

## Bristol Cats Study Newsletter - Spring 2017

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 (but not exclusively), unwanted elimination, obesity and hyperthyroidism. 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.

### Welcome Emily!

We are delighted to inform you that Dr Emily Blackwell has joined the Bristol Cats study! Emily is a certificated clinical animal behaviourist (CCAB) and companion animal behavioural scientist. She is a Senior Lecturer at the University of Bristol and leads a research group investigating aspects of companion animal behaviour and welfare, such as the aetiology, and treatment of problematic behaviours in companion animals.

When she is not engaged in research, Emily divides her time between clinical work, using science-based techniques to help the owners of problem pets, and teaching veterinary science, veterinary nursing and animal behaviour and welfare students about companion animal behaviour. Emily also consults extensively on and off screen for television programmes about companion animal behaviour, including the Ch5 series *The Secret Lives of Kittens* and can currently be seen on screen in the BBC2 series *Me and My Dog: The Ultimate Contest*.

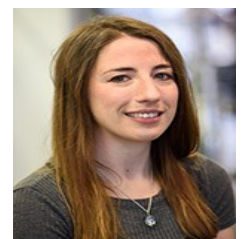


*"I am really excited to be joining the Bristol Cats project. This unique study, following kittens throughout their lives and obtaining data from their dedicated owners, is fundamental to improving our understanding of why some cats develop diseases or behaviour problems and developing better ways of preventing or treating them."*

The Bristol Cats team would like to say a huge "Thank you!" to Jane Murray for running this project for the last 8 years. The success of the project is a result of Jane's hard work and dedication. Jane's involvement with Bristol Cats will continue, in addition to working on new projects with Dogs Trust.

### Work Experience

Lucy Wilkins, a BSc student at Oxford Brookes University studying Animal Behaviour and Welfare, will also be joining us for work experience on the project from May to September this year. Lucy will be helping us with some data entry and other admin work that ensure the study continues to run smoothly.



## Completed studies:

### **“Risk factors for road traffic accidents in cats up to age 12 months that were registered between 2010 and 2013 with the UK pet cat cohort (‘Bristol Cats’)”.**

Road traffic accidents are a common cause of death and injury in cats, and a concern to many owners. Views on what increases a cat’s risk of being involved in an accident differ, with some rescue organisations preferring not to re-home cats to live on busy roads or insisting that adopted cats are kept indoors at night.

This study, completed by Jess Wilson, has now been published in the Veterinary Record, and a summary is provided below. If owners would like a PDF copy of the full paper then please request it by emailing us at: [cat-study@bristol.ac.uk](mailto:cat-study@bristol.ac.uk). Thank you to all owners for their part in helping with this research.

#### **Summary:**

This study assessed potential risk factors for road traffic accidents (RTAs) in cats up to 12 months of age within The Bristol Cats study. Data were used from three questionnaires, completed by cat owners when their cats were approximately 8–16 weeks old, 6 months old and 12 months old. Information was gathered regarding environmental conditions, cat characteristics and owner management factors. Cases were defined as cats that were reported by their owners to have been involved in an RTA by the age of 12 months, whether or not the accident was fatal. controls consisted of all cats in the study with outdoor access whose owners had completed the 12-month questionnaire and had reported that the cat had not been involved in an RTA. Cats were excluded from analysis if their owner had answered ‘Don’t know’ to the question ‘Has your “Bristol Cats” study cat been hit by a vehicle since you have owned him/her?’ or if the owner had not reported the cat’s outdoor access. Univariable and multivariable logistic regression models were used to assess associations between potential risk factors and RTAs.

**Results:** Of 1264 eligible study cats, 49 (3.9 per cent) had been involved in an RTA, of which 71.4 per cent (35/49) were known to result in fatal injuries. Rural locations were associated with a higher odds of RTAs than towns, cities or suburban locations. An increased odds of an RTA was also associated with cats that were reported by their owners to hunt at the roadside, as well as cats whose owners classified the road by their house as being a ‘long straight section of road’. No significant associations were found between coat colour, breed, sex or neuter status and the odds of an RTA.

**Stay up to date with us on twitter (@UniofBristolCats),  
Facebook ([www.facebook.com/bristolcats.study](http://www.facebook.com/bristolcats.study)) or on our website,  
([www.bristol.ac.uk/vetscience/cats](http://www.bristol.ac.uk/vetscience/cats)).**

# Completed studies (continued):

**Claire Roberts** (Zoetis feline scholar at the University of Bristol) presented the following poster in July 2016 at the International Society of Feline Medicine annual congress in Malta. Claire looked at what factors are associated with owners opting to leave the Bristol Cats study. This work can help inform future longitudinal studies on how best to keep study participants involved.

This poster, as well as others produced from Bristol Cats study work, can be accessed online at <http://www.bristol.ac.uk/vetscience/research/projects/cats/resultsfromthebristolcatsstudy/>

## Factors associated with early retention of cats in a UK longitudinal study



**Claire Roberts**, Timothy Gruffydd-Jones, Emma Gale, Jane Murray  
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### Summary

The Bristol Cats Study (BCS) is a longitudinal study of UK pet cats. None of the cat characteristics tested were associated with drop out from the BCS up to age 18 months. However, drop out was more likely for cats with owners:

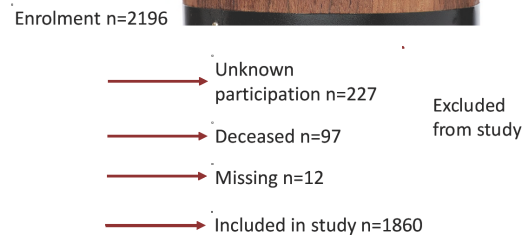
- With an annual household income of <£30,000
- With children in the household <16 years old
- Aged <45 years
- Without a degree



This can help longitudinal studies to target their retention strategies

### Results

Figure 1: Number of cats excluded from and included in this study



### Introduction

The Bristol Cats Study is a longitudinal study of UK pet cats which investigates their health, behaviour and environment through data including owner-reported questionnaires at specific cat ages.

Longitudinal studies are prone to drop out which can introduce bias<sup>1</sup>

The aim of this study was to investigate whether specific owner and/or cat factors were associated with drop out from the BCS up to age 18 months.

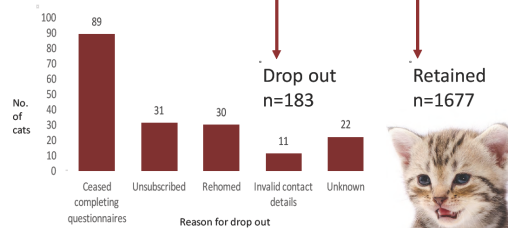


Figure 2: Reasons for drop out from the BCS up to 18 months

### Materials and Methods

Cats who died or went missing prior to questionnaire four (Q4; age 18 months) and those with unknown participation status at Q4 were excluded from analysis (Fig. 1).

Cats with questionnaire one (Q1; age 12-16 weeks) and Q4 (or any subsequent questionnaire) completed were classified as retained.

Reasons for drop out were identified (Fig. 2.)

Multivariable logistic regression models were used to test for associations between the following variables and drop out:

- Household:**
- Income
  - Qualifications
  - Tenure
  - Age of owner
  - Presence of children
  - Presence of other cats



- Cat:**
- Source
  - Sex
  - Breed



Definition of drop out: cats lost to follow up, excluding deceased & missing cats

### Multivariable analysis

Table 1: Multivariable logistic regression model: Risk factors for drop out from the BCS up to 18 months

Variable	Drop out n (%)	Retained n (%)	p-Value	OR (95% Confidence Interval)
Annual household income				
£30,000 or more	60 (7)	835 (93)	<0.001	1.00
Less than £30,000	96 (14)	609 (86)		1.97 (1.38-2.82)
Age of owner				
45 years or more	35 (6)	555 (94)	<0.001	1.00
Less than 45 years	121 (12)	889 (88)		1.98 (1.33-2.96)
Children <16 years old in household				
No	95 (8)	1072 (92)	0.004	1.00
Yes	61 (14)	372 (86)		1.67 (1.18-2.38)
Highest household level of education				
Degree or postgraduate	92 (8)	1058 (92)	0.023	1.00
None, GCSE or A level	64 (14)	386 (86)		1.52 (1.06-2.18)

### Discussion

The associations identified (table 1) can help researchers setting up and running longitudinal studies to target their retention strategies.

Retention bias relating to the cat characteristics tested is unlikely to have influenced results based on BCS data up to age 18 months

#### References:

1. Wolke, D., Waylen, A., Samara, M., Steer, C., Goodman, R., Ford, T. and Lamberts, K. (2009) Selective drop-out in longitudinal studies and non-biased prediction of behaviour disorders. *The British Journal of Psychiatry*. 195, 249-256.

#### Acknowledgements:

"Bristol Cats" owners are thanked for their participation. Claire Roberts's post is funded by Zoetis, Jane Murray's post is funded by Cats Protection and Emma Gale's post is funded by WALTHAM.



## Study updates:

### “Owner-reported flea control measures and skin disease in cats”

Studies have shown that skin disease is one of the most common reasons for cats to be presented to a vet. Fleas are a common cause of skin disease, however the role of fleas in skin disease in cats may not be appreciated by some owners, given that up to 50% may not be aware that their cat is harbouring fleas. Sophie Tyler (Senior Clinical Training Scholar in Dermatology at the University of Bristol) carried out this work investigating the use of flea products in the ‘Bristol Cats’ cohort and presented it at the British Small Animal Veterinary Association Congress (April, 2017). Sophie’s abstract will be available in the online Journal of Small Animal Practice soon.

### “Influence of living in a multi-cat household on health and behaviour in a cohort of UK cats”

Multi-cat households can be a contentious issue, with strong views expressed on both sides. With around 42 per cent of cats in the UK living in a multi-cat household, it is important to find out if living in a multi-cat household is a risk factor for diseases and behavioural issues. Using data provided by the first five questionnaires of the Bristol Cats Study we investigated whether living in a multi-cat household influenced the odds of having a cat bite abscess, being obese or behaving negatively towards their owner.

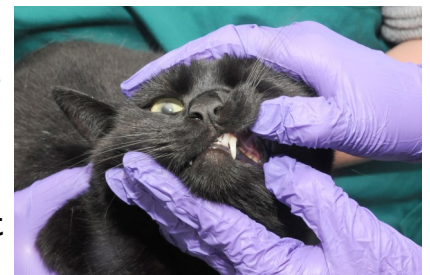
This study, based on Bristol Cats Study data, was completed by Claire Roberts (Zoetis feline scholar at the University of Bristol). Claire presented the results of her study at the British Small Animal Veterinary Association Congress in April this year, and the full paper will be submitted for publication soon. We’ll let you know when it is published and we are able to share the results with you.

### “The Bristol Cats Study—cohort profile”

As you may remember from our last newsletter, we recently submitted a manuscript describing the Bristol Cats Study design, the cats registered with the study, data being collected and questionnaire completion rates. We are delighted to announce that this has been accepted for publication by the International Journal of Epidemiology, and will let you know when it is available for us to share with you!

### “A prospective study of risk factors for feline gingivitis”

Jess Wilson has now completed her MSc on feline gingivitis, and is currently writing this up for publication. We will keep you updated and share the results with you once they are published. A big thank you again to all the owners (and cats!) who took part in the oral health assessment visits. We would also like to thank all the owners who have returned their vet-completed oral health cards. We hope to carry out additional research using the information from these cards in the future, so please keep returning your score cards!



Willow, owned by June Eckhart, at his oral health assessment last year



## 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:

<https://smvsfa.onlinesurveys.ac.uk/update>  
and following the instructions.

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

Tel/text: 07827 981412

Email: [cat-study@bristol.ac.uk](mailto:cat-study@bristol.ac.uk)

Freepost RSHR-AGRJ-UABZ

Bristol Cats, Dr Emily Blackwell

University of Bristol

Langford House, BRISTOL, BS40 5DU

## Some of our study cats!



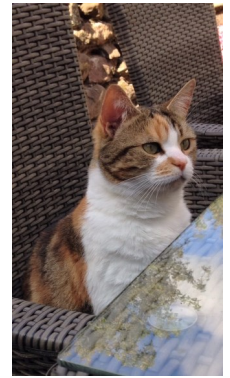
Rafa—owned by Olivia  
Hinkin



Luna—owned by Nicola  
Matthews



Tigger—owned by Jendy  
Weekes



Marge—owned  
by Sheila Evans

## 3rd party consent for clinical histories

Our research administrator Jess Wilson is continuing her work to gather clinical information about the 'Bristol Cats' from veterinary practices of owners who kindly provided consent for us access their veterinary records. WALTHAM<sup>®</sup>, who fund Jess's post, are keen to use anonymised data from the Bristol Cats study to advance their understanding of feline health and nutrition in a UK cat population.

A huge number of owners have very kindly given us permission to access their cats' veterinary records, and we would be very grateful if those who haven't already would also give us permission to share this data, once anonymised, with WALTHAM<sup>®</sup>. You can grant us this permission either online at (BOS survey link) or by contacting us to request a paper form. Your permission to share data is extremely helpful to the study as it will make it much easier for us to obtain future funding, which we need to maintain the study in the long-term.

**Thank you for your help — the Bristol Cat owners and cats are helping to make a difference to our knowledge of factors affecting feline welfare.**

**We would also like to thank Cats Protection for their funding towards the study, and WALTHAM<sup>®</sup> for funding Jess Wilson's post**

