![University of Bristol logo] **University of BRISTOL**

![Bristol Cats paw print logo] **Bristol Cats**

Bristol Cats Study Newsletter - Autumn 2022

The 'Bristol Cats' study is a pioneering study of cat health, welfare and behaviour run by vets, behaviourists and epidemiologists at the University of Bristol. The aim is to improve knowledge of common diseases and behaviour problems of cats, for example, overgrooming, aggressive behaviour, obesity and diabetes mellitus. Findings from the study may be used by veterinary practitioners, cat breeders, owners and the cat community to improve the health and welfare of cats in the future.

Study news

Goodbye to Charlotte...

With the arrival of Autumn we said a sad farewell to our study co-ordinator Charlotte McDonald. Charlotte is now working within Population Health Sciences as the Trial Co-ordinator for PRIME RCT, which aims to find out whether a new model of care, termed "PRIME Parkinson Care" is helpful for people living with Parkinson's. Charlotte told us

"*I may not be working on Bristol Cats anymore, but that doesn't mean I have stopped working with animals altogether! If a new job wasn't enough, I am keeping extra busy working with a local rabbit rescue, creating their newsletters, fundraising and fostering bunnies until they find their forever home. Whatever I am doing my wonderful kitties Bellatrix and Ghost are keeping me company and cosying up for cuddles now that the winter months are creeping in*".
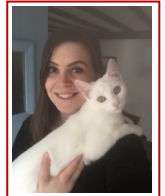
Welcome to two new members of the team...

Sarah Burrows-Weeks has replaced Charlotte as the new Bristol Cats study co-ordinator. Sarah is passionate about animal welfare and is the owner of 7 chickens, 4 cats, 3 dogs, 2 guinea pigs, an axolotl, a chinchilla, a hedgehog, a tortoise, and a cockatiel. When she's not taking care of them, she also finds time to complete her PhD!
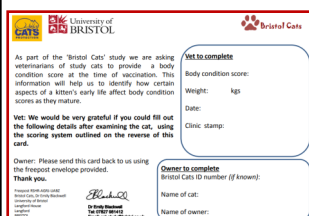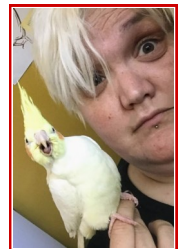
The second new arrival is **Ellie Davey** who has joined the team as a Research Technician. Ellie told us "*I completed my Biomedical Science BSc back in 2021 and have spent the past year working in student recruitment at the University of Bristol. Whilst studying at University, I was lucky enough to be a part of several research projects and have been keen to get back into a research setting ever since. I am now so excited to have recently joined the Bristol Cats Study as a research technician, having the opportunity to be a part of such great work and see everyone's gorgeous cats! My passion for pet care and welfare comes from my own wonderful pets; Knuckles (top right), Rosie (bottom left) and Tails (bottom right). Sadly, we have lost all three of our pet-family members over the past two years, and this loss to our family has only reaffirmed the importance of the work done by the team on the Bristol Cats study, who are so passionate about what they do and all your wonderful cats. I can't wait to see what the next few months entail for me on the study*".

Win a corkscrew cat cave

Don't forget that all owners who returned a body condition score and oral health card for 2021 and 2022 will be entered into our prize draw to win a woolly corkscrew cat cave!

These cards provide us with useful clinical information which allows us to monitor the oral health and body condition of the Bristol Cats. There's still time to get yours to us before the deadline of 31st December 2022.

Study updates:

Body condition scores

Undergraduate veterinary science student Moa Kwan Ho spent this Summer working on a placement with the Bristol Cats study team. He has been looking at the body condition scores of your cats and how these change over time. In this table you can see the percentage of cats given each of the scores at 6 and 8 years of age. The majority of cats were considered by their owners to have an ideal body condition (BCS3) at both six years (69.4%) and 8 years of age (68.4%).

Age of cat (years)	Number of cats assessed	BCS1 (Very thin) %	BCS2 (Thin) %	BCS3 (Ideal) %	BCS4 (Overweight) %	BCS5 (Obese) %
6	941	0.4	4.8	69.4	23.7	1.7
8	841	0.1	4.2	68.4	25.5	1.9

Social behaviour and relatedness

Emily Wallis' undergraduate research project investigated relatedness and social behaviour. She was interested in looking at whether it's true that related pairs of kittens have stronger social bonds. Emily's study examined whether related cats (littermates) were more likely to show mutual affiliative behaviour at 18 months, 2.5 years and 4 years of age, when compared to non littermate pairs that were obtained as kittens. She used the information that you provided in your questionnaires to identify social behaviours such as 'allogrooming' (grooming each other), rubbing heads and flanks against one another and sleeping touching one another, which are all signs that the cats consider each other to be part of the same social group.

The results suggested that whether the cats were littermates or not did not influence the reporting of affiliative behaviours, for this particular cohort of kittens.
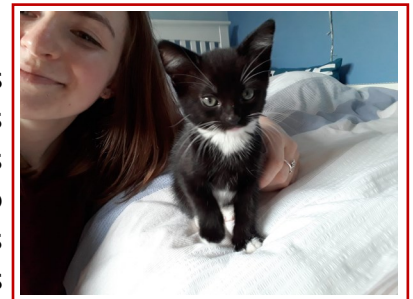
Using machine learning techniques for early detection of joint disease

This research project follows on from the study by Evelyn Maniaki that some of your cats were involved in. Axel Montout, a Research Associate at University of Bristol, used advanced computational analysis, to look at whether the way a cat moves can predict early signs of joint disease.

Axel Montout

Fifty-six pet cats had a small sensor attached to their collar, that collected accelerometery data on how they moved (an activity count was recorded every second!) over a continuous 12-day period. The Raw sensor data was then compared with the mobility score for the cat (generated from the answers that you provided in the annual questionnaires). By looking specifically at bursts of activity such as jumping, the software is able to predict with 69% accuracy whether or not the cat has joint disease.
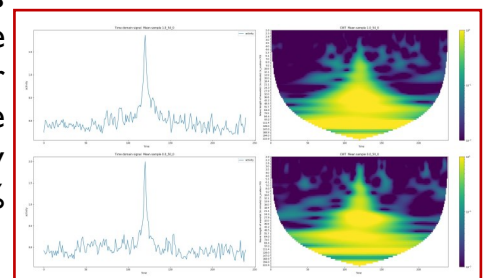
Visualisation of the activity data.

If you would like to know more about the technical details, you can find the full blog post here: https://jeangoldinginstitute.blogs.bristol.ac.uk/2022/08/15/jgi-seed-corn-funding-project-blog-2021-emily-blackwell/

Research on the prevalence and risk factors for gum disease in the Bristol Cats.

Gingivitis (gum disease) is one of the most common conditions seen in feline veterinary practice. There are often no outward signs of the disease, so it can go unnoticed until it is quite advanced, by which point it may be causing the cat considerable discomfort.

The aim of this study, conducted by Jess Williams, was to look at how common signs of gum disease were detected in the Bristol Cats during the first six years of their lives and also to identify factors that might increase the risk of gum disease in cats.

Data collected from the oral health cards completed annually by the veterinary surgeons of cats enrolled in the study were used to identify cats with gum disease. An oral health score of zero was classified as no gum disease and a score of one or above was used to identify cats with gum disease. Data obtained via annual questionnaires completed by owners of cats in the study were used to identify risk factors for gum disease.

A total of 1534 cats were included in this part of the study. Scores at three age points (1 year to under 2 years; 2 years to under 3 years and 3 years to under 4 years) were examined for each cat, in order to compare changes in oral health over time. Perhaps unsurprisingly, gum disease was found to increase over time, ranging from 24.5% of cats under 12 months to 56.3% of cats showing some signs of gum disease by the age of five.

To identify possible risk factors for gum disease cats aged between 3 and 4 years with gum disease were compared with cats of the same age, but with no signs of disease. Likelihood of gum disease was higher in cats fed a wet only or mixed wet and dry food diet, compared to a diet of dry food only. Although this suggests that a diet exclusively of dry food would benefit oral health, there are other factors to consider when deciding upon the feline diet, such as the link between a dry diet and obesity, or the need to increase water content in the diet of cats prone to urinary infections, so the optimum diet for individual cats will differ and should be based upon clinical advice.

The good news for those of you who have to deal with the unpleasant 'gift' of part-eaten prey delivered by their cat, is that cats whose owners *did not* report hunting behaviour were also more likely to have gum disease according to their veterinary surgeon. This may be due to the chewing of tissue and bones providing a mechanical cleaning action on the teeth surfaces.

Interestingly, cats with orange variants in their coat colour (those with ginger or cream colouring) were also more likely to suffer from gum disease, suggesting that there may be a genetic predisposition associated with these colour variants. Cats that were reported to dribble when they were stroked were found to have higher levels of gum disease than those that did not dribble, however this finding was only the case at one time point (questionnaires completed when the cats were aged 6 months), so is inconclusive.

Finally a big thank you to everyone for completing questionnaires and sending in oral health cards, without which this study would not be possible.! These findings will help vets in practice to identify cats that might be at greater risk of gum disease and provide evidence-based recommendations to their clients.

Moving house / changed your email address / need to contact us?

If you have changed email address, moved house or have a new contact number it is easy to update these online by visiting the website and following the instructions:

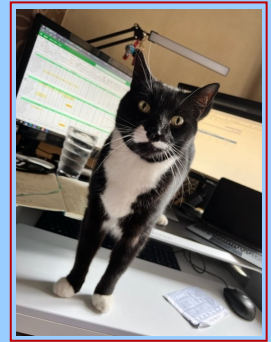https://smvsfa.onlinesurveys.ac.uk/update

Alternatively you can get in touch using our contact details below:

Telephone: **0117 394 0850**
Email: **cat-study@bristol.ac.uk**
Freepost: RSHR-AGRJ-UABZ Bristol Cats, Dr Emily Blackwell
University of Bristol Langford House BRISTOL BS40 5DU

Call for photos for our Christmas card!

Christmas is approaching and it's that time of year when we request photos of your lovely cats to adorn our Bristol Cat Study Christmas card.

If you would like a photo of your cat(s) to feature on our 2022 'Bristol Cats' Christmas card then please email us a photo by **Sunday 30th October** to: cat-study@bristol.ac.uk.

We try to feature as many cats as possible, but space is limited! Please try to send us clear photos of a high resolution as this will increase the chance of your cat featuring on the card.