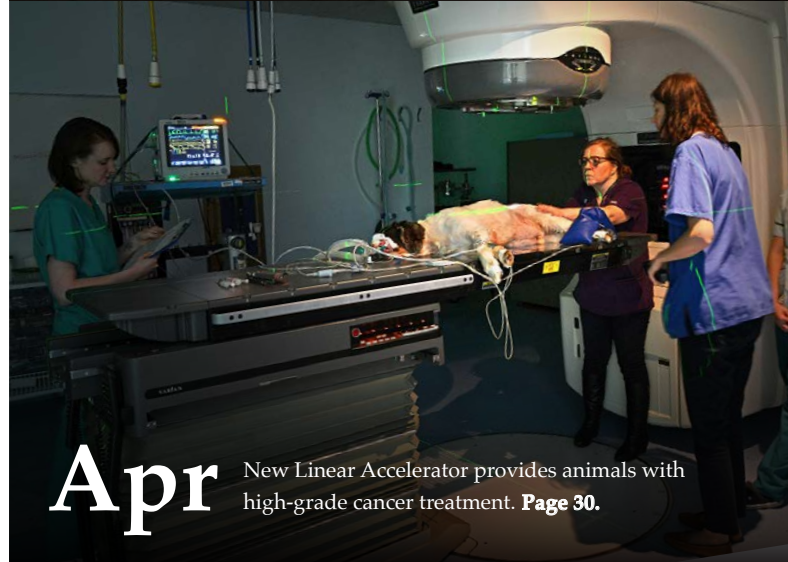
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The year 2020 has presented many challenges and opportunities, across the globe and in all walks of life. The amazing community at the Dick Vet has risen to meet these in astonishing fashion: our students have continued to receive high-quality education and even celebrate graduation virtually; our clinics have continued to improve the welfare of animals and maintain the food supply chain; and our researchers have conducted breakthrough research into Covid-19 and other key areas.

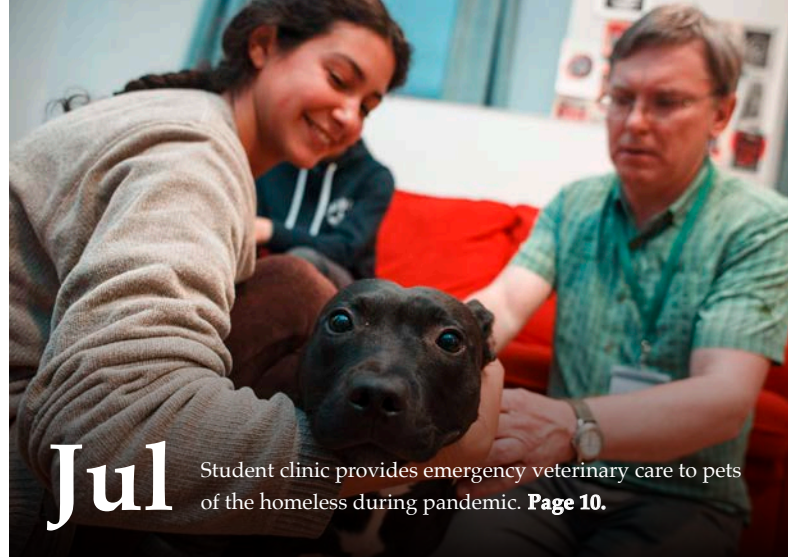
This snapshot cannot encompass all that the Dick Vet community has achieved this year, but provides a cross-section of the myriad activities underway.



Jan The Dick Vet and Mission Rabies work together on fight against disease. **Page 28.**



Apr New Linear Accelerator provides animals with high-grade cancer treatment. **Page 30.**



Jul Student clinic provides emergency veterinary care to pets of the homeless during pandemic. **Page 10.**



Oct Dick Vet named Vet School of the Year at 2020 Global Animal Welfare Awards. **Page 20.**



Feb Covid-19 research supports public health and vaccine search. **Page 6.**



Mar New Large Animal Research and Imaging Facility to support research into livestock and disease. **Page 18.**



May Fertility of mammals can be restored using donor genetic material passed through breeding. **Page 16.**



Jun The Dick Vet tops national and international league tables. **Page 19.**



Aug Veterinary staff provide emergency care and keep food supply chain secure during pandemic. **Page 9.**



Sep Solar farm will allow School to generate green energy. **Page 21.**



Nov Centre for Tropical Livestock Genetics and Health named in the 'Decade of Health' campaign. **Page 22.**



Dec Student-led project plant more than 400 trees on Easter Bush Campus **Page 28.**

COVID-19 RESPONSE

Coronavirus Research at the Roslin Institute

Scientists from the Roslin Institute have contributed to aid understanding of the coronavirus. Many worked throughout lockdown, with labs and other resources repurposed to enable research into the novel coronavirus, SARS-CoV-2 and the Covid-19 disease.

Researchers have helped to examine how genetics may affect the virus' impact on the body, methods to track the disease and its transmission, and learn how to manage the disease now and in future.

VIRUS AND PATIENT GENETICS

A team led by Roslin scientist Dr Mazdak Salavati has developed a pioneering technique using machine learning algorithms to identify weak spots in the coronavirus genome, which could be targeted to disrupt the virus. Their findings may help to develop vaccines and drug treatments.

Dr Kenneth Baillie led a further team to

undertake a £5 million project to analyse samples from 1,300 UK Covid-19 patients, to better understand the virus and its impact on the human body. They are using data to discover who in the population is at higher risk of severe illness, the best way to diagnose the disease, and what happens in patients' immune systems when they contract Covid-19.

They are also monitoring the effects of drugs used in patients, calculating how long people are infectious, and investigating whether people are infected with other viruses – such as flu – at the same time.

Another large-scale study involving Dr Baillie analysed data from some 17,000 Covid-19 patients, showing that being obese reduces the chances of survival in severe cases of the disease.

A better understanding of how certain genes may alter the impact of the coronavirus on the body may be uncovered by a project known as Coronagenes. This seeks to analyse the results of home DNA tests from volunteers, to identify key genes involved in the body's response to the infection.

A separate UK-wide study involving Roslin scientists is analysing the genomes of Covid-19 patients who have been placed on ventilators, to identify genes that cause a predisposition to the disease. The study hopes to explain why some people get no symptoms, while others become critically ill, or die.



To help manage disease outbreaks, experts from the Roslin Institute worked alongside government officials to advise on the worst-case winter scenario for Covid-19.

TRACKING DISEASE SPREAD

To track the disease and its transmission, Dr Sam Lycett is leading a Scottish Government-funded project tracking the national rise and fall in Covid-19 cases. A comparison of the genetic makeup of the virus in different areas of the country, in combination with models of the incidence, distribution and spread of the virus, will be used to understand transmission patterns and help guide social distancing measures.

To help manage disease outbreaks, experts from the Roslin Institute worked alongside government officials to advise on the worst-case winter scenario for Covid-19.

Further studies involving Roslin researchers and the Scottish Environmental Protection Agency (SEPA) are testing for the presence of genetic material from coronavirus in wastewater, which can be used to detect disease occurrence in areas before symptoms appear in the population.

MANAGING COVID-19

To make predictions regarding the impact of Covid-19 on healthcare requirements in Edinburgh and South-East Scotland, Roslin scientist Professor Andrea Wilson is conducting research to help healthcare units and hospitals find the best way to allocate medical resources in the long term.

Face masks remain one of the most effective tools to reduce risk of coronavirus spread, according to research by the University of Edinburgh, including the Roslin Institute. It found that wearing masks can block 99.9% of Covid-linked droplets, especially when speaking and coughing.

Dr Eleanor Gaunt from the Roslin Institute shed light on the origins of Covid-19 by studying its genome, gaining genetic insights that could help scientists to develop safer, more effective vaccines.

In recent months, ongoing or upcoming trials have provided more possibilities for treating Covid-19. In an examination of the use of dexamethasone treatment, researchers including Dr Kenneth Baillie found that the inexpensive, widely available medicine can improve survival in serious Covid-19 cases.

Dr Christine Tait-Burkard joined a €77.7 million initiative analysing more than 500,000 potential drug candidates for treating Covid-19. The Edinburgh team aimed to identify a drug to block human proteins needed by SARS-CoV2 to survive in the body.

Coronavirus research at Roslin is set to continue, adding to the national and international efforts to manage the virus and its impact.

For the latest updates, please visit our research news pages:

www.ed.ac.uk/roslin/news-events/latest-news



Covid-19 and Teaching

The Covid-19 pandemic has required all educators to look at new ways to continue the instruction of their students.

As we entered the UK-wide lockdown in March, the Dick Vet was faced with not only the immediate task of completing 2019/2020 year group training but also commencing advanced plans for a new semester and new arrivals in September.

Our veterinary undergraduate teaching teams faced particular challenges as practical training is a key part of the Bachelor of Veterinary Medicine and Surgery (BVM&S) programme. This is not only important for the development of clinical skills but essential to meet the requirements for accreditation.

To meet the challenge, a system of hybrid learning saw all possible lectures and tutorials move online. The School's established expertise in and technology for online postgraduate education meant that we were in an excellent position to quickly ensure that the online experience would facilitate effective learning outcomes. Where students were required to be on campus, our dedicated staff implemented every possible measure to keep them safe.

From masks, one-way systems and social distancing to a complete overhaul in working patterns, the School's approach enabled essential on-campus teaching to resume swiftly. Students have responded with extraordinary understanding and patience during this difficult period, and their cooperation and adaptability has been a significant factor in ensuring campus safety.

While at the time of writing it is uncertain when it will be possible for these measures to be relaxed, the School is committed to providing a safe and effective learning environment for all of our students.



Dick Vets keep working through a global pandemic

Throughout the Covid-19 pandemic, key workers across the economy have continued to work; running the NHS to directly fight the disease and maintaining essential shops and services. Closer to home, the School's veterinary surgeons, nurses and support staff have also continued to work, providing essential care and ensuring animal welfare.

The Dick Vet is home to three hospitals and general practices, and we have some of the most advanced facilities and specialised staff in Scotland. Our clinics treat both first-opinion customers and those referred by their vets, due to the complexity of diagnosis or treatment. The responsibility to our community is significant and we have continued to provide these critical services, while always prioritising the safety of our staff.

To accomplish this, teams and 'bubbles' were formed in all of our services and new working patterns were established. These bubbles stayed physically separate, to ensure that any potential infections would be limited in their spread and that no matter what, the Hospitals would continue to function and be able to provide all of our services. Following RCVS guidelines and our own risk assessments, we established and maintained careful procedures to allow safe working to continue.

Contingency planning for Brexit and concerns over availability of certain supplies had meant that the hospital had stockpiled certain crucial items, such as particular painkillers and other essentials. Other contingency plans that had been created for situations such as severe weather were also able to be adapted, allowing us to move quickly to establish new working protocols for Covid-19.

The Farm Animal Hospital and Practice have been at the forefront during the pandemic. During the initial lockdown in spring it was their busiest time of the year, when lambing and calving must continue. Essential treatment of livestock had to continue to maintain the food supply chain, and this requires vets to ensure the wellbeing of animals and to



support the farming community. In some ways an essential service for farm vets is not dissimilar to the usual service, as their work is almost always critical and time dependent.

The leaders of our clinical services, Dr Sue Murphy, Director of Clinical Services, Dr Patrick Pollock, Equine Hospital Director and Professor Alastair Macrae, Director of Farm Animal Services, worked to keep their teams informed and motivated. They are providing regular updates to staff and set in place measures to keep each workplace safe and Covid-19 secure.

Throughout the strictest periods of lockdown the Hospital for Small Animals and Equine Hospital were only able to see emergency cases, but as the disease and its methods of spreading became better understood, they have been able to see more cases and by the end of 2020 all services within the Hospitals will have resumed, with extra measures in place as needed.

The School has also been conscious of the shortages of PPE that the NHS and human medicine have faced and early in the year we donated supplies including surgical masks and scrubs to medical facilities facing the most severe shortages. The Hospital for Small Animals loaned four ventilator machines – designed for human use and

The responsibility to our community is significant and we have continued to provide these critical services, while always prioritising the safety of our staff.

kept by us under hospital conditions – to Lothian Health Board, to treat patients with severe viral symptoms.

Our clinical services have also been aware of the impact that

the pandemic has had on our colleagues in private practice and we have offered a number of measures to provide support. We made our telemedicine service free for all referring vets, enabling them to seek consultation on complex cases without risking their own health or that of their clients, so that cases would only have to travel when essential. We have continued this free service through the year and look to maintain it as required.

As we enter 2021, the promise of a vaccine in the near future offers hope that things may return to some degree of normal soon, but until that happens, the School's Clinical Services will continue to prioritise animal welfare and the safety of our staff and students.



All4Paws provides essential care for the pets of the homeless and vulnerable

All4Paws is a free, student-run clinic that offers veterinary care to the pets of people who are homeless or vulnerably housed in and around Edinburgh. Clinics are run across Edinburgh under the supervision of qualified vets, with students providing basic treatments free-of-charge including vaccinations, flea, tick and worm medications, as well as information on microchips and free spaying and neutering.

During the Covid-19 pandemic it was no longer possible to run the clinics in the usual way, but students were keenly aware that there were still emergencies and complicated welfare issues that would arise. To enable important issues to be dealt with, students changed the way they worked, moving to offer a phone line and e-mail service to triage calls and if necessary arrange a visit in a location where it was

safe to do so and social distancing was possible, such as local parks.

All4Paws has continued to offer support to those in need as the pandemic has continued and over winter the students will run their annual Winter Appeal for the homeless. In past years the students have appealed for donations of essential items from staff at the Easter Bush Campus and distributed bags of set items to the homeless containing things like warm clothing, hot water bottles, notebooks and pens, toiletries and food supplies.

This year it will not be possible to hand out pre-packed bags with set items at Christmas, but the students are still appealing for donations which will be distributed in the new year. With this appeal All4Paws and the student body continue to show their concern not only for the welfare of all animals, but also for their humans.

Easter Bush community pandemic response

The Covid-19 pandemic has meant new ways of working for many at the Dick Vet, with a large number of staff working from home and everyone adapting to new rules and procedures to keep them safe. Despite this, our community has pulled together and demonstrated incredible resilience, commitment and positivity.



In May, more than 70 members of staff volunteered following a call to help support a research study, called Genetics of Mortality in Critical Care. This project had the aim of analysing DNA samples taken from every Covid-19 patient in the UK whose treatment involved being put on a ventilator. The hope was to find out why the disease affects some people more seriously than others, and to gain insights into potential treatments. A strong response to a call for volunteers made it possible to increase the scope of the study from one-third of Intensive Care Units in the UK to nearly all of them, in only three weeks. Volunteers have been involved in a variety of administrative tasks, including contacting hospitals, setting up sample collection, building sample transport boxes, posting them to hospitals, and maintaining paperwork.

Staff and students have sought other ways to help with the virus effort. Tenants within the Roslin Innovation Centre teamed up to make hand sanitiser, and Roslin post-doctoral researcher Amanda Warr worked to 3D print parts for face shields, having already helped a community initiative in Penicuik to produce hundreds of shields for hospitals and care homes. A group of around 25 staff and students volunteered their time for local food charities Cyrenians and the Trussell Trust, and student organisation All4Paws has continued to provide essential health care for the pets of the homeless.

Other staff members worked to support the mental and physical health of those stuck at home, providing free yoga workouts, or online social meetups. Many staff also took part in the public engagement activities being organised by the Easter Bush Science Outreach Centre (see page 12).

The whole campus has pulled together in the most difficult of circumstances and we are immensely proud of the way we have looked after each other and the wider community.



CTLGH launches Vision 2030

The Centre for Tropical Livestock Genetics and Health was created in 2015 to support partnership programmes which aim to improve livestock-based livelihoods in the tropics. CTLGH brings together organisations with similar goals and catalyses investments that enable scientists, investors, policy-makers and user communities to co-produce, and apply the knowledge and tools necessary to advance a wide range of projects.

Building on their achievements from their first five years, CTLGH has now launched 'Vision 2030'; key strategic objectives and future focus for the next ten years. The Centre will focus on three central objectives: leading and supporting research to develop innovations which support genetic improvement in tropical production systems; mobilising its partnerships and developing collaborations with farmer-facing organisations capable of delivering and sustaining the innovations on the ground; and supporting capacity building and knowledge exchange activities to deliver research and technical training programmes in low- and middle-income countries.

Find out about the work of CLTGH and Vision 2030 here: www.ctlgh.org/ctlgh-embarks-on-an-exciting-future-with-the-launch-of-its-vision-2030

EASTER BUSH SCIENCE OUTREACH CENTRE

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An unusual year for Public Engagement

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WONDER WITH WORMS...



The Easter Bush Science Outreach Centre (EBSOC) started its year welcoming visitors to its lab space in the Charnock Bradley building, and had a full programme of workshops and outreach activities planned for the year ahead. The first UK lockdown in March meant that all in-person activities had to be immediately cancelled and the Public Engagement Team made the move to working from home.

With schools closed and families learning at home, the EBSOC team looked to develop activities that could be accessed online. Wonder with Worms is a family-friendly version of an existing schools toolkit Opening a Can of Worms. The toolkit supports learners to use the scientific method to investigate real scientific questions about worm behaviour, and includes links to animal behaviour research at Easter Bush Campus and information about the use of animals in research.

Wonder with Worms has been downloaded for use with an estimated 5,000 young people, and has been joined by two more investigations linked to research at Easter Bush - Big Balloon Blow Up and Marvellous Mixtures. All three activities were featured in the 2020 Midlothian and Royal Society of Biology online science festivals, and it is a tribute to the hard work

Wonder with Worms has been downloaded for use with an estimated 5,000 young people, and has been joined by two more investigations linked to research at Easter Bush - Big Balloon Blow Up and Marvellous Mixtures

of school pupils an insight into biological, medical and veterinary sciences, would still go ahead. The programme was adapted to run online and additional places were made available. This enabled 60 pupils from across Scotland to join researchers and clinicians from the Vet School and the wider College of Medicine and Veterinary Medicine for a week-long programme of interactive sessions. It was even possible to include a hands-on suturing skills lesson, thanks to an instructional video on hand

of the EBSOC team that the worm behaviour toolkit won an Openness Award from Understanding Animal Research.

Against a backdrop of cancelled events, EBSOC was determined that the annual Science Insights work experience programme (see page 26), which gives Scottish high

ties created by Dick Vet staff and some basic equipment sent out to pupils.

EBSOC also played a key role in the Midlothian Science Festival, which ran online in October and featured virtual tours of Easter Bush Campus including the Equine and Small Animal hospitals, and recordings of our public lectures from 2018 and 2019. EBSOC coordinated the Festival's schools programme for the third year, bringing 147 live online sessions from 14 providers to over 3,675 pupils in 26 Midlothian schools.

Despite the lockdown, work continued with staff and students from the Easter Bush Campus, building engagement skills via online training courses and developing new online engagement initiatives. An ongoing Ask an Animal Scientist Twitter campaign has run with support from researchers and Meet a Roslin Scientist, a new online engagement programme for schools has proven a success.

While much is still unknown about 2021, it is hoped that it may be possible at some point to restart in-person events, if and when guidelines allow and until then, more online engagement is planned. The contribution to public engagement from staff and students has allowed EBSOC to stay connected with the outside world and despite the challenges, excel in its public engagement mission.

RESEARCH

In addition to Covid-19 studies, the Roslin Institute has continued to break new ground in its animal research



Gene maps shed light on key livestock traits

Scientists have developed detailed maps of genes in cattle, sheep, and pigs, in studies that will aid understanding of key inherited traits linked to animal health, welfare, nutrition and productivity. The results include insight into a range of genes and their influence on tissues and cell types, underscoring the genetic basis of dozens of key traits such as fertility, growth and milk production.

Outcomes of the research will improve selective breeding in the livestock



production industry and enable better understanding of how specific regions of the genetic makeup of these animals affect their physical and physiological characteristics. The study of the pig genetic code could help to enhance biomedical research in which pigs are used as models to study human health.

The studies were conducted by Roslin scientists in collaboration with colleagues from around the world.

Read the full story: www.ed.ac.uk/roslin/news-events/latest-news/gene-map-to-aid-studies-of-key-traits-in-sheep

Breeding for disease resilience is cost effective

Emerging technologies and new statistical methods offer novel approaches to breed livestock that are resilient to disease, with potential significant cost savings to industry, a study has shown.

Methods to quantify how animals respond to infection, and to what extent this is controlled by genes which give rise to these traits, pave the way towards selective breeding for optimum disease resilience.

Using data from a previous study of infection in piglets, the team developed mathematical models to estimate the

economic value of disease resilience, accounting for tolerance and resistance to disease.

The value of selective breeding based on resistance and tolerance during infectious conditions was more than three times that of breeding based on production traits in disease-free conditions, their calculations show.

The study was led by scientists at the Roslin Institute and Pig Improvement Company (PIC).

Read the full story: www.ed.ac.uk/roslin/news-events/latest-news/breeding-for-disease-resilience-is-cost-effective



Photo Credit: Fabian Betto/Unsplash

Brain study uncovers key to seasonal timing

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Scientists have uncovered key details of processes in the brain that enable animals to live seasonal lifestyles.

A biological switch in the brain, guided by the duration of daylight, triggers genetic and hormonal changes causing animals to adjust their physiology

and behaviour with the seasons, according to research by a team involving Roslin scientists.

These processes regulate seasonal changes critical for survival, such as the timing of breeding cycles, the growth of a warm coat in winter, or the rate at which the body uses energy.

Seasonal genetic changes are triggered in response to

the changes in duration of daylight from summer to winter. These involve a key gene, which is part of the body's 24-hour internal clock, whose purpose in yearly timing was not understood until now.

The findings, from a study of genes in brain tissue of sheep, may explain the evolution of seasonal timing in animals including mammals, birds, reptiles, and possibly humans.

Read the full story: www.ed.ac.uk/roslin/news-events/latest-news/brain-study-uncovers-key-to-seasonal-timing

Livestock surrogates successfully made fertile



Male pigs, goats and mice can produce healthy sperm containing only genetic material from donor species, a study involving the Roslin Institute has shown.

Animals were made sterile through gene-editing techniques, then became fertile again after receiving stem cells into their testes from donor animals that were genetically different from them.

The animals were then able to produce sperm containing only genetic material from the donors.

The novel surrogacy approach could speed the spread of desirable characteristics in livestock and improve food production for a growing global population.

It could also enable breeders in remote regions better access to genetic material of elite animals from other parts of the world, and allow more precision breeding.

Furthermore, it could be used as a tool for biomedical research and preservation of endangered species.

Read the full story:

www.ed.ac.uk/roslin/news-events/latest-news/livestock-surrogates-successfully-made-fertile

Adaptability of bird flu poses threat to poultry

Commercial poultry should be protected from the risk of contracting harmful bird flu from migrating flocks, a study led by the Roslin Institute suggests.

New insights from a study of the 2016/17 bird flu outbreak show how highly pathogenic bird flu viruses – which are likely to cause deadly disease in chickens – can be transmitted from wild migrating bird populations to domestic flocks and back again.

These viruses can readily exchange genetic material with other low



pathogenic viruses – which are less harmful – during migration, raising the likelihood of serious outbreaks in domestic poultry and wild birds.

Migrating birds harbouring weaker viruses are more likely to survive their journey and potentially pass disease to domestic birds.

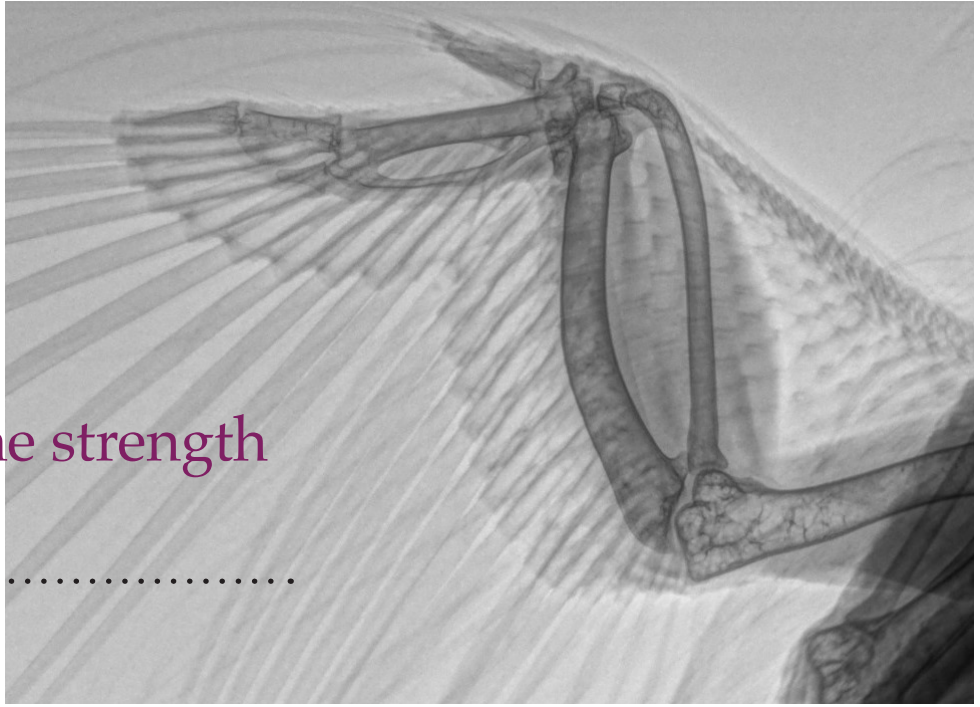
Scientists carried out genetic analyses

on virus samples collected during the outbreak, and used computational techniques to estimate when and where the virus exchanged genetic material with other viruses in wild or domestic birds.

Read the full story:

www.ed.ac.uk/roslin/news-events/latest-news/adaptability-of-bird-flu-poses-threat-to-poultry

Gene linked to bone strength in egg-laying hens



New insights into factors that affect bone strength could improve the health of chickens that lay eggs, especially when they are at risk of osteoporosis.

Scientists have discovered a gene linked to bone quality, in a finding that could inform selective breeding.

The discovery confirms the importance of a key biological molecule for healthy

bones and may be relevant for other species, including humans.

Researchers looked in detail at a region of chicken DNA, which was known from previous studies to be linked to risk of bone fractures. They studied generations of hens, looking at the level of activity in genes and the strength of the hens' bones.

Hens with a particular version of the gene had bones with raised mineral content and cross-linking of collagen protein,

suggesting that these factors may be important for the differences in bone quality.

The study involved Roslin scientists and was carried out in collaboration with colleagues in Sweden, Spain, Germany, Czech Republic and China.

Read the full story: www.ed.ac.uk/roslin/news-events/latest-news/gene-linked-to-bone-strength-in-egg-laying-hens

Low-cost method helps tackle sea lice in salmon

Salmon could be bred to be more resistant to a common pest by using genetic data in a cost-efficient manner, scientists say.

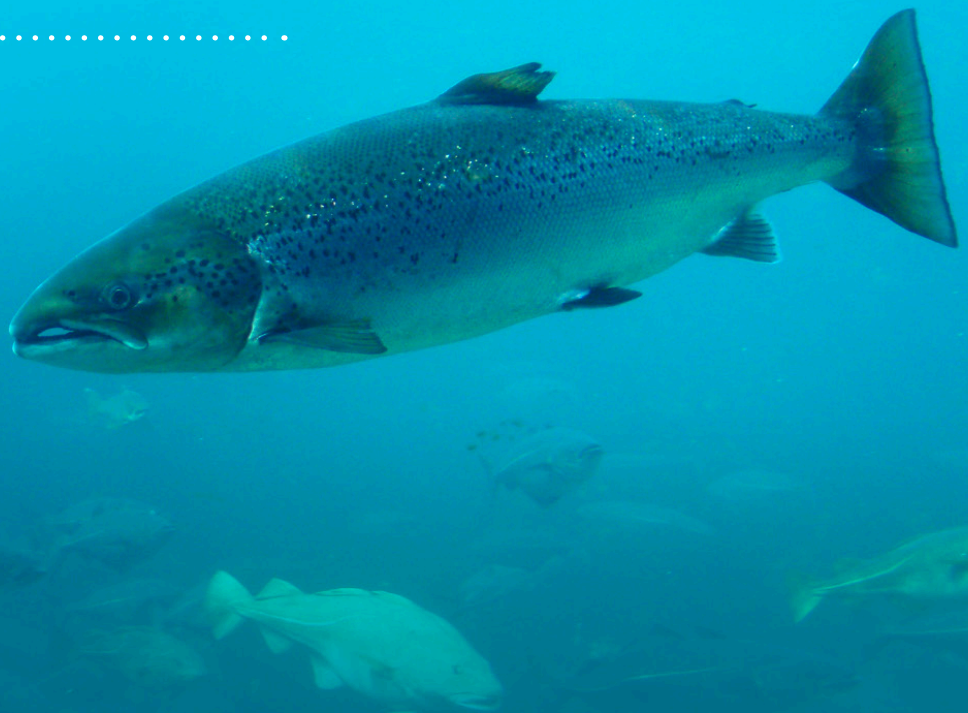
The technique could be used in selective breeding to help mitigate the impact of sea lice, which is the most costly disease for the salmon farming industry.

The approach enables a low-cost assessment of the genetic makeup of a salmon population with regard to sea lice resistance, which can help choose more resistant parents for breeding the next generation.

It also has potential to be used for improving other economically important traits, and could be applied to other farmed species around the world, including shrimp and tilapia.

Read the full story:

www.ed.ac.uk/roslin/news-events/latest-news/low-cost-method-sea-lice-salmon



FEATURE

New Facility to Boost Research into Animal and Human Health

“The LARIF illustrates the positive effects of successful collaboration between academia, industry and the Government in spreading knowledge and expertise while developing the technologies of the future”

- Professor John Loughhead

The new Large Animal Imaging and Research Facility (LARIF) at the Easter Bush Campus will enable unprecedented insights into livestock and human health.

Opened in March 2020 by Professor John Loughhead, Chief Scientific Adviser to the UK Department of Business, Energy and Industrial Strategy (BEIS), the LARIF will enhance food security and the health and welfare of farmed animals, through research aimed at producing livestock that are genetically more resistant to disease and by the development of improved vaccines. Research will additionally safeguard human health by helping to tackle food-borne infections and developing strategies against antimicrobial resistance.

This facility, whose work is increasingly relevant to a post Covid-19 world, is supported by a £25 million investment from the University of Edinburgh and the Centre for Innovation Excellence in Livestock (CIEL), which includes £10.6 million of funding from Innovate UK, the UK's Innovation Agency.

ADVANCED FACILITIES

The LARIF is a unique research opportunity, with an unparalleled combination of imaging, surgical, gene editing and infection containment facilities. It offers exceptional specialist capability for in-depth studies into the health and wellbeing of all major farmed livestock.

Also housed at the LARIF is the Wellcome Trust-funded Critical Care Laboratory for Large Animals, which supports the study of large animal biology with all the resources of a human hospital. Highly skilled specialists in veterinary anaesthesia will provide round-the-clock care for animals involved in studies.

Professor David Argyle said “The LARIF is a unique and world-leading facility that significantly enhances our ability to study human and animal health. Taking this multidisciplinary approach is a key focus for the University and can lead to significant



advances in medicine, veterinary medicine and agricultural science.”

BROAD EXPERTISE

The advanced medical imaging equipment on site includes CT, MRI, fluoroscopy and ultrasound, which enables detailed understanding of anatomy and body composition in livestock, as well as monitoring progression of disease processes in different organs and their response to treatment. Studies at the LARIF will also investigate human conditions. Large animal species are valuable biomedical models for studying human diseases and developing new medical technologies.

The Easter Bush Campus is the largest concentration of animal science-related expertise in Europe, making it the ideal home for LARIF and its work. The Easter Bush Campus contributes to the Scottish Governments plans for world-leading



scientific research to happen within Scottish Universities, to drive the economy of tomorrow and to tackle the larger problems, like food security and environmental change.

Professor John Loughhead said, "Agricultural technologies are a sometimes unrecognised but important component in supporting the agriculture industry to cut its emissions and develop sustainable farming practices – helping to meet the Government's ambitions to reach net zero emissions by 2050. The LARIF illustrates the positive effects of successful collaboration between academia, industry and the Government in spreading knowledge and expertise while developing the technologies of the future."

Visit the LARIF website:
www.edin.ac/larif



Continued League Table Success for the Dick Vet

The Dick Vet prides itself on the quality of its teaching, with nearly 200 years of experience providing world-class education. This dedication has often been reflected with success in the various league tables that measure veterinary schools and colleges, and in 2020 the School has excelled in national and international rankings.

The Times and Sunday Times Good University Guide named the Royal (Dick) School of Veterinary Studies as the top UK veterinary school for the sixth year in a row in its 2020 rankings, marking an incredible run as the highest placed school. Branded the definitive British university rankings, the guide is based on nine key measures relevant to student experience.

The School also topped the Guardian University Guide 2021 league table for veterinary science for the fourth year running, with its high scores in teaching and course satisfaction securing its first place. The Guardian Guide differentiates itself from other university guides by aiming specifically at students who are trying to choose a course. It ranks universities and programmes on the areas that are most important to young people, such as how much they will benefit from

teaching, the opinion of current students and their chances in the job market after graduation. Dick Vet graduates are known for their Day One skillset and breadth of knowledge and so it was no surprise that we would rank highly in measures such as employability.

Success has also come in international rankings, with the School placed second in the world in the ShanghaiRanking's Global Ranking of Academic Subjects 2020 - Veterinary Sciences. This marked a rise of two places from 2019 and saw the Dick Vet as the highest placed UK school. In the QS World University Rankings, the Dick Vet also confirmed itself as one of the leading international veterinary schools, placing sixth in the world. The ShanghaiRanking and QS rankings are the most influential and widely observed global university rankings.

The School has also excelled in the yearly National Student Survey (NSS) results in 2020, with an overall satisfaction of 95% for our undergraduate veterinary programme. The NSS is an annual survey of around half a million students across the UK. It gives a voice to students to help shape the future of their course and is also regarded as an important tool for students deciding where to study.



Dick Vet Wins Vet School of the Year Award

The School has won the first ever Veterinary School of the Year Award at the WVA Animal Welfare Awards 2020, in recognition of its continued commitment to animal welfare in teaching and training activities, and our global outreach projects through the Jeanne Marchig International Centre for Animal Welfare Education (JMICAWE).

The Global Animal Welfare Awards are run in conjunction with the World Veterinary Association (WVA) and Ceva Animal Health. Launched in 2017 to recognise and reward persons and entities who are contributing to the protection and welfare of animals and have provided outstanding and exemplary welfare-related services to animals, animal owners and the public, the awards expanded in 2020 to include a new category for veterinary schools and colleges.

The award ceremony was due to take place during the 36th WVA Congress in Auckland, New Zealand earlier this year, but was delayed due to the Covid-19 pandemic. Instead the awards were streamed live during the WVA's webinar, 'The Impact of the Covid-19 Pandemic on the Veterinary Profession' in October

2020. The award ceremony was followed by a series of short videos highlighting the work of each of the award recipients in their respective fields under a single common goal - improving the welfare of animals.

Commenting on the award, Professor Cathy Dwyer, Professor of Animal Behaviour and Welfare at the Dick Vet and Head of JMICAWE, said: "We're absolutely delighted to have won the Veterinary School of the Year Award, which recognises our hard work in improving our animal welfare teaching and training, including our outreach and research activities."

Professor David Argyle added: "We have embedded animal welfare throughout the curriculum right from the start until when our students graduate and I would like to think that our graduates actually take animal welfare away as a lifelong learning opportunity. We've come a long way in the last 10 years, so I'm incredibly optimistic for the future."

James Russell, President of the British Veterinary Association (BVA), says: "Congratulations to all our colleagues at the Royal (Dick) School of Veterinary Studies. We are delighted that the team has been recognised for its commitment

to animal welfare. There has never been a more important time to recognise the contribution of our veterinary colleagues."

The School's commitment to animal welfare is embodied within JMICAWE, which launched in 2011. Their commitments are to improve the health and welfare of animals through education, training, research and promoting the important role of veterinarians in protecting animal welfare, as well as supporting capacity building in animal welfare within various parts of the world.

Edinburgh has a long history of involvement in animal welfare research and teaching. The Dick Vet was instrumental in setting up the Society for Veterinary Ethology in 1966, which has grown and expanded since to become the International Society for Applied Ethology; the pre-eminent scientific society for the study of animal welfare science.

Edinburgh was also home to the first MSc programme in the world to offer postgraduate education in applied animal behaviour and animal welfare, in 1990. The MSc is celebrating its 30th anniversary this year, and now has a network of alumni working to improve animal welfare all over the world.

Solar farm advances Easter Bush sustainability plans



The Dick Vet has continued its commitment to eliminating its carbon footprint with the creation of a solar farm, which will provide around 15% of the campus power requirements. When fully installed, there will be almost 5,000 ground-mounted photovoltaic (PV) panels, which convert energy from sunlight into electricity, generating around 1.4m kWh of electricity a year. This is roughly the same as that needed to supply 500 typical homes.

The five-hectare farm marks a major investment in green energy from the University of Edinburgh, who have set out a number of commitments to social and civic responsibility in their Zero by 2040 strategy. The University will reduce its carbon emissions per £ million turnover by 50% from a 2007/8 baseline, and will become a net zero carbon university by 2040. Projects like the new solar farm are an important part of meeting that goal.

The first solar panel installation by the University was in 2007 at the Kings Buildings campus, and in recent years its solar installations have generated an average of 265 MWh of electricity annually. The new development will substantially increase that figure to an average annual figure of 4,500 MWh,

which will save more than 1,000 tonnes of carbon emissions each year.

The development at Easter Bush includes a laboratory for solar PV research and is part of wider low carbon electricity generation on site. Together with existing generation capacity, more than 60% of the Easter Bush Campus energy requirement and 30% of its heat will now be generated from low or zero-carbon technologies.

The Campus has embedded sustainability across its activities, from teaching to research. It currently holds a gold award from the University's Department of Social Responsibility and Sustainability for projects that have included reduction of plastic waste, promotion of sustainable business travel and the implementation of centralised stores.

The Roslin Institute also holds a Gold Lab Award by demonstrating compliance with a wide range of sustainable lab practices including efficient use of fume cupboards, management of chemicals and samples, and reducing waste, water and energy consumption.

With new initiatives such as the installation of electric vehicle charging and the promotion of alternate methods of travel to campus, the Dick Vet looks to play its part in a greener future.

Electric vehicle charging points boost campus sustainability



The Royal (Dick) School of Veterinary Studies has continued its commitment to sustainability with the addition of four new electric vehicle (EV) charging points on campus. Charging is available to staff, students, clients and visitors free of charge. As well as encouraging those driving to the campus to switch to electric vehicles, the School aims to replace University vehicles with electric alternatives whenever possible.

The chargers are the first to be available in the local area and are part of the wider University of Edinburgh's commitment to investment in green technology, with the aim of being carbon neutral by 2040.

Read more about the campus EV chargers:

www.ed.ac.uk/vet/news-events/news-and-archive/2019-news/ev-charging



“Working together, we are committed to try to improve tropical livestock efficiency and resilience, in order to help feed a growing population and provide a pathway out of poverty for millions of rural families living in sub-Saharan Africa and beyond.”

- Professor Appolinaire Djikeng

National campaign recognises Centre’s impact on health

The Centre for Tropical Livestock Genetics and Health (CTLGH) has been recognised for its work and is being highlighted in a high-profile campaign, ‘Decade of Health’, funded by the Bill & Melinda Gates Foundation.

CTLGH is a strategic partnership of the Roslin Institute, Scotland’s Rural College and the International Livestock Research Institute, and has research nodes in Edinburgh, Nairobi and Addis Ababa. It consists of dedicated groups and individuals committed to research-driven solutions that support improved livestock-based livelihoods and address the challenges of food security, health and well-being and gender equity for people in the tropics.

The ‘Decade of Health’ campaign shares collaborative, pioneering research that benefits the health of people around the world and showcases the Centre’s work to improve the health, resilience and productivity of tropical livestock.

As part of the campaign, Professor Appolinaire Djikeng, Director of the Centre, is recognised as one of 10 people in the UK who are changing the face of health. Professor Djikeng, a livestock genomics scientist, has spent more than 20 years leading global research and development programmes focusing on agricultural development and human health.

Professor Djikeng said: “I am delighted that the centre has received this recognition for its work in this high-profile campaign and am honoured to work with such dedicated researchers, partners and collaborators. This is a testament to our centre’s unique positioning to link livestock development to human health – a link that has been neglected for far too long.

“Working together, we are committed to try to improve tropical livestock efficiency and resilience, in order to help feed a growing population and provide a pathway out of poverty for millions of rural families living in sub-Saharan Africa and beyond.”

Hospital for Small Animals in excellent health



Ben Blacklock

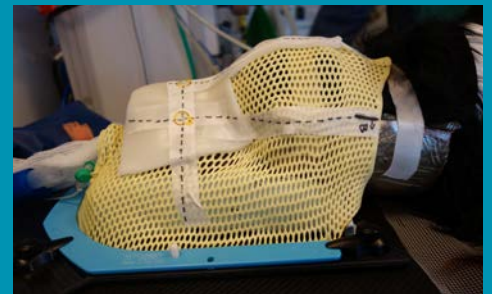
The Dick Vet's clinical services have faced a challenging year in 2020 (See page 9 for a summary of the challenge), but the Hospital has also been undergoing a period of expansion and growth, as we offer new services and welcome new staff.

NEW CLINICS OFFER EXPANDED SERVICE

We continue to expand the Hospital's Services and have recently added our new Ophthalmology Department, run by RCVS and EBVS® Recognised Specialist in Veterinary Ophthalmology, Ben Blacklock. We are also currently launching a new Dentistry and Maxillofacial Surgery Service, which will be run by Ingrid Tundo, who will become the first full-time veterinary dentistry lecturer in a UK University.

The Ophthalmology Service is already providing a key referral service to our colleagues in clinical practice, offering investigation and treatment of all types of eye disease across species, as well as routine health screening via the BVA/KC/ISDS hereditary eye disease scheme.

Ingrid is a residency trained veterinary dentist and completed her training with the only specialist in Europe with a Fellowship in Oral and Maxillofacial Surgery, Peter Southerden. She brings a wealth of experience to the School. The new service will be able to offer advanced oral surgery, including mandibulectomy, maxillectomy, cleft palate repair, jaw fractures repair, and advanced oral cystic lesion treatment. Specialist veterinary nursing will allow



the service to provide exceptional care and follow up for all clients.

The School has also continued to invest in the latest technology to place it at the forefront of veterinary cancer treatment in Europe. A new Varian Medical Systems VitalBeam linear accelerator has been installed in the Riddell-Swan Veterinary Cancer Centre, which will allow us to provide the same cutting-edge radiation treatment options you would find in any human hospital.

The Varian system is equipped to deliver the most advanced forms of radiation therapy, including static gantry intensity modulated radiation therapy (IMRT), dynamic gantry IMRT/RapidArc, electron therapy and conventional 3D radiation therapy. With treatment of clients already underway, the School is well positioned as a leading hub for oncology in Europe.

The Hospital for Small Animals is a centre for clinical and research excellence and continues to attract staff from across the world to work, train and teach in Edinburgh. If you'd like to find out more about our clinical services we hope you'll visit our website. Vets can sign up for our monthly CPD webinars, the Dick Vet Clinical Club, at:

www.ed.ac.uk/vet/bookclinicalclub

The Roslin Innovation Centre Canters on!

“We would like to thank everyone for their positivity and collegiality as we continue to work together to address the challenges posed by Covid-19 and look forward to a brighter future in 2021 and beyond

- John Mackenzie, CEO

Roslin Innovation Centre (RIC) tenant companies have risen to the many challenges of 2020, as Covid-19 resilience, innovative energy and entrepreneurial spirit have continued to drive them through difficult circumstances. Companies have worked collaboratively on Covid-19 related projects, industry recognition has been awarded to business leaders and companies, and a \$4bn funding deal and investment success has been secured to take research & development to the next level.

Since RIC opened in August 2017, this unique business gateway has been a hotbed of growth, entrepreneurship and collaboration within the innovation environment of the University of Edinburgh’s Easter Bush Campus.

Occupancy currently sits at over 75% with 31 tenant companies resident at RIC, ranging from established local and

multinational organisations, start-ups and spin outs to charities, social enterprises and University business units.

In April 2020, Scotland’s first Venture Studio was launched. The Food & Agriculture Science Transformer (FAST) is an agricultural company creation programme run in partnership between Deep Science Ventures and the Roslin Institute. RIC is playing an active role in recruitment and attracting entrepreneurial scientists to develop company concepts within the three identified ‘newco’ Opportunity Areas of Animal Aquaculture, Alternative Pollinators and Environment Agriculture.

Throughout the year, tenants have received recognition for their work, with Dr Ian Fotheringham, Managing Director and founder of Ingenza Ltd, awarded an MBE for services to Industrial Biotechnology in the Queen’s Birthday Honours List.

Bayer snapped up RIC tenant AskBio in a \$2 billion cash deal to buy out one of the fast-moving pioneers in the field of new generation of cell and gene therapies, while adding up to \$2 billion more in milestones.



The Ingenza Team





Ambitious entrepreneurs Thomas Farrugia, CEO and founder of Beta Bugs Ltd, and Ishani Malhotra, founder and Managing Director of Carcinotech Ltd, were both selected for their potential to join the Unlocking Ambition development programme for talented, innovative and ambitious entrepreneurs.

RIC has also welcomed new tenants from food supply chain experts to water-based solutions. Food Chain Enterprises Ltd specialise in the various aspects of Agribusiness world-wide and provide global business consulting services and fully comprehensive support to integrated food production and manufacturing.

Clean Water Wave and Pure Water International are two companies already collaborating to deliver bespoke water treatment technology with Clean Aqua For Everyone (CAFE) filtration systems. Blending their talents, as well as advanced technology, with robust engineering, to provide safe, clean, sustainable, decentralised water packages.

Roslin Technologies embarked on a £50 million second round capital raise and brought us Vetsina Animal

Diagnostics, a joint venture between Roslin Technologies and Destina Genomics. The company harnesses breakthrough diagnostic technologies that enable early diagnosis of illness and infection in companion animals and livestock.

John Mackenzie, CEO of Roslin Innovation Centre said: "There is no doubt that the coronavirus pandemic has certainly made 2020 a challenging year for all of us and required Roslin Innovation Centre to implement new ways of working and operating within our public areas, lab and office space for the safety of our staff, tenants and visitors.

"We would like to thank everyone for their positivity and collegiality as we continue to work together to address the challenges posed by Covid-19 and look forward to a brighter future in 2021 and beyond."

As 2021 approaches, the inaugural A3 Scotland 21 Conference for the Animal Health, Agritech and Aquaculture (AAA) sectors draws near. This packed two-day programme should be one of the first conferences to welcome back industry, investors, scientists and government officials to Scotland. The conference has attracted a number of high-level sponsors and features influential and expert speakers to encourage innovation, investment and collaboration under the Transition to Net Zero conference theme.

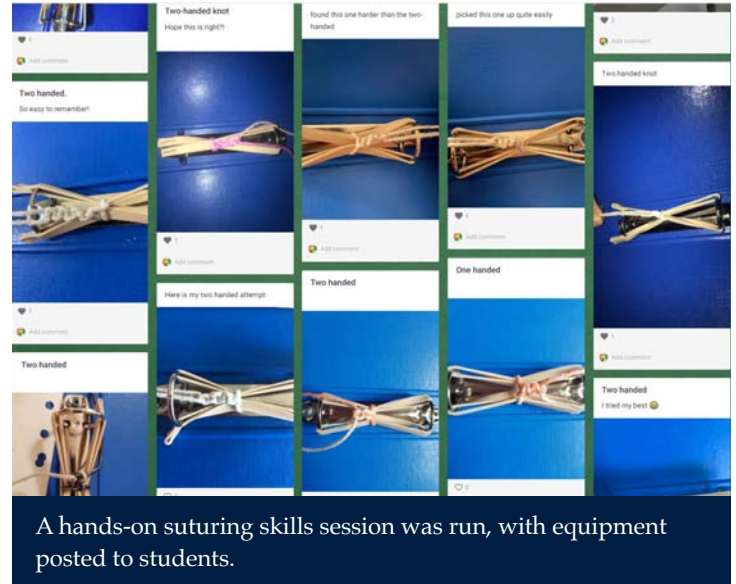
Find out more about the A3 Scotland 21 Conference www.agri-epicentre.com/event/a3-scotland-conference-2021 and the RIC and its tenants here: www.roslininnovationcentre.com

FLAGSHIP WORK EXPERIENCE PROGRAMME OFFERS INCREDIBLE EXPERIENCE FOR YOUNG PEOPLE ACROSS SCOTLAND

Science Insights is a flagship work experience programme run across the College of Medicine and Veterinary Medicine and organised by the School’s Easter Bush Science Outreach Centre (EBSOC). Previous years have seen a group of fifth-year high school pupils visit the Easter Bush and Edinburgh BioQuarter campuses and spend time with researchers and in laboratories. Due to the Covid-19 pandemic, this proved impossible and so in 2020 it ran online and offered 60 young people across Scotland an incredible experience.

Across five days the young people met with more than 35 scientists, explored the science behind the scenes, discussed ethical issues around science, investigated the relationship between science and the media, got advice on studying and applying to university and heard from researchers involved in tackling Covid-19. Using the overarching theme ‘Science is for Everyone’, the programme provided an incredible opportunity for the young people to learn more about the work done at the University.

Feedback has shown that Science Insights offers genuine information about the breadth of scientific careers available to the young people, and reassurance that there is no one career path that they have to decide on now.



A hands-on suturing skills session was run, with equipment posted to students.

Find out more about EBSOC’s work on their website: www.ed.ac.uk/medicine-vet-medicine/outreach/science-insights

GLOBAL ACADEMY OF AGRICULTURE AND FOOD SECURITY UPDATE

The Global Academy of Agriculture and Food Security has developed a significant media presence in 2020, providing key commentary and research on issues from the environmental impact of pet food production to how Covid-19 has impacted vulnerable groups such as Syrian refugees.

The Academy has this year launched a new massive open online course (MOOC) in Sustainable Global Food Systems. This course looks at the issues of sustainably feeding a growing global population and is available for free on the edX platform.

Also in 2020, Professor Geoff Simm was part of a new inquiry, ‘Farming for 1.5C’. The inquiry concluded that tacking greenhouse gas emissions in farming will require the biggest changes to the industry since the shift from horses to tractors. It examined practical solutions for farmers and called on the government for financial support.

For all of the news from the Global Academy of Agriculture and Food Security please visit: www.ed.ac.uk/global-agriculture-food-security



WORLD ONE HEALTH CONFERENCE



Academics from the Dick Vet played a key role in organising and hosting the World One Health Congress 2020. The conference was due to be hosted in Edinburgh, but due to the ongoing pandemic, a

decision was made to move the event to a new purpose-built virtual environment and deliver it online in late October, finishing on One Health Day.

With Covid-19 reinforcing the importance of One Health, the conference responded to ensure the programme reflected the current global situation. More than 1,700 researchers from 99 countries attended the virtual event, which opened with a message from the First Minister Nicola Sturgeon.

Sessions covered topics ranging from the challenges of antimicrobial resistance, advances in vaccine technologies and coordinating disease surveillance to the latest information and research on Covid-19.

You can find out more about the conference and watch some of the sessions on the dedicated World One Health Conference blog www.blogs.ed.ac.uk/one_health/

The University of Edinburgh believes that a One Health Approach is the best way to tackle some of the greatest challenges which currently face the world. Our work focuses on improving livelihoods around the world - exploring complex relationships between human, animal and environmental health, and the economic and social factors that underpin these. The Dick Vet plays a key part in this approach and supporting and facilitating events like the World One Health Congress allows us to form worldwide partnerships and share important ideas, to advance research and influence global policy.

Find out more about our commitment to One Health on our website: www.ed.ac.uk/c/one-health



EASTER BUSH BECOMES HEDGEHOG FRIENDLY CAMPUS

We are honoured to have been awarded Bronze Accreditation as a Hedgehog Friendly Campus by the Hedgehog Friendly Campus campaign. Since April 2019, staff and students have engaged in activities including footprint surveys, which together with camera traps served to monitor the presence of our prickly friends.

A campaign of work, including the provision of hedgehog houses and hedgehog friendly landscaping, has sought to make the Easter Bush Campus a more erinaceidae-friendly home. An information campaign for staff and students in addition to a social media campaign on the School's accounts have helped to raise awareness.

With declining numbers across the UK, we're doing our part to support a prickly campus resident who needs a helping hand.

FREE ONLINE TEACHING PROVIDES TIMELY BOOST FOR VET NURSES' SKILLS



A free online resource for veterinary nurses was launched on Veterinary Nurses Day 2020. Created by the School's Jeanne Marchig International Centre for Animal Welfare Education, the course provides fresh perspectives on the interactions between nursing care, animal health and patient behaviour. Its content – also a valuable teaching tool for vet nursing lecturers – will highlight how focusing on these vital overlaps can improve patient welfare and clinical outcomes.

Vet technicians and veterinary assistants are also expected to benefit from the new material, which includes video tutorials, downloadable fact sheets and interactive quizzes. Topics covered include clinical skills, patient handling and behaviour, wound management and bandaging, animal welfare and in-patient care. Registration is free via the University website.

Discover more about this new resource: www.ed.ac.uk/vet/news-events/news-and-archive/2020-news/vet-nurse-free-teaching



DICK VET AND MISSION RABIES PARTNERSHIP BOOSTS BATTLE AGAINST DISEASE

We have a longstanding collaboration with the Mission Rabies charity; an NGO that focuses on delivering mass canine rabies vaccination programmes, education outreach and disease surveillance, using their bespoke smartphone app for team direction and field data collection. Our collaboration provides an unprecedented opportunity to access and analyse rich, high-volume data describing dog demographics, vaccination and rabies, whilst providing a platform through which to directly apply research outcomes back into large-scale field operations.



STUDENT ORGANISES PLANTING OF MORE THAN 400 TREES AT THE EASTER BUSH CAMPUS

Berta Beloviczky, second-year student at the Global Academy of Agriculture and Food Security, has organised the planting of more than 400 trees on the Easter Bush Campus in December. The trees, a mixture including hazel, blackthorn, crab apple, dogrose and rowan, were planted by volunteers and will help provide important habitat for wild animals. The trees were gifted to the School by the Woodland Trust.

NEW LIVESTOCK DATA PORTAL AIMS TO DRIVE BETTER DECISIONS AND INVESTMENTS



A new website, Livestockdata.org, offers data and evidence on livestock health and productivity in low and middle-income countries. The site is managed by Supporting Evidence Based Interventions (SEBI) on behalf of the Livestock Data for Decisions community of practice.

SEBI has shown that poor quality, scarce and disparate data are holding back development of the livestock sector in low and middle-income countries. This impacts the lives of millions of people who depend on livestock for a living. The new site aims to build up a knowledgebase of open access data, interactive tools and visualisations that policy makers and investors can use to make evidence-based decisions.

The site consolidates and adds value to existing data from organisations working to improve livestock health and productivity. Among the first products released is a map of livestock development projects in low-and middle-income countries.

For more information on the launch www.ed.ac.uk/vet/research/sebi/news/new-livestock-data-portal-aims-to-drive-better-dec or access the site at www.Livestockdata.org.

DICK VET JOINS

The Dick Vet has joined the professional social network LinkedIn; a platform of growing importance to the veterinary profession.

Follow us for information and updates including alumni successes, information on postgraduate and CPD opportunities, news on the School's latest research and a range of our job vacancies, including the latest Internships and Residencies.

We'd like to invite all of our alumni to share their news, successes and any other information with us, either by tagging the School in a post, or by e-mailing vet.marketing@ed.ac.uk

Find the School at: www.linkedin.com/company/thedickvet



PUBLIC ENGAGEMENT TEAM SHORTLISTED FOR AFRICAN SCHOOLS OUTREACH PROGRAMME

An outreach programme involving Roslin experts that aims to inspire young African girls to join the next generation of scientists has been shortlisted for a 2020 Nature Research Award.

The International Veterinary Vaccinology Network’s African Schools Outreach Programme, which supports African women scientists to deliver inspirational science outreach workshops for school pupils, was nominated for the Inspiring & Innovating Science award, in the Scientific Outreach category.

The Public Engagement team at Easter Bush received support from the programme to develop a schools workshop and deliver training and equipment to female scientists from seven African countries. To date, the programme has reached more than 200 pupils across Kenya, Nigeria, Zambia and South Africa, and will be implemented in schools in Cameroon, Ethiopia and Uganda.

Find out more: www.ed.ac.uk/roslin/news-events/latest-news/african-schools-outreach-scheme-on-prize-shortlist

CLASS OF 2020 ENJOY VIRTUAL CELEBRATION

Graduation is one of the most anticipated events of the year for students and staff alike. However, in 2020 the Covid-19 pandemic made it impossible to have these important events in person and so the Dick Vet held online celebrations for both our summer and winter graduates.

The online events were led by Head of School, Professor David Argyle, with messages of congratulations from the Principal, Professor Peter Mathieson, and Head of the College of Medicine and Veterinary Medicine, Professor Moira Whyte. Video tributes from staff allowed the faculty to express their delight at our students’ success, even in these most difficult and unique of circumstances.

We offer our heartiest congratulations to everyone who has graduated this year and hope to see you back in Edinburgh at some point in the future.

If you are an alumni and would like to keep up-to-date on the latest news and information from the School, you can find the School’s new account on LinkedIn, where we post a range of news including our CPD, postgraduate, resident and intern opportunities. Alternately, you may wish to join Platform One, the University of Edinburgh’s dedicated site for alumni.

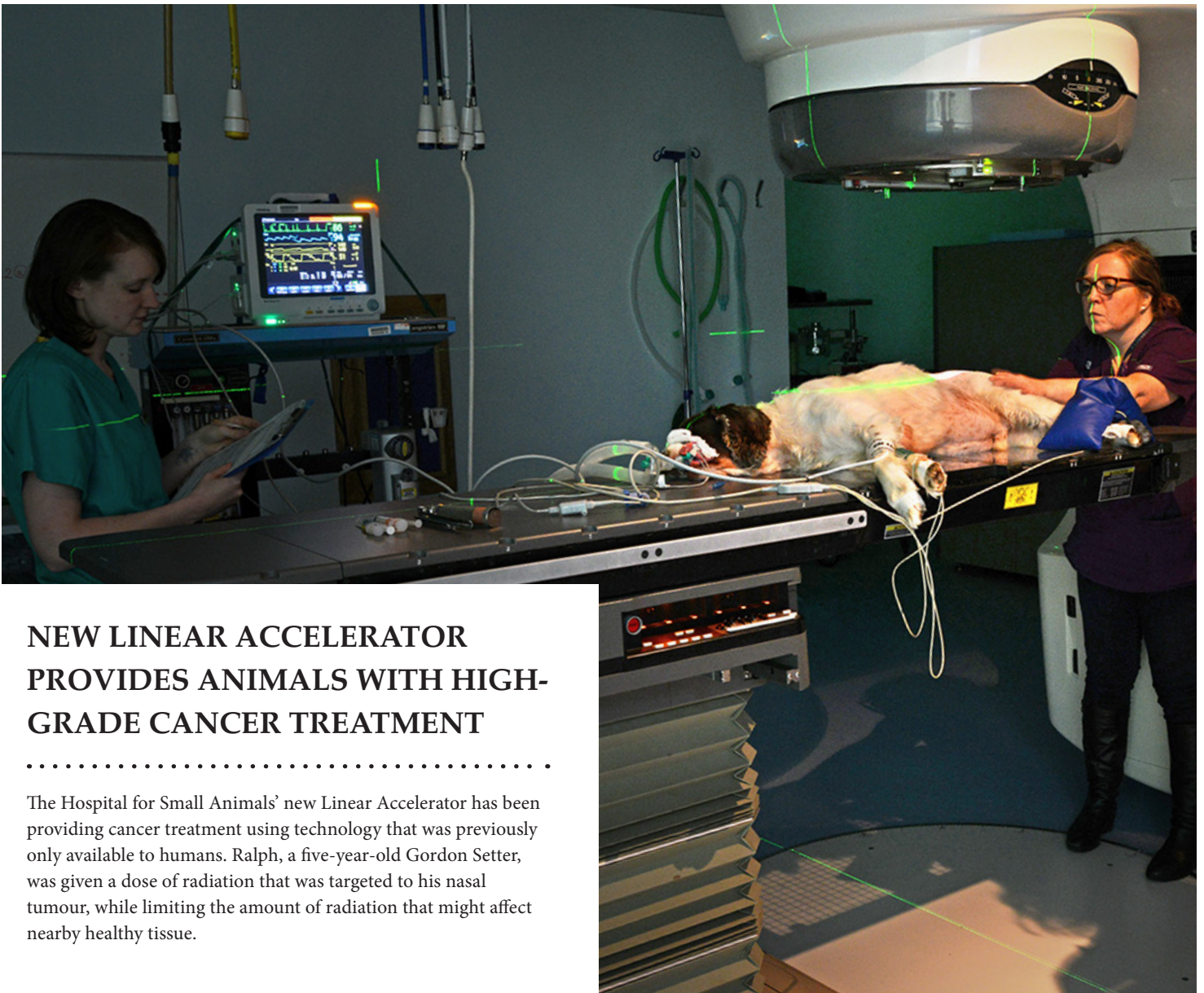


RESEARCH INSIGHTS LAUNCHES WITH EXCITING PROGRAMME OF FREE TALKS

The College of Medicine and Veterinary Medicine is excited to be launching a new series of free, online public events which explore the science and research taking place in our College. Research Insights is designed to be accessible to the general public, with no specific knowledge or experience needed to understand the topic, but will also offer key insights for those who bring this knowledge with them.

Events will run monthly on Wednesday afternoons until March 2021, covering areas including Covid-19 research, how the University is using regenerative medicine to improve quality of life for people who survive cancer, how we're researching endometriosis and much more.

You can find out more and book on our website: www.ed.ac.uk/medicine-vet-medicine/news-events/college-events/research-insights



NEW LINEAR ACCELERATOR PROVIDES ANIMALS WITH HIGH-GRADE CANCER TREATMENT

The Hospital for Small Animals' new Linear Accelerator has been providing cancer treatment using technology that was previously only available to humans. Ralph, a five-year-old Gordon Setter, was given a dose of radiation that was targeted to his nasal tumour, while limiting the amount of radiation that might affect nearby healthy tissue.

DICK VET CLINICAL CLUB PROVIDES WEBINAR CPD



Since 2013, the Dick Vet Clinical Club has offered free CPD to thousands of our veterinary colleagues, covering topics that are of direct relevance to those in practice and presented by the School's clinical experts. In order to continue to deliver this support in 2020, the School moved these sessions online. In addition to providing a consistent level of education to veterinary professionals, this adaptation has enabled us to offer our sessions to those who would normally be unable to attend in person due to distance or competing commitments

The new Clinical Club webinars have proved very popular, offering not just CPD but also a community for networking and socialising – an added level of support for all during what has been a difficult and isolating year for many. With this in mind, we have decided to continue the Clinical Club as a webinar throughout 2021.

The 2021 Clinical Club webinar schedule can be found at: www.ed.ac.uk/vet/BookClinicalClub or below:

- | | |
|--|--|
| <p>JAN
13</p> <p>Brendan Corcoran - Personal Chair of Veterinary Cardiopulmonary Medicine
Crackling Westies: not just another country and western band</p> | <p>JUL
07</p> <p>Kathryn Pratschke - Lecturer/Senior Lecturer in Small Animal Soft Tissue Surgery
Principles of surgical oncology</p> |
| <p>FEB
03</p> <p>Dylan Clements - Personal Chair of Small Animal Orthopaedics & Katia Marioni-Henry - Senior Lecturer in Veterinary Neurology
Is the lameness neuro or ortho?</p> | <p>AUG
04</p> <p>Bronwyn Koterwas - Lecturer and Clinician in Rabbit, Exotic and Wildlife M&S
Triaging exotic emergencies</p> |
| <p>MAR
03</p> <p>Ingrid Tundo - Lecturer in Small Animal Dentistry and Maxillofacial Surgery
Traumatic dentoalveolar injuries: diagnosis and update on management options</p> | <p>SEP
01</p> <p>Alisdair Boag - Senior Lecturer in Small Animal Internal Medicine
Diabetes Management - Not Always Sweetness and Light</p> |
| <p>APR
07</p> <p>Adam Gow - Senior Lecturer in Small Animal Medicine
Hepatotoxins: Drug-induced liver injury</p> | <p>OCT
06</p> <p>Tobias Schwarz - Reader in Diagnostic Imaging
Back to basics: Thoracic Radiography</p> |
| <p>MAY
05</p> <p>Danielle Gunn Moore - Personal Chair of Feline Medicine
Improving geriatric cat care in the clinic & at home</p> | <p>NOV
03</p> <p>Efa Llewellyn - Senior Lecturer in Small Animal Emergency and Critical Care
Optimising fluid therapy in your practice: Beyond 1x, 2x, 3x maintenance</p> |
| <p>JUN
02</p> <p>Spela Bavcar - Senior Lecturer in Small Animal Oncology
Tyrosine Kinase Inhibitors - treatment of Mast Cell Tumours and beyond</p> | <p>DEC
01</p> <p>Geoff Culshaw - Senior Lecturer Veterinary Clinical Services
Recent advances in veterinary cardiology</p> |

THE DICK VET ON SOCIAL MEDIA



www.facebook.com/dickvet



www.twitter.com/TheDickVet



www.youtube.com/user/DickVetSchool



www.instagram.com/thedickvet



www.linkedin.com/company/thedickvet

How to contact us

We depend on your support to maintain our high standards and fund new developments. You can help us to deliver the future of veterinary medicine. Here's how to contact us:

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Postgraduate Research Admissions

vetpgresearch@ed.ac.uk

Postgraduate Taught Admissions

mvmpg@ed.ac.uk

Or visit our website at:

www.ed.ac.uk/vet

The Power of Three

The unique offering of Excellence in Teaching, Research and Clinical Care make up the three pillars of The Royal (Dick) School of Veterinary Studies