Scientists deemed to be leading lights in the field of canine genetic research, oncology and eye disease, and a postgraduate student aiming to reduce the number of deaths caused by a deadly auto-immune disease, have received one of the largest veterinary awards in Europe for the role they have played in transforming dog health.

The International Canine Health Awards, run by the Kennel Club Charitable Trust, were presented to Dr Cathryn Mellersh, Head of Canine Genetics at the Animal Health Trust; Professor David Argyle, Head of the Royal (Dick) School of Veterinary Studies at the University of Edinburgh; Professor Sheila Crispin, now semi-retired but who has devoted her life to comparative eye disease as a researcher and clinician; and James Swann, Senior Clinical Training Scholar in Small Animal Internal Medicine at the Royal Veterinary College. The winners were given prize money to further their work in the field of canine research, underwritten by a major gift from Vernon and Shirley Hill of Metro Bank. Cathryn Mellersh and David Argyle were each awarded £20,000 for their International Awards, Sheila Crispin was awarded £10,000 for the Lifetime Achievement Award and James Swann was granted £5,000 for the Student Postgraduate Award.

From our winners...

**Dr Cathryn Mellersh**

“The fund from this award will help us to make great strides in sequencing the whole genome of several breeds, as well as assisting our current investigations into idiopathic epilepsy and inherited eye disease in a number of breeds, helping us to make a huge difference to the health of several future generations of dogs.”

**Professor David Argyle**

“The money from the award will enable me to fund a postgraduate student to study the protein we have identified as causing the spread of cancer, enabling us to take this vital research to the next level. This will have huge implications not only for dogs, but potentially for humans as well, meaning that dogs really are a man’s best friend.”

**James Swann**

“With the money from this award, I intend to look at therapies used in human medicine and I hope to be able to learn more about adoptive transfer of cells that regulate the immune system as a possible treatment option for autoimmune diseases.”

**Professor Sheila Crispin**

“This most generous award will enable me to continue to visit remote areas to help tackle the many eye diseases of the local animal inhabitants.”
NEWS

Genetic Mutation Found For Rare and Debilitating Disease Affecting Border Collies

Sensory neuropathy (SN) is a severe neurological disease affecting young Border Collies for which there is no treatment. Affected dogs progressively lose the sensation in their limbs due to the degeneration of sensory and motor nerve cells and have to be euthanised. The onset of the disease is usually between two and seven months of age and clinical signs include knuckling of the feet, self-mutilation wounds (caused by excessive chewing or licking due to the lack of feeling in the limbs) and a progressive lack of coordination (ataxia).

SN is currently a rare disease but cases have been seen worldwide in the UK, US, Belgium, Japan and Italy and, before a case is seen, it is impossible to know which lines contain carriers.

To help Border Collie owners and breeders combat this debilitating disease, The Kennel Club Genetics Centre at the Animal Health Trust has identified the genetic mutation responsible for SN and a DNA test is now available.

Scientists at the AHT have been researching the genetic basis of this disease in the Border Collie since two affected dogs were diagnosed by neurologists in the AHT’s Small Animal Centre, providing DNA samples to begin a genetic investigation. A third DNA sample was provided from the University of Glasgow. The three samples were compared to the DNA of 170 Border Collies whose DNA has been submitted to the AHT from owners to aid its epilepsy research in the Border Collie. This extensive bank of DNA was crucial in enabling the AHT to identify which chromosome contained the genetic mutation for SN as quickly as possible. Once this was identified the chromosome was sequenced to find the faulty gene responsible for SN.

To make SN testing easier and more affordable for owners the AHT now offers a combined test which also includes test for Trapped neutrophil syndrome and Vitamin B12 deficiency or Imerslund-Gräsbeck Syndrome.

For more information about sensory neuropathy or to order the test please visit [www.aht.org.uk/caninegeneticssuccess](http://www.aht.org.uk/caninegeneticssuccess)

Free online breeding lecture series now available

If you missed the “Practical aspects of dog breeding” lecture series at this year’s BSAVA Congress then you can now listen to all six Kennel Club sponsored lectures [here](http://www.aht.org.uk/caninegeneticssuccess) for free.

**Gene Genie** covers the basics of inheritance, including how to use DNA test results and understanding complex inherited diseases. (Dr Tom Lewis, Kennel Club).

**Understanding the Modern Dog Breeder** discusses the complex considerations of modern breeders in balancing health screening results with “whole dog” improvement (Aimée Llewellyn, Kennel Club).

**Advising the Dog Breeder** provides ways in which to help advise clients interested in breeding - such as sourcing up-to-date information, and making the most of available online health resources (Aimée Llewellyn, Kennel Club, and Dr Dan O’Neill, RVC).

**Demand Side of the Health Argument** explores how the public can influence canine health improvements (Philippa Robinson).

**The right dog for the right home** provides guidance on how to advise clients and the general public on choosing the right dog for them - an aspect of dog ownership key to reducing unwanted dogs (Bill Lambert, Kennel Club).

**The other role of the Veterinary scientist in Dog Health** discusses how vets can benefit through contributing to dog health and welfare beyond the practice. (Dr Dan O’Neill, RVC; Dr Katy Evans, Nottingham University).
Oral Melanoma Research - can you and your clients help?

Melanomas make up around 4% of all canine tumours and occur in cells that contain the pigment melanin, usually in the skin, mouth, under the toe nails, or in the eyes. The severity of a melanoma will depend on its location, with oral tumours being the most likely to spread.

The Oncology (Cancer) Research Group at the Animal Health Trust is carrying out research that will ultimately assist clinicians to better diagnose and treat dogs in the future. It is hoped that by identifying the underlying causes of cancer in dogs, it may be possible to reduce the numbers of animals that suffer from this disease.

How can you help?
The Oncology Research Group is currently engaged in two research studies on oral melanoma. One study seeks to identify ‘tumour molecular markers’ which will accurately predict whether an oral melanoma will metastasise, whilst the second aims to identify melanoma-specific markers that can be detected in peripheral blood as a means of detecting No experimental animals are used in their research, but instead they rely on obtaining samples of naturally occurring tumours that are collected from patients by veterinary surgeons, and blood samples left over from normal diagnostic clinical procedures.

To assist with this study, the Oncology Research Group are asking for blood samples (EDTA or citrate tube) and/or tumour biopsies (freshly frozen, RNAlater-preserved, or formalin-fixed) from dogs with oral melanoma. Samples should be sent with a histopathology/cytology report along with any clinical information, including stage, treatment details and follow up.

If you are able to help, then your assistance would be much appreciated. Further information can be found here or by contacting oncologyres@aht.org.uk.

Visit www.kcbarc.org.uk for information on other research projects.

BARC currently has 25 research projects that you could help by supplying samples!
The Dogslife Research Project

The Dogslife project was launched in 2010 following funding from the Kennel Club Charitable Trust, with the aim of identifying genetic and environmental risks for canine health over time. Dogslife is the first, and largest, longitudinal study of canine health ever undertaken, and currently has over 5,600 dogs enrolled. Owners participating in the project detail information about their dog’s health and lifestyle to the Dogslife website at regular intervals and this data is evaluated for risk factors associated with the development of different diseases and measurable phenotypes.

For example, in a recent publication from the study, Carys Pugh and colleagues identified that the amount of exercise that Labrador Retrievers receive is associated with weight gain once they are mature, just like in humans. The group also found that coat colour was associated with weight to find out more click here.

As well as accruing information through questionnaires, photographic records, and accelerometer measures of activity, DNA and faecal samples have been collected from participating dogs to help scientists look for genes which are associated with diseases such as obesity, limber tail and histiocytomas. These samples are also being analysed to produce the most detailed analysis of Labrador Retriever DNA ever undertaken, which will enhance our ability to identify the genetic causes for other problems which dogs develop as they grow older.

The project would not be possible without the incredible contributions of owners, breeders and vets supporting and participating in the project. Please visit the Dogslife website (www.dogslife.ac.uk) if you would like to find out more about the study and how you can help.

Did you know?

In 2014, The Kennel Club Charitable Trust helped fund £400,000 in vital scientific research for canine health.

The Kennel Club Charitable Trust Blog

Want to keep up to date with all the Kennel Club Charitable Trust do for canine health and welfare? Click here to visit the Kennel Club Charitable Trust blog...
Does your vet practice register microchips with Petlog?

If so then make sure your practice is registered on our new service – **Find a Petlog Implanter**.

From April 2016 it will be compulsory for all dogs to be microchipped and registered on a government compliant database, such as Petlog. To help pet owners and breeders find their nearest Petlog implanter quickly and easily, we have developed a NEW online service – **Find a Petlog implanter**.

The ‘**Find a Petlog implanter**’ service features on the Kennel Club and Petlog website which both receive hundreds of thousands of visitors per month so make sure your practice can be found by registering here [www.findanimplanter.petlog.org.uk](http://www.findanimplanter.petlog.org.uk).

**Did you know?**

Statistics, released as part of National Microchipping Month, show that the top six breeds to go missing include: Staffordshire Bull Terriers, Labrador Retrievers, Border Collies, German Shepherd Dogs and Jack Russell Terriers, and collectively make up 30 per cent of the total number of dogs currently missing.

Free revolutionary epilepsy app now available

Do you own a dog with epilepsy? **The Royal Veterinary College (RVC)** has recently developed a smart phone app to help owners monitor and improve the lives of their dogs.

This revolutionary app includes functions which allow owners to map seizure activity and provide reminders for each medication prescribed. The app also enables owners to convert their dog’s records into a PDF file and send it directly to their vet to determine whether the dog’s current treatment is effective.

The app also allows owners to share their seizure and medication diaries directly with researchers at the RVC, helping to contribute anonymously to long term studies of seizure activity.

To find out more about this free app and how to download it please click [here](http://example.com).

**Are you a veterinary researcher?**

Would you like to help increase publicity about your research to gain more DNA/biological samples or completed surveys? Why not visit our Bio-Acquisition Research Collaboration (BARC) webpage to find out about how the Kennel Club can help you?

[www.kcbarc.org.uk](http://www.kcbarc.org.uk) #doghealth
Almost half of dog owners are spending more on vets’ fees than they had accounted for, as more than one in four people (27%) say that they suspect that their puppy came from a cruel puppy farm. The rising cost of owning a puppy comes as people opt to buy ‘mail order pups’ online or from newspaper ads, not realising that many pups being sold through these routes have been illegally smuggled from abroad.

Kennel Club research for Puppy Awareness Week, shows that:

- One in ten people bought a ‘mail order pup’ from the internet online or from a newspaper advert, without seeing it first.
- One fifth of pups purchased in this way ended up with serious gastro intestinal problems, 15% with parvovirus and one in ten developed kennel cough.
- 15% of people continue to buy their puppies from pet shops.
- Almost one in five of pups bought from pet shops end up parvovirus (18%).
- 36% do not see the pup interacting with its mum
- 61% do not see the pup’s breeding environment
- Almost three quarters do not receive a contract of sale and 70% do not receive health test certificates to show the parents have been health tested before being bred from.

As part of its Puppy Awareness Week the Kennel Club reminds people that whilst there is nothing wrong with finding a breeder online, so long as the advert complies with the Pet Advertising Advisory Group’s minimum standards for advertising pets, but people must then meet the breeder and the pup, in its home environment and with its mother. The Kennel Club advises people to either go to a rescue centre or buy a puppy from a Kennel Club Assured Breeder, who are inspected by the Kennel Club and have to follow rules for the responsible breeding of their pups.

The research shows that people need advice and guidance from their vets and other professionals about how to buy a puppy as 12% still buy pets as presents, 7% buy as a spur of the moment decision and one in five buy a puppy because of the way it looks.

Sadly, people’s insatiable appetite for puppies and lack of appetite for research, is too often fed by puppy farmers in the UK and overseas. The Kennel Club is increasingly concerned about puppy farmers abroad supplying dealers with puppies to sell onto the public. Defra figures indicate that there was a 61% increase in pups coming into the UK from abroad in the first year since the controls were relaxed under changes to the Pet Travel Scheme in 2012, and that does not account for the undeclared dogs that are being smuggled illegally into the country.

The Kennel Club has compiled a film about the dos and don’ts of buying a puppy which can be seen on the Kennel Club website and downloaded from The Vet Channel for playing in waiting rooms.

For a Puppy Awareness Week pack, including a poster and flyers to help your clients buy a puppy more responsibly please email paw@thekennelclub.org.uk

For more information about buying a puppy responsibly and for the Kennel Club’s do’s and don’ts of buying a puppy video, visit the Kennel Club website.

Please watch and share this video on the importance of always seeing a puppy interacting with its mother before before buying it. #PAW #wheresmum

Order your PAW pack now!
Focus on: Familial nephropathy

Details about the disease
Persistent high levels of protein in the urine of a young dog may prove to be due to Familial Nephropathy (FN). Dogs affected with FN have a genetic defect within the glomerulus, a structure that filters blood flowing through the kidney. This defective glomerulus lacks a certain type of collagen (main protein in connective tissue) that helps to hold the filter structure together. Once the glomerulus begins to lose its ability to work properly, blood proteins leak through into the urine. The glomerular abnormality also leads to further kidney damage, which eventually destroys the entire nephron (tiny structures that make up the kidney and cannot be replaced once damaged or destroyed). The renal disease caused by FN invariably is progressive and ultimately fatal; however, the rate of disease progression observed in affected dogs is more rapid in some individuals than in others.

Clinical signs
Dogs with FN typically develop chronic renal failure between 6 months and 2 years of age, with eventual and sometimes rapid destruction of both kidneys. The early clinical signs are the same as those associated with chronic renal failure due to any other cause. These include excessive water consumption, excessive urine volume, reduced growth rate or weight loss, poor quality hair coat, reduced appetite, and vomiting.

How it is inherited
The disease is described as an autosomal recessive condition. This means that a dog must inherit two copies of an abnormal gene (one from its mother and one from its father) before its health is affected. A dog that inherits only one copy of the abnormal gene (from its mother or its father) will have no signs of the disease, but will be a carrier and may pass the gene on to any offspring.

DNA test for Familial Nephropathy
The Kennel Club started recording results for the DNA test in 2001. Since then, we know the FN health status of 21,832 dogs; 2097 dogs were tested as clear, 22 were tested as carriers, and 19713 were hereditarily clear.

More information
To find statistics of breed specific DNA test results, please see the data presented as part of the Dog Health Group Annual Report.
To find out which breeds have a DNA test available for FN please see our Worldwide Canine DNA test list.
To look for the health test results of a particular Kennel Club breed registered dogs, please see Mate Select.

Did you know?
In the last 15 years over 1,900 Cocker Spaniels have been DNA tested for FN, of which 99% were tested clear.
Brachycephalic Study: Journal article summary

In each edition of the Kennel Scope we’ll be providing you with up-to-date research in areas that may be of interest to veterinary professionals. In this edition, we’ll be summarising the findings from:


The full open access article is available online here.

Background
Brachycephalic dog breeds are increasingly common. Canine brachycephaly has been associated with upper respiratory tract (URT) disorders but reliable prevalence data remain lacking. Using primary-care veterinary clinical data, this study aimed to report the prevalence and breed-type risk factors for URT disorders in dogs.

Results
The sampling frame included 170,812 dogs attending 96 primary-care veterinary clinics participating within the VetCompass Programme. Two hundred dogs were randomly selected from each of three extreme brachycephalic breed types (Bulldog, French Bulldog and Pug) and three common small-to medium sized breed types (moderate brachycephalic: Yorkshire Terrier and non-brachycephalic: Border Terrier and West Highland White Terrier). Information on all URT disorders recorded was extracted from individual patient records. Disorder prevalence was compared between groups using the chi-squared test or Fisher’s test, as appropriate. Risk factor analysis used multivariable logistic regression modelling.

During the study, 83 (6.9 %) study dogs died. Extreme brachycephalic dogs (median longevity: 8.6 years, IQR: 2.4-10.8) were significantly younger at death than the moderate and non-brachycephalic group of dogs (median 12.7 years, IQR 11.1-15.0) (P < 0.001). A higher proportion of deaths in extreme brachycephalic breed types were associated with URT disorders (4/24 deaths, 16.7 %) compared with the moderate and non-brachycephalic group (0/59 deaths, 0.0 %) (P = 0.001).

The prevalence of having at least one URT disorder in the extreme brachycephalic group was higher (22.0 %, 95 % confidence interval (CI): 18.0-26.0) than in the moderate and non-brachycephalic group (9.7 %, 95 % CI: 7.1-12.3, P < 0.001). The prevalence of URT disorders varied significantly by breed type: Bulldogs 19.5 %, French Bulldogs 20.0 %, Pugs 26.5 %, Border Terriers 9.0 %, West Highland White Terriers 7.0 % and Yorkshire Terriers 13.0 % (P < 0.001).

After accounting for the effects of age, bodyweight, sex, neutering and insurance, extreme brachycephalic dogs had 3.5 times (95 % CI: 2.4-5.0, P < 0.001) the odds of at least one URT disorder compared with the moderate and non-brachycephalic group.

Discussion and conclusions
In summary, this study reports that URT disorders are commonly diagnosed in Bulldog, French Bulldog, Pug, Border Terrier, WHWT and Yorkshire Terrier dogs attending primary-care veterinary practices in England. The three extreme brachycephalic breed types (Bulldog, French Bulldog and Pug) were relatively short-lived and predisposed to URT disorders compared with three other small-to-medium size breed types that are commonly owned (moderate brachycephalic Yorkshire Terrier and non-brachycephalic: Border Terrier and WHWT).

Canine Genetics and Epidemiology is a peer-reviewed, open access, online journal publishing original research and review articles relating to all aspects of canine genetics and epidemiology. The Kennel Club Educational Trust cover 50% of the article processing charge for manuscripts published in the area of domestic dog health.

Want to discover more about the latest research into canine genetics and health? Why not take a look at the free open access journal - Canine Genetics and Epidemiology?