



ISAZ VIRTUAL CONFERENCE

**One Health
One Welfare**

UNIVERSITY OF LIVERPOOL • ISAZ 2020

ABSTRACT BOOKLET



ISAZ VIRTUAL CONFERENCE
**One Health
One Welfare**
UNIVERSITY OF LIVERPOOL • ISAZ 2020

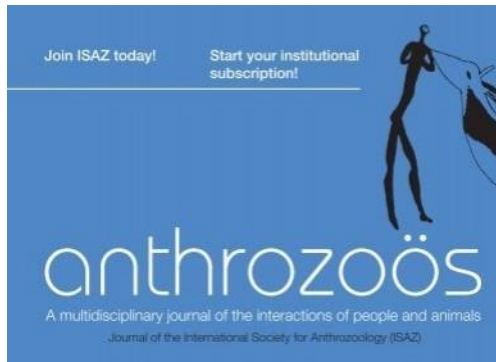


UNIVERSITY OF
LIVERPOOL



Anthrozoös - Multidisciplinary Journal of the Interactions of People and Animals

Official Journal of the International Society for Anthrozoology (ISAZ)



© International Society for Anthrozoology (ISSN: 0892-7936; e-ISSN: 1753-0377)

Published by Routledge Taylor & Francis Group

Anthrozoös is a bi-monthly, peer-reviewed publication whose focus is to report the results of studies, from a wide array of disciplines, on the interactions of people and animals. Academic disciplines represented include anthropology, archaeozoology, art and literature, education, ethology, history, human medicine, psychology, sociology and veterinary medicine.



ISAZ VIRTUAL CONFERENCE
**One Health
One Welfare**
UNIVERSITY OF LIVERPOOL · ISAZ 2020



Nourishing Pets. Enriching Lives.

At Purina, we are guided by the belief that pets and people are better together. We are a science-led company with more than 500 experts, including nutritionists, veterinarians and behaviorists, working every day to improve the lives of pets and the people who love them. After all, we've seen firsthand how powerful the bond with a pet can be.

LEARN MORE: [PURINA.COM](https://www.purina.com)

 **PURINA** Your Pet, Our Passion.



Opportunities in human-animal interaction, applied animal behaviour and data science coming soon

For more information contact us at contactwaltham@effem.com



ISAZ VIRTUAL CONFERENCE
**One Health
One Welfare**
UNIVERSITY OF LIVERPOOL • ISAZ 2020



CABI & ISAZ

Save 25% on CABI books until 31st October with code **CCISAZ20**

www.cabi.org/bookshop

Book offers

CABI & ISAZ



CABI is a global publisher producing key scientific publications, including world renowned databases, as well as compendia, books, eBooks and full text electronic resources, with a particular focus on animal and veterinary sciences and animal welfare.

Given this year's ISAZ theme, delegates may be particularly interested in [One Health](#) and [One Welfare](#), as well as [Tourism and Animal Welfare](#), and [The Elephant Tourism Business](#). You'll find more about our publishing programme, as well as our full range of titles, on the [CABI Bookshop](#).

Conference discount: ISAZ delegates save 25% on all CABI books when ordering direct online. Enter the code CCISAZ20 at the checkout to save.*

*Please note: Discount is valid on individual (non-trade) orders, up to a maximum of 10 copies, when placed at www.cabi.org/bookshop before the 31st October 2020.

5m & ISAZ



5mbooks.com is the Ecommerce store for 5m Publishing. Our books deal with a range of subjects in the agricultural, farming and animal science industry.

Agricultural and Scientific books,

Smallholders,

Industry Professionals,

Students,

Individuals with a passion for sustainable/outdoor living.

5mBooks.com is operated by 5m Enterprises Ltd, a world-leader in providing online information, news and analysis to the global agricultural and aquaculture sectors, attracting over half a million unique visitors per month to our websites.

ISAZ delegates save 20% on all 5M books when ordering direct online. Enter the code 5m20 at the checkout to save.

About the International Society for Anthrozoology

The International Society for Anthrozoology (ISAZ) was formed in 1991 as a supportive organization for the scientific and scholarly study of human-animal interactions. ISAZ is a non-profit, non-political organization with a worldwide, multi-disciplinary membership of students, scholars and interested professionals.

Our mission is to serve the growing community of scholars and scientists working in the field of Anthrozoology (the study of human-animal interactions and relationships) by supporting research, publishing and disseminating new insights and discoveries, and promoting the exchange of knowledge and expertise within the field.

To learn more, please explore our web site: www.isaz.net.

ISAZ2020 Theme

The theme for ISAZ 2020 is **‘One Health, One Welfare: Wellbeing for all in human-animal interactions’**. It is well recognised that the health and welfare of humans and animals are inextricably linked: from welfare-friendly farming and safe food production to positive interactions with our companion animals and sustainability of our natural world. In this conference we will explore the links between human and animal wellbeing across a wide variety of human-animal interactions. The 2020 theme will be of course complemented with topics representing the wider field of anthrozoology as well. Presentations include poster sessions, talks from international researchers, and several plenary speakers who are at the forefront of their fields. There will also be related satellite events available to attend (please see schedule page for more information).

Abstracts represent the information submitted by the corresponding author. Content has been checked for English, and on a few occasions corrected; not all submitted information was included. Appearance may have been changed for stylistic reasons.

© International Society for Anthrozoology



@ISAZOfficial



<https://www.facebook.com/ISAZOfficial/>

#ISAZ2020 #OneHealth #OneWelfare #Conservation #Anthrozoology

ISAZ Board 2020

PRESIDENT

Kristen Jacobson, PhD

University of Chicago, Department of Psychiatry & Behavioral Neuroscience, USA

PRESIDENT ELECT

Patricia Pendry, PhD

Washington State University, Department of Human Development, USA

RECENT PAST PRESIDENT (EX OFFICIO)

Cheryl A. Krause-Parello, PhD, RN, FAAN

Florida Atlantic University, USA

TREASURER

Megan Kiely Mueller, PhD

Tufts University, Cummings School of Veterinary Medicine, USA

TREASURER ELECT

Basilias Basin, PhD, RN

Oregon Health and Science University, School of Nursing, USA

SECRETARY FOR COMMUNICATIONS

Emma Grigg, PhD

University of California, Davis, School of Veterinary Medicine, Department of Population, Health & Reproduction, USA

SECRETARY FOR DEVELOPMENT

Sabrina Schuck, PhD

University of California, Irvine, School of Medicine, USA

PROGRAMS OFFICER

Lee Zasloff, PhD

Sierra College, Department of Psychology, USA

EDITOR, ANTHROZOÖS (ex officio)

Anthony Podberscek, PhD

University of Sydney, Faculty of Science, Australia

BOARD MEMBERS

Catherine Amiot, PhD

Université du Québec à Montréal, Department of Psychology, Canada

John-Tyler Binfet, PhD

The University of British Columbia, Okanagan School of Education, Canada

Matt Chin, PhD

University of Central Florida, Department of Psychology, USA

Erika Friedmann, PhD

University of Maryland, School of Nursing, USA

Brinda Jegatheesan, PhD, MEd

University of Washington, College of Education, Educational Psychology, USA

Maggie O'Haire, PhD

Purdue University, College of Veterinary Medicine, Center for the Human-Animal Bond, USA

Joanne Williams, PhD (co-opted)

University of Edinburgh, UK

Mariko Yamamoto, PhD

Teikyo University of Science, Department of Animal Sciences, Japan

STUDENT BOARD MEMBER

Kerri Rodriguez, PhD Candidate

Purdue University, College of Veterinary Medicine, Department of Comparative Pathobiology, USA

IAHAIO REPRESENTATIVE (ex-officio)

Marie-Jose Enders-Slegers, PhD

Open Universiteit Nederland, Netherlands

ADMINISTRATIVE MANAGER

Abigail Thigpen, BS

University of California, Davis, School of Veterinary Medicine, Department of Population, Health & Reproduction, USA



Contents

WELCOME TO THE 29 TH ANNUAL CONFERENCE OF THE INTERNATIONAL SOCIETY FOR ANTHROZOOLOGY	1
MESSAGE FROM THE PRESIDENT	2
ACKNOWLEDGEMENTS	3
LIVE CONFERENCE PROGRAM SUMMARY	4
LIVE CONFERENCE PROGRAM SCHEDULE.....	6
ORAL PRE-RECORDED PRESENTATIONS	11
ORAL FLASH PRE-RECORDED PRESENTATIONS.....	13
POSTER PRESENTATIONS	16
THANKS TO OUR SPONSORS	21
SOCIAL EVENT - 8:00 - 9:00PM - FRIDAY 4 TH SEPTEMBER	24
PLENARY SPEAKERS	25
ISAZ2020 STUDENT COMPETITION LIST	32
SATELLITE SEMINAR - 12:00 - 6:00PM TUESDAY 1ST SEPTEMBER	34
WORKSHOPS.....	40
CONFERENCE OPENING - 1:00 - 1:20PM THURSDAY, 3RD SEPTEMBER.....	46
ANIMALS AND PUBLIC HEALTH BENEFITS - 2:20 - 3:40PM THURSDAY, 3RD SEPTEMBER	46
ANIMALS IN OUR LIVES - 4:20 - 5:40PM THURSDAY, 3RD SEPTEMBER.....	70
ANIMAL AND PUBLIC HEALTH RISK (DOG BITES) - 6:00 - 6:40PM THURSDAY, 3RD SEPTEMBER	89
PLENARY - 1:00 - 1:50PM FRIDAY 4TH SEPTEMBER	96
ANIMALS AS STAKEHOLDERS - 2:00 - 3:40PM FRIDAY, 4TH SEPTEMBER	96
HUMAN-EQUINE INTERACTION - 4:20 - 5:40PM FRIDAY, 4TH SEPTEMBER	112
CAREERS IN ANTHROZOOLOGY PANEL DISCUSSION - 6:00 - 6:40PM FRIDAY, 4TH SEPTEMBER	133
ANIMAL WELFARE	134
PLENARY - 1:00 - 1:50PM SATURDAY 5TH SEPTEMBER	154
ANIMALS IN HISTORY - 2:00 - 2:40PM SATURDAY, 5TH SEPTEMBER.....	154
ANIMALS AND THE LAW	156
ANIMALS IN EDUCATION RESEARCH SYMPOSIUM - 3:40 - 5:00PM SATURDAY, 5TH SEPTEMBER	162
ANIMALS IN EDUCATION - 5:20 - 6:00PM SATURDAY, 5TH SEPTEMBER	164
AUTHOR INDEX.....	179

Welcome to the 29th Annual Conference of the International Society for Anthrozoology

We are extremely excited to present you with the ISAZ 2020 conference “One Health, One Welfare: wellbeing for all in human-animal interactions”! Due to have been held in person at the University of Liverpool, we hope that the online format will still provide plenty of opportunities for intellectual exchange, networking, and feeling inspired by new research. The conference theme has now taken on even greater significance, with Covid-19 challenging us to think deeper about creating healthier and more equitable ways for humans and animals to live together.

In addition to the usual oral and poster sessions, we have introduced a new ‘Flash’ presentation format, which we hope will work well online. We are delighted to offer Keynote Lectures from Dr Rise Van Fleet, Manoj Guatam, Prof Nicola Williams, and Prof Abigail Woods. With a mix of both pre-recorded and live-streamed events, and offerings of extra workshops and satellite events pre- and post- conference, our programme is larger than ever and sure to excite you all. It will all be recorded and available to watch at your leisure, so don’t worry if you have to miss anything due to time zone challenges!

Putting on a conference such as this (and re-organising it three times!) is a team effort, and we must extend our thanks to our scientific reviewers, volunteers, and the ISAZ Board helping us pull this together. Thank you also to all the new and returning delegates for joining us in on this new adventure!

Wishing you a productive and enjoyable conference, from the comfort of your home!

The ISAZ 2020 Local Organisers

Dr Carri Westgarth (Senior Lecturer, Human-Animal Interaction, University of Liverpool),

Dr Chris Pearson (Senior Lecturer, Twentieth Century History, University of Liverpool)

Dr Diahann Gallard (Senior Lecturer, School of Education, Liverpool John Moores University)



Message from the President

Greetings!

On behalf of the International Society for Anthrozoology, it is my pleasure to welcome you to the first virtual ISAZ conference, One Health, One Welfare. As of last Friday, we had more than 375 delegates registered from 40 different countries, making the 2020 conference the largest in ISAZ history. While a virtual conference is not what any of us would have hoped for at this time last year, it is really exciting to present the latest work in anthrozoology to a wider audience!

None of us had ever put together a virtual conference before, and, as you can imagine, it took a village to bring this all to you. I would like to start by acknowledging all of the help and support that made this conference possible. First, I need to recognize the extraordinary efforts of Carri Westgarth, our local conference organizer, her colleagues, Chris Pearson and Diahann Gallard, and their incredible team of student volunteers. Not only had Carri planned for a spectacular in-person event in Liverpool, after the COVID-19 crisis hit, she showed remarkable fortitude in leading efforts to organize the many complex logistics of the virtual format.

Second, I would like to acknowledge the hard work from the ISAZ Board in supporting this event, including our Programs Committee, chaired by Lee Zaslow, for helping with the scientific program, Sabrina Schuck, Patricia Pendry, and John-Tyler Binfet for their leadership in obtaining funds to support the conference, Matt Chin, for chairing the ISAZ Awards Committee, and Emma Grigg and Kerri Rodriguez for their creative use of social media to market this event. We are also exceptionally grateful to Abbey Thigpen, the ISAZ Administrative Manager, for her tireless work supporting all of the activities of our organization.

Third, I would like to thank this year's conference sponsors, Purina, our Silver Sponsor, Mars-Waltham, our Bronze Sponsor, and the Taylor-Francis Group, for their generous support. Our annual conference would not be possible without this support, and each of these organizations shares our vision of promoting the well-being of both humans and animals through dissemination of scholarly work in anthrozoology.

Please join us for the Opening remarks, where we will announce the winners of the ISAZ Early Career Award and our Student Travel Awards and introduce our newest ISAZ Fellow. At the Closing remarks, we will present the Anthrozoös Best Paper award and announce the winners of the 2020 conference competitions. We are also excited to offer our first Meet the Fellows mixer. This event offers the opportunity to hear from leaders in the field, including many of the founding members of ISAZ. Finally, we encourage all members to attend the Annual General Meeting to hear about our organization's activities. If you are not yet a member, we hope you will consider joining us soon.

Thank you for attending the 2020 conference and I hope to see you next year!

Kristen Jacobson, ISAZ President



A handwritten signature in blue ink that reads "Kristen Jacobson".

Acknowledgements

CONFERENCE COMMITTEE & SUPPORTERS

Professor Marie Fox, Queen Victoria Professor of Law, in the School of Law and Social Justice, University of Liverpool

Professor Daniel Mills, Specialist in Clinical Animal Behaviour, University of Lincoln

Professor Joanne Williams, Professor of Applied Development Psychology in Clinical and Health Psychology, University of Edinburgh

Dr Anne McBride, Senior Lecturer within Psychology, University of Southampton

Professor Rob Christley, Honorary Professor of Epidemiology and One Health, University of Liverpool

GRAPHIC DESIGN AND PROGRAM LAYOUT AND EDITING

Dr Lisa J Wallis and Rebecca Smith

We would like to thank the numerous individuals who volunteered their time to serve as an abstract reviewer for the 2020 conference.

We would like to thank the continued support of the University of Liverpool as well as the Board of Directors of the International Society for Anthrozoology. In addition, we thank the students in the Institute of Infection, Veterinary and Ecological Sciences at the University of Liverpool for their contributions and time in making the conference run smoothly.

OXFORD ABSTRACTS

We would also like to thank Oxford Abstracts for their support in transforming the conference to virtual, and Happening Events and KC Jones Events for their work on initial conference planning.



Live Conference Program Summary

Monday, 31st August

7:00 - 8:00pm BST Public presentation sponsored by Pets at Home: [Prof Clive Wynne](#) - What Makes Dogs Special?

Tuesday, 1st September

12:00 - 12.20pm Welcome to [Satellite Seminar](#) - Putting Animals at the Centre of Animal Assistance. Sponsored by ABTC and SCAS

12:20 - 1:10pm Plenary: [Dr Rise VanFleet](#) "Animal Consent and Wellbeing in Animal Assisted Interventions"

1:20 - 2:40pm Satellite Seminar - [Animals at the Centre of Animal Assistance Session 1](#)

3:20 - 5:00pm Satellite Seminar - [Animals at the Centre of Animal Assistance Session 2](#)

5:20 - 6:00pm Invited talk: [Pet Bereavement Counselling](#), Diane James, Blue Cross

7:00 - 8:00pm Public Performance sponsored by CHSSoHMT: [Matt Black](#) -The Snoopy Question

Wednesday, 2nd September

3:00 - 4:00pm Workshop: [Puppy trafficking](#)

7:00 - 9:00pm Workshop: [Writing about animals](#). Sponsored by CHSSoHMT

Thursday, 3rd September

11:00am - 12:00pm Workshop: [Defining the key terms in Animal Assisted Services](#)

1:00 - 1:20pm [Conference opening](#)

1:20 - 2:10pm Plenary: [Prof Nicola Williams](#) "The link between antimicrobial resistance in humans and animals"

2:20 - 3:40pm Oral live: [Animals and public health benefits](#)

4:20 - 5:40pm Oral live: [Animals in our lives](#)

6:00 - 6:40pm Oral live: [Animal and public health risk](#)

6:40 - 7:00pm Discussion breakout room

Friday, 4th September

11:00am - 12:00pm	Workshop: Human-wildlife interactions
12:40 - 1:00pm	Discussion breakout room
1:00 - 1:50pm	Plenary: Manoj Guatam "One Health One Welfare in Animal Conservation"
2:00 - 3:40pm	Oral live: Animals as stakeholders
4:20 - 5:40pm	Oral live: Human-equine interaction . Sponsored by The Donkey Sanctuary
5:40 - 6:00pm	NIH funding talk
6:00 - 6:40pm	Careers in Anthrozoology Panel Discussion
6:40 - 7:00pm	Discussion breakout room
8:00 - 9:00pm	Social event: Meet the Fellows

Saturday, 5th September

11:00am - 12:00pm	Workshop: Defining the key terms in animal-assisted services PART 2
12:40 - 1:00pm	Discussion breakout room
1:00 - 1:50pm	Plenary: Prof Abigail Woods "Intersections in histories of human and animal health". Sponsored by Humanimal Trust
2:00 - 2:40pm	Oral live: Animals in History
3:00 - 3:40pm	AGM
3:40 - 5:00pm	Animals in Education Research Symposium
5:20 - 6:00pm	Oral live: Animals in education
6:00 - 6:20pm	Awards and Conference Close
6:20 - 6:40pm	Breakout discussion
7:00 - 9:00pm	Workshop: Animals in Schools - Benefits, challenges, standards and best practices

Sunday, 6th September

2:00 - 6:00pm	Satellite Workshop: Human Behaviour Change for Animals - Designing interventions and measuring their impact (Sponsored by Cats Protection)
---------------	--

Live Conference Program Schedule

Monday, 31st August

Note: For the sake of brevity, just the lead author has been listed in the schedule. When using the digital copy, click on the surname to go straight to the abstract.

7:00 - 8:00pm BST **Public presentation** sponsored by Pets at Home: [Prof Clive Wynne](#) - What Makes Dogs Special? - Clive.Wynne@asu.edu

Tuesday, 1st September

12:00 - 12.20pm **Welcome to [Satellite Seminar](#)** - Putting Animals at the Centre of Animal Assistance. Sponsored by ABTC and SCAS

12:20 - 1:10pm **Plenary: [Dr Rise VanFleet](#)** "Animal Consent and Wellbeing in Animal Assisted Interventions" - Rise@risevanfleet.com

1:20 - 2:40pm **Satellite Seminar - [Animals at the Centre of Animal Assistance Session 1](#)**

237 Training what TO do: Utilising positive reinforcement in assistance dog training - [Michalyszyn](#) - Lucy.Michalyszyn@guidedogs.org.uk

238 What should an assessment protocol for dogs for therapeutic work look like? - [Mills](#) - dmills@liverpool.ac.uk

249 When should a dog be retired? - [Binfet](#) - johntyler.binfet@ubc.ca

3:20 - 5:00pm **Satellite Seminar - [Animals at the Centre of Animal Assistance Session 2](#)**

240 Considerations regarding owner-trained Assistance/Service dogs - [McBride](#) - amcb@soton.ac.uk

241 Safeguarding the welfare of animals used in educational and care settings - [Mendes Ferreira](#) - gilly.ferreira@scottishspca.org

242 Self-regulation and standard development in Animal Assistance; a brief review of some international initiatives - [Gorbing](#) - peter.gorbing@dogsforgood.org

179 Addressing Adverse Events in Animal-Assisted Interventions - [Ng](#) - zng@utk.edu

5:20 - 6:00pm **Invited talk: [Pet Bereavement Counselling](#)**, Diane James, Blue Cross - diane.james@Bluecross.org.uk

7:00 - 8:00pm **Public Performance** sponsored by CHSSoHMT: [Matt Black](#) -The Snoopy Question - matt.black@pop3.poptel.org.uk

Wednesday, 2nd September

3:00 - 4:00pm Workshop: [Puppy trafficking](#) - Campbell - kirsteen.campbell@scottishspca.org

7:00 - 9:00pm Workshop: [Writing about animals](#). Sponsored by CHSSoHMT

Thursday, 3rd September

11:00am - 12:00pm Workshop: [Defining the key terms in Animal Assisted Services](#) - Howell, Bennett - t.howell@latrobe.edu.au

1:00 - 1:20pm Conference opening

1:20 - 2:10pm Plenary: [Prof Nicola Williams](#) "The link between antimicrobial resistance in humans and animals" - njwillms@liverpool.ac.uk

2:20 - 3:40pm Oral live: [Animals and public health benefits](#)

132 Knowledge, practices and attitudes of healthcare professionals about pet ownership during cancer survivorship - [Lopes-Conceição - luisa.conceicao@ispup.up.pt](mailto:Lopes-Conceicao@ispup.up.pt)

190 Companion animals as stress buffer: an experience sampling study of the relationship between the presence of pets, stressful experiences and affect - Janssens - mayke.janssens@ou.nl

200 Service dogs for veterans with posttraumatic stress disorder: Dog characteristics and their relationship to symptom-severity outcomes - Jensen - jensen76@purdue.edu

70 The Effects of a Canine-Assisted Intervention on Occupational Therapy Graduate Students' Perceptions of Well-being: A Randomized Controlled Trial - Johnson - az5998@wayne.edu

4:20 - 5:40pm Oral live: [Animals in our lives](#)

219 Job Stressors and Coping Strategies in Austrian Vets (Vet-Study 2019) - Stetina - birgit.u.stetina@sfu.ac.at

85 Current Status of Instrument Development in the Field of Human-Animal Interactions - Samet - lauren.samet@dogstrust.org.uk

168 "You wouldn't ever be able to have them sleeping in your room, would you?" Companion animals, human rights in care homes and the concept of 'defensible space' - Fox - marie.fox@liverpool.ac.uk

218 Evaluation of Fostering Compassion: An animal welfare education intervention for children at high risk of cruelty to animals - Williams - jo.williams@ed.ac.uk

Thursday, 3rd September (Cont.)

6:00 - 6:40pm

Oral live: [Animal and public health risk](#)

230 Rise in dog bite admissions is driven by adult cases: a retrospective analysis of hospital episode data in England (1998 - 2018) - [Tulloch - jtulloch@liverpool.ac.uk](#)

177 Attributions for Dog Aggression: The Roles of Victim Aggression and Dog Breed - [Sims - valerie.sims@ucf.edu](#)

6:40 - 7:00pm

Discussion breakout room

Friday, 4th September

11:00am - 12:00pm

Workshop: [Human-wildlife interactions](#) - Melfi, Klinkenberg, Bearman-Brown, Doodson, Hutchinson - [vicky.melfi@hartpury.ac.uk](#)

12:40 - 1:00pm

Discussion breakout room

1:00 - 1:50pm

Plenary: [Manoj Guatam](#) "One Health One Welfare in Animal Conservation" - [scilab25@gmail.com](#)

2:00 - 3:40pm

Oral live: [Animals as stakeholders](#)

193 Attitudes to cat management in residents of a suburban Australian local council - [Hazel - susan.hazel@adelaide.edu.au](#)

216 When things go wrong: dog owners' perceptions of dog behaviour and training - [Furtado - tamzin.furtado@dogstrust.org.uk](#)

11 Exploring the potential of listening and silence in zoo visiting - [Rice - T.Rice@exeter.ac.uk](#)

53 In whose best interests? How routine neutering is discussed with owners of companion animals - [Gray - cagray008@me.com](#)

78 Choosing My Dog: understanding the sourcing of dogs using a large-scale study into acquisition behaviours - [Mead - Rebecca.Mead@dogstrust.org.uk](#)

4:20 - 5:40pm

Oral live: [Human-equine interaction](#). Sponsored by The Donkey Sanctuary

83 On the value of donkeys to northern Ghanaian schoolchildren - [Maggs - h.c.maggs@pgr.reading.ac.uk](#)

51 The impact of ageing: understanding decision making around care of the older horse - [Smith - rebecca.smith@liverpool.ac.uk](#)

30 Senegalese working equids - what is the real welfare problem? - [Chapman - alanachapman@worldhorsewelfare.org](#)

Friday, 4th September

- | | |
|---------------|--|
| 5:40 - 6:00pm | NIH funding talk - Funding opportunities for Human-Animal Interaction Research - Dr Layla Esposito, Eunice Kennedy Shriver National Institute of Child Health and Human Development - espositl@mail.nih.gov |
| 6:00 - 6:40pm | Careers in Anthrozoology Panel Discussion - Chair: Rodriguez. Panel members: Fine, Schuck, Casey |
| 6:40 - 7:00pm | Discussion breakout room |
| 8:00 - 9:00pm | Social event: Meet the Fellows |
-

Saturday, 5th September

- | | |
|-------------------|---|
| 11:00am - 12:00pm | Workshop: Defining the key terms in animal-assisted services PART 2 - Howell, Bennett - t.howell@latrobe.edu.au |
| 12:40 - 1:00pm | Discussion breakout room |
| 1:00 - 1:50pm | Plenary: Prof Abigail Woods "Intersections in histories of human and animal health". AWoods@lincoln.ac.uk Sponsored by Humanimal Trust |
| 2:00 - 2:40pm | <p>Oral live: Animals in History</p> <p>99 "Poor Dolly ... she also was suffering from shell-shock." The shared impact of warfare on soldiers and their horses in The Great War - Flynn - j.flynn.1916@gmail.com</p> <p>19 "Civil Rats": Animals, Race, and the U.S. Rat Extermination Act of 1967 - Aiello - ta424@exeter.ac.uk</p> |
| 3:00 - 3:40pm | AGM |
| 3:40 - 5:00pm | <p>Animals in Education Research Symposium</p> <p>100 Educational Anthrozoology in the classroom: Roles, risks and regulations - Gallard - d.c.gallard@ljmu.ac.uk</p> <p>144 Dog-assisted interventions with children in mainstream and special educational needs schools - what works? - Meints - kmeints@lincoln.ac.uk</p> |
| 5:20 - 6:00pm | <p>Oral live: Animals in education</p> <p>114 The status, purpose, and welfare of animals on college campuses - Lanning - Beth_Lanning@baylor.edu</p> <p>69 "What do we want?" "Therapy Dogs!" "When do we want them?" "Now!": A survey of student motives to attend therapy dog events, and the appetite for future events on a North American University Campus - South - csouth@sfu.ca</p> |
-

Saturday, 5th September (Cont.)

6:00 - 6:20pm Awards and Conference Close

6:20 - 6:40pm Breakout discussion

7:00 - 9:00pm Workshop: [Animals in Schools](#) - Benefits, challenges, standards and best practices -Meints - kmeints@lincoln.ac.uk

Sunday, 6th September

2:00 - 6:00pm Satellite Workshop: [Human Behaviour Change for Animals](#) - Designing interventions and measuring their impact (Sponsored by Cats Protection)

Oral Pre-recorded Presentations

Animals and public health benefits

-
- 21 Expectations versus Experiences of Veterans with PTSD Service Dogs: A Qualitative Analysis - [Nieforth - lniefert@purdue.edu](mailto:Nieforth@purdue.edu)
-
- 31 Defining the PTSD service dog intervention: Perceived importance, task use, and symptom specificity of psychiatric service dogs for military veterans with PTSD - [Rodriguez - rodri403@purdue.edu](mailto:Rodriguez@purdue.edu)
-
- 44 Animal-assisted placebo-induced analgesia: A randomized controlled trial in healthy participants - [Wagner - cora.wagner@unibas.ch](mailto:Wagner@unibas.ch)
-
- 105 The association between dog-owner relationship and mental well-being: a cross-sectional study - [Merkouri - hlamerko@liverpool.ac.uk](mailto:Merkouri@liverpool.ac.uk)
-
- 111 Minority stress, human-animal interaction, and resilience in LBGTQ+ young adults: Testing a mediation model - [Matijczak - matijczaka@vcu.edu](mailto:Matijczak@vcu.edu)
-

Animal and public health risk

-
- 9 Exposure to intimate partner violence and internalizing symptoms: The moderating effects of positive relationships with pets and animal cruelty exposure - [Hawkins - roxanne.hawkins@uws.ac.uk](mailto:Hawkins@uws.ac.uk)
-
- 93 A qualitative study of perception and prevention of dog bites: a novel approach to an old problem - [Owczarczak-Garstecka - owczarcz@liverpool.ac.uk](mailto:Owczarczak-Garstecka@liverpool.ac.uk)
-

Animals as stakeholders

-
- 52 The features of a successful therapy dog: a Delphi study - [Filugelli - lfilugelli@izsvenezie.it](mailto:Filugelli@izsvenezie.it)
-
- 120 Implicit Attitudes Toward Animals as Food: The Roles of Sex and Diet - [Sims - valerie.sims@ucf.edu](mailto:Sims@ucf.edu)
-
- 167 Natural Connections: Exploring the Role of Engagement in Outdoor Activities and Technology Use on Children's Moral Concern for Wild Animals and Ecosystems - [Maynard - am18se@brocku.ca](mailto:Maynard@brocku.ca)
-
- 170 The Albatross and Roaring Sea: The Struggles with Power in J.M. Coetzee's The Lives of Animals - [Ngoi - en19hcn@leeds.ac.uk](mailto:Ngoi@leeds.ac.uk)
-
- 188 Cross-species tragedy and trauma in Australian bushfires 2005 - 2020. Changing discourses - [Young - janette.young@unisa.edu.au](mailto:Young@unisa.edu.au)
-

Human-equine interaction

- 29 Cultural ‘blind spots,’ social influence and the welfare of working equids in brick kilns in northern India - [Watson - tamlin.watson@thedonkeysanctuary.org.uk](mailto:tamlin.watson@thedonkeysanctuary.org.uk)
-
- 34 Horse Cents for Kids: Exploring the role of participation in an after-school horsemanship program on children’s wellbeing and belief in animal minds - [Tardif-Williams - ctardif@brocku.ca](mailto:ctardif@brocku.ca)
-
- 68 Learning with donkeys: a ‘more-than-human’ approach to animal assisted activities - [Clancy - cara.clancy@thedonkeysanctuary.org.uk](mailto:cara.clancy@thedonkeysanctuary.org.uk)
-

Animal welfare

- 197 Animal cruelty and neglect in Victoria, Australia: prevalence, reporting, and community attitudes - [Glanville - cglanville@student.unimelb.edu.au](mailto:cglanville@student.unimelb.edu.au)
-
- 32 How owner expectations and perspectives influence peoples’ training methodology of companion dogs in Aotearoa New Zealand - [Jones - erin.jones@pg.canterbury.ac.nz](mailto:erin.jones@pg.canterbury.ac.nz)
-
- 64 Post adoption support - why do owners decline behavioural advice for canine problem behaviours? - [Buckland - emma.buckland@dogstrust.org.uk](mailto:emma.buckland@dogstrust.org.uk)
-
- 76 “Don’t bring me a dog...I’ll just keep it”: Understanding unplanned dog acquisitions - [Holland - katrina.holland@dogstrust.org.uk](mailto:katrina.holland@dogstrust.org.uk)
-
- 89 Companions looking for a forever home: portraying rescue dogs online - [Schuurman - nora.schuurman@utu.fi](mailto:nora.schuurman@utu.fi)
-
- 153 “What would you do if it was your cat?”. The Autonomy Principle in Veterinary Ethics - [Hiestand - k.hiestand@sussex.ac.uk](mailto:k.hiestand@sussex.ac.uk)
-

Animals and the law

- 161 ‘Rescue is a minefield’: Legally Constituting the Companion Animal Adoption Agreement - [Singh - sarah.singh@liverpool.ac.uk](mailto:sarah.singh@liverpool.ac.uk)
-
- 48 Uncovering the views of law enforcement personnel who participated in a canine assisted-intervention: A case study - [Green - freya.green@ubc.ca](mailto:freya.green@ubc.ca)
-

Animals in education

- 41 A case study exploring children’s experience participating in a canine-assisted social-emotional learning program - [Harris](#)
-
- 117 Randomized controlled trial examining effects of varying levels of Human Canine Interaction on college students’ diurnal cortisol - [Pendry - ppendry@wsu.edu](mailto:ppendry@wsu.edu)
-

Oral Flash Pre-recorded Presentations

Animals and public health benefits

- 8 Promoting Client Wellness in Animal-Assisted Counseling through Measurable Standards - [Hartwig - ekk6@txstate.edu](mailto:ekk6@txstate.edu)
-
- 71 How is One Health Represented in the Research Literature of Human-Animal Interactions? A Content Analysis - [Yatcilla - janeyat@purdue.edu](mailto:janeyat@purdue.edu)
-
- 98 Benefits of Emotional Support Animals: An Evaluation of the Hope and Recovery Pet (HARP) Program - [Hoy-Gerlach - janet.hoy@utoledo.edu](mailto:janet.hoy@utoledo.edu)
-
- 101 Effect of the presence and contact of a dog on the neuronal activity of healthy persons - [Marti - r.marti@unibas.ch](mailto:r.marti@unibas.ch)
-
- 107 Preliminary findings from the Pets for Life as One Health Study - [Morris - kevin.morris@du.edu](mailto:kevin.morris@du.edu)
-
- 194 The potential of dog-assisted therapy in neurorehabilitation of children with severe neurological impairment: an explorative study - [Hediger - karin.hediger@unibas.ch](mailto:karin.hediger@unibas.ch)
-
- 116 Chasing the pet effect: How the history of psychotherapy outcome research informs our understanding of the generative effects of the human-animal bond - [Blazina - chrisblazinaphd@hotmail.com](mailto:chrisblazinaphd@hotmail.com)
-

Animals in our lives

- 50 Valuing canine handlers' perspectives: Experiences and motivations for volunteering in canine-assisted interventions - [Binfet - johntyler.binfet@ubc.ca](mailto:johntyler.binfet@ubc.ca)
-
- 16 Human personalities affect the lead tension while walking dogs on leash - [Shih - haoyu.shih@uqconnect.edu.au](mailto:haoyu.shih@uqconnect.edu.au)
-
- 77 Do owners' attachments to their dogs and perceptions of dog intelligence differ by dog-keeping style? - [Yamamoto - mariko_yamamoto@hotmail.co.jp](mailto:mariko_yamamoto@hotmail.co.jp)
-
- 166 Conundrums of Care: Greyhounds, caregivers and greyhound protection within 'the greyhound imaginary' - [Sands - klh230@exeter.ac.uk](mailto:klh230@exeter.ac.uk)
-

Animal and public health risk

- 123 An Exploratory Study: The Bereavement Experience Following the Death of a Companion Animal - [Teo - celesteteo11@gmail.com](mailto:celesteteo11@gmail.com)
-

Animals as stakeholders

- 119 Hispanic Attitudes Toward Vegetarianism: The Effects of Generation - [Sims - valerie.sims@ucf.edu](mailto:valerie.sims@ucf.edu)
-
- 214 An assessment of wildlife consumption, resource use, and attitudes to conservation of Batu Putih village and the impacts to Tangkoko Nature Reserve, North Sulawesi, Indonesia, with proposed conservation-development initiatives - [Sampson - sampsonhels@yahoo.com](mailto:sampsonhels@yahoo.com)
-

Human-equine interaction

- 215 Dumb ass? Linguistic representations of donkeys in UK popular media and the implications for welfare - [McClaughlin - e.mcclaughlin@gmail.com](mailto:e.mcclaughlin@gmail.com)
-
- 65 Identifying learning needs for working equine harness improvement - [Brown - ashleigh@thebrooke.org](mailto:ashleigh@thebrooke.org)
-
- 146 Proximity and Time as Shared Bonding Strategies for Horses and Humans: A Mixed-Methods Study on Interspecies Social Bonding - [Kieson - ekieson@gmail.com](mailto:ekieson@gmail.com)
-
- 150 Qualitative evaluation of the impact of the IFEEL Method of Equine Facilitated Psychotraumatology (EFPT) intervention on military veterans - [Williams - Jane.williams@hartpury.ac.uk](mailto:Jane.williams@hartpury.ac.uk)
-
- 152 At-Risk Youth and Equine Assisted Activities: Effects on Self-Awareness, Confidence, Trust, Mental Health, Friendships and Understanding Emotions - [Stephen - jbs2@hw.ac.uk](mailto:jbs2@hw.ac.uk)
-

Animal welfare

- 23 Unique New York: Examining the impact of breed labels, phenotypic variations, and geography on length of stay in a multi-location New York limited intake animal shelter - [Passmore - nicole.passmore40@myhunter.cuny.edu](mailto:nicole.passmore40@myhunter.cuny.edu)
-
- 80 The effects of different genres of music on the stress levels of kennelled dogs - [Evans - Neil.Evans@glasgow.ac.uk](mailto:Neil.Evans@glasgow.ac.uk)
-
- 84 Neutering decisions of owners of 12-month old dogs in the Generation Pup cohort study - [Da Costa - rosa.dacosta@dogstrust.org.uk](mailto:rosa.dacosta@dogstrust.org.uk)
-
- 155 Dog training cultures and perceptions of welfare - [Charles - nickie.charles@warwick.ac.uk](mailto:nickie.charles@warwick.ac.uk)
-
- 17 In or Out? Social discourses surrounding with free-roaming cats in urban communities - [Hill - kh458@exeter.ac.uk](mailto:kh458@exeter.ac.uk)
-

Animals in education

- 136 Cat on Campus? The Pros and Cons of Bringing an Employee-Owned Cat to University in Light of Human Well-Being and Animal Welfare - [Delanoeije - joni.delanoeije@kuleuven.be](mailto:joni.delanoeije@kuleuven.be)
-
- 164 Randomized Trial Examining Effects of Animal Assisted Intervention and Stress Related Symptoms on College Students' Learning and Study Skills - [Carr - Alexa_Carr@wsu.edu](mailto:Alexa_Carr@wsu.edu)
-
- 126 The outcome of a single canine welfare workshop to primary age UK learners varies with proportion receiving free school meals - [Anderson - Katharine.Anderson@dogstrust.org.uk](mailto:Katharine.Anderson@dogstrust.org.uk)
-



Poster Presentations

Animals and public health benefits

-
- 1 Dogs as the New Medicine? Facebook's roles within the emotional support dog community and its effect on the rise in popularity of emotional support dogs - [Warda - tw445@exeter.ac.uk](mailto:tw445@exeter.ac.uk)
-
- 4 Gone to the dogs: Pet dogs in the sleep environment of patients with chronic pain - [Brown - cary.brown@ualberta.ca](mailto:cary.brown@ualberta.ca)
-
- 39 Emotional Reliance on Pets: Effects of Mental Health Stigma, Mental Illness Diagnosis, and Consideration of Relationship Quality Amongst a National Sample of U.S. Pet Owners - [Applebaum - jennyapplebaum@ufl.edu](mailto:jennyapplebaum@ufl.edu)
-
- 40 Effect of Pet Interaction on Stress Reduction and Positive Mood Enhancement among Pet-Owners and Non-Owners - [Khalid - aliya.khalid@iqraisb.edu.pk](mailto:aliya.khalid@iqraisb.edu.pk)
-
- 47 Service Dogs as Stress Relievers? - Interdependent Dog Companionship and Its Impact on the Assessment of Stressful Situations - [Krouzecky - christine.krouzecky@sfu.ac.at](mailto:christine.krouzecky@sfu.ac.at)
-
- 88 The impact of animal assisted interventions on psychosocial and behavioural functioning of children and young people with Attention Deficit Hyperactivity Disorder (ADHD): A systematic review - [Iqbal - U.Iqbal@sms.ed.ac.uk](mailto:U.Iqbal@sms.ed.ac.uk)
-
- 90 Effects of contact with a therapy dog on social anxiety in adolescents - [King - Erin.king@tufts.edu](mailto:Erin.king@tufts.edu)
-
- 94 Including therapy dogs in behavior and developmental treatments - [Hüsgen - c.husgen@hulphond.nl](mailto:c.husgen@hulphond.nl)
-
- 145 Promoting Health and Well-being for Humans, Animals, and Environment: The Role of the Social Sciences in the Promotion of Sustainable Development - [Brandes - hago.bb@gmail.com](mailto:hago.bb@gmail.com)
-
- 203 Role of the Human-Animal Bond Between Facility Dogs and Pediatric Healthcare Professionals - [Jensen - jensen76@purdue.edu](mailto:jensen76@purdue.edu)
-
- 207 The physiological effect of dog-walking on oxytocin secretion in owners and dogs - [Akiyama - j_akiyama@yamazaki.ac.jp](mailto:j_akiyama@yamazaki.ac.jp)
-

Animals in our lives

-
- 2 Preliminary findings of a scale assessing the commitment of low-income owners to their companion animals - [Rauktis - mar104@pitt.edu](mailto:mar104@pitt.edu)
-
- 33 Decoding a Social Identity: Implication, Ambiguity, and Complications of "Cat Lady" - [Edney - jenna.e.edney@gmail.com](mailto:jenna.e.edney@gmail.com)
-

-
- 49 When it comes to animals - What are scholars publishing about?: A bibliometric analysis of publications across three HAI journals - [Rousseau - c.rousseau@alumni.ubc.ca](mailto:c.rousseau@alumni.ubc.ca)
-
- 67 What do we know about human-animal co-sleeping? A review of the practice and implications - [Hoffman - hoffmanc@canisius.edu](mailto:hoffmanc@canisius.edu)
-
- 110 Assessment of attachment to pets among LGBTQ+ young adults: Evaluation of the Pet Attachment and Life Impact Scale - [Matijczak - matijczaka@vcu.edu](mailto:matijczaka@vcu.edu)
-
- 112 Psychometric testing of the Comfort from Companion Animals Scale in a sample of LGBTQ+ young adults: A graded-response model - [Tomlinson - tomlinsonc2@vcu.edu](mailto:tomlinsonc2@vcu.edu)
-
- 121 A Qualitative Analysis of Pet Names for Older and Younger Cats and Dogs - [Mata Guidi - adricmata@knights.ucf.edu](mailto:adricmata@knights.ucf.edu)
-
- 124 Could a biomimetic robot replace therapy dogs in “Animal” Assisted Interventions? - [Barber - Olivia.barber@port.ac.uk](mailto:Olivia.barber@port.ac.uk)
-
- 139 Is it different to have a dog or a cat in the measurement of the human-animal bond? - A Differential Item Functioning Analysis - [Lopes-Conceição - luisa.conceicao@ispup.up.pt](mailto:luisa.conceicao@ispup.up.pt)
-
- 142 General and specific factors of Pet Attitude Scale Modified - [Lopes-Conceição - luisa.conceicao@ispup.up.pt](mailto:luisa.conceicao@ispup.up.pt)
-
- 198 Attachment styles in the relationship between pet dogs and their caregivers: analysis of dog behaviour through structured and holistic evaluations - [Mariti - chiara.mariti@unipi.it](mailto:chiara.mariti@unipi.it)
-
- 226 Safari Adventure: A comparison study of the effects of Animal Assisted Activity (AAA) on social interaction for children with Autism Spectrum Disorder (ASD) - [Chestnutt - susan_chestnutt1994@hotmail.com](mailto:susan_chestnutt1994@hotmail.com)
-
- 209 Exploring patterns of cat-ownership in France - [Bowen - jbowen@rvc.ac.uk](mailto:jbowen@rvc.ac.uk)
-

Animal and public health risk

- 96 Dog Bite Rates as a Measure of Community and Canine Health and Welfare - [Rowan - arowan@wellbeingintl.org](mailto:arowan@wellbeingintl.org)
-
- 221 A comprehensive approach for human and animal violence, using the One Health, One Welfare framework - [Cefrorella - carocefro@gmail.com](mailto:carocefro@gmail.com)
-

Animals as stakeholders

- 115 A Transdisciplinary Perspective on Dog-Handler-Client Interactions in Animal Assisted Activities - [Roma - renata.psroma@gmail.com](mailto:renata.psroma@gmail.com)
-

-
- 129 Exploring customers' animal welfare perspectives and attitude toward the use of antimicrobials in livestock farming - [Chun - jdchun@snu.ac.kr](mailto:jdchun@snu.ac.kr)
-
- 180 Is it food or not? Mental representation of Tofu in Hispanic population - [Chin - matthew.chin@ucf.edu](mailto:matthew.chin@ucf.edu)
-
- 189 Domestication or Conservation: Feeding Cranes, Crane Observatory and Affordance between humans and animals in DMZ - [Joo - arabyjoo@gmail.com](mailto:arabyjoo@gmail.com)
-
- 211 Environmental education and its effect on knowledge, attitudes and empathy towards Sulawesi crested black macaques (*Macaca nigra*) in North Sulawesi - [van Wessen - Christavan.Wessen@wildplanettrust.org.uk](mailto:Christavan.Wessen@wildplanettrust.org.uk)
-

Human-equine interaction

-
- 3 The Relationship Between Owner Attitude and Working Equid Welfare Across Cultures - [Haddy - emily.haddy@port.ac.uk](mailto:emily.haddy@port.ac.uk)
-
- 28 Working equids in agriculture - does the invisibility of their role influence the care they receive? - [Newton - vickinewton@worldhorsewelfare.org](mailto:vickinewton@worldhorsewelfare.org)
-
- 59 Using Motivational Interviewing for behaviour change in equine owners who are, or at risk of, equine animal hoarding: a report on a training programme for UK Equine Welfare Officers - [Williams - bronwen.williams@yahoo.com](mailto:bronwen.williams@yahoo.com)
-
- 60 Using visual imagery to assess UK public opinion on donkeys and human-donkey relations in the context of Animal-Assisted-Activities (AAA) - [Perry - andrew.perry@thedonkeysanctuary.org.uk](mailto:perry@thedonkeysanctuary.org.uk)
-
- 118 Building Bridges: Community Partnerships for Child Victims and Witnesses of Domestic Violence - [Atherton - athertonw@ecu.edu](mailto:athertonw@ecu.edu)
-
- 154 One Health (OH) and One Welfare (OW): Are they considered in professional careers in equine therapy? - [Cefrorella - carocefro@gmail.com](mailto:carocefro@gmail.com)
-
- 157 Quantitative evaluation of the impact of the IFEEL Method of Equine Facilitated Psychotraumatology (EFPT) intervention using the Clinical Outcome in Routine Evaluation Outcome Measure (CORE-OM) - [Williams - jane.williams@hartpury.ac.uk](mailto:jane.williams@hartpury.ac.uk)
-
- 158 Can equine-assisted activities benefit people living with dementia: Two case study examples - [Rood - a.rood@blueyonder.co.uk](mailto:a.rood@blueyonder.co.uk)
-
- 160 Potential use of heart rate measurement for matching horse and coachee in equine coaching - [Visser - k.visser@aeres.nl](mailto:k.visser@aeres.nl)
-
- 175 Special with horses. A case study of Equine Assisted Pedagogy for two adolescents with multiple challenges - [Hansen - tia@hum.aau.dk](mailto:tia@hum.aau.dk)
-

-
- 213 An application of the One Welfare approach to donkeys in the Brazilian Northeast - [Bombo Perozzi Gameiro](mailto:marianaperozzi@gmail.com) - marianaperozzi@gmail.com
-

Animal welfare

- 36 The impact of TTVARM on the free-roaming cat demography in the tourist area in Japan - [Tanida](mailto:htanida@hiroshima-u.ac.jp) - htanida@hiroshima-u.ac.jp
-
- 66 To Cut A Long Tail Short: Owner Reported Tail Docking in a Cohort of English Puppies - [Kinsman](mailto:rachel.kinsman@dogstrust.org.uk) - rachel.kinsman@dogstrust.org.uk
-
- 91 Disobedient or mischievous? Qualitative analysis of dog owners' attributions of dog behaviours in the Generation Pup longitudinal study - [Owczarczak-Garstecka](mailto:sara.owczarczak-garstecka@dogstrust.org.uk) - sara.owczarczak-garstecka@dogstrust.org.uk
-
- 130 Recent increase in new type of free ranging dogs in Japan-their survival strategy - [Kakinuma](mailto:kakinuma-miki@nvl.u.ac.jp) - kakinuma-miki@nvl.u.ac.jp
-
- 147 Fur Babies: Ought Veterinary Surgeons Be Paediatricians or Mechanics? - [Hiestand](mailto:k.hiestand@sussex.ac.uk) - k.hiestand@sussex.ac.uk
-
- 163 Like A Lamb To The Slaughter: Assessing Opportunities For Livestock Worrying By Dogs - [Spence](mailto:C.Spence@gmul.ac.uk) - C.Spence@gmul.ac.uk
-
- 178 Stress Behavior and Physiological Effects of Participation in Trauma Focused - Cognitive Behavioral Therapy (TF-CBT) on Service-Trained Dogs - [Dreschel](mailto:nad5@psu.edu) - nad5@psu.edu
-
- 187 Benchmarking of online ads for dogs in Australia - [Hazel](mailto:susan.hazel@adelaide.edu.au) - susan.hazel@adelaide.edu.au
-
- 191 Management of separation anxiety in dogs varies according to the training style of dog trainers - [Hazel](mailto:susan.hazel@adelaide.edu.au) - susan.hazel@adelaide.edu.au
-
- 196 Inhibition and Working Memory in 7.5 week old Guide Dog Puppies - [Foraita](mailto:m.foraita@latrobe.edu.au) - m.foraita@latrobe.edu.au
-
- 201 Gender differences in the perception of zoo canid welfare by zookeepers - [Riggio](mailto:giacomoriggio@gmail.com) - giacomoriggio@gmail.com
-
- 204 Monitoring and evaluation of dog management programs across India - [Kartal](mailto:tkartal@hsi.org) - tkartal@hsi.org
-

Animals and the Law

- 42 Human Health, Animal Health and Animal Welfare in the EU: an unworkable relationship - [Lercier](mailto:lercier.marine@gmail.com) - lercier.marine@gmail.com
-

143 Social Farming and Animal Assisted Interventions: content analysis of the Italian legal framework towards a One Welfare approach - [Galardi - mgalardi@izsvenezie.it](#)

149 From Collector to Captor: The Theoretical Crime of Animal Hoarding - [Lewis - hsclewi3@liverpool.ac.uk](#)

169 Knowledge of Irish dog-ownership legal requirements: Are dog owners different from non-dog owners? - [Keogh - laura.keogh1@ucdconnect.ie](#)

Animals in education

37 Educational effect on awareness of animal welfare of a hands-on course on food and agriculture - [Koba - yukikoba@ntu.ac.jp](#)

56 Effects of dog assisted activity on the self-esteem and depressive symptomatology of 9 to 11 year old elementary students in Greece - [Diamantakos - vdiamantakos@gmail.com](#)

58 Interaction of a pupil with ASD with a teacher and a trained dog - [Vainio - iris.vainio@helsinki.fi](#)

86 The Impact of Animal-Assisted Learning on Emotional Wellbeing and Reading in Children - [Steel - Jill.steel@ed.ac.uk](#)

97 Assessment of veterinary student confidence and competence in developing client-patient centered care plans in a community clinic - [King - erin.king@tufts.edu](#)

128 Animals in textbook: how Japanese view of life and death is taught in elementary school - [Taguchi - pkun.nvlu@gmail.com](#)

151 The Impact of Animal-Assisted Interventions on the Mental Health and Stress of University Students: A Systematic Review - [Bradfield - j.bradfield@sms.ed.ac.uk](#)

165 The Effect of Dog Assisted Activities and Visitation Programmes on Wellbeing, Mood and Anxiety of University Students - [Grajfoner - d@grajfoner.com](#)

223 Therapy Dog as a Distraction from Work? Evaluation of Noncontingent Access to a Therapy Dog during ABA-Based Academic Sessions in Children with Autism Spectrum Disorder - [Protopopova - a.protopopova@ubc.ca](#)

224 Teaching One-Health in an HAI Curriculum: Challenges and Benefits - [Fasenko - gfasenko@nmsu.edu](#)

Thanks to our sponsors

Many thanks to our conference sponsors, without whom, academic events and societies could not function.

Silver Sponsor **Purina**

Nestlé Purina PetCare creates richer lives for pets and the people who love them. Founded in 1894, Purina has helped dogs and cats live longer, healthier lives by offering scientifically based nutritional innovations. More than 500 Purina scientists, veterinarians, and pet care experts ensure our commitment to unsurpassed quality and nutrition.

Purina promotes responsible pet care through scientific research, products and its support for pet-related organizations. Over the past five years, Purina has contributed more than \$150 million towards organizations that bring, and keep, people and pets together, as well as those that help communities and the environment thrive.



Your Pet, Our Passion.®

Bronze Sponsor **Mars Petcare and WALTHAM Petcare Science Institute**

Mars Petcare works to improve the lives of the world's 400 million pets across the spectrum from nutrition (PEDIGREE®, WHISKAS®, ROYAL CANIN®) to high-quality medical care (BANFIELD® Pet Hospitals, VCA®, AniCura). For over 50 years, WALTHAM Petcare Science Institute has led breakthrough research in nutrition and preventive health to advance pet wellness and deliver our Purpose: A BETTER WORLD FOR PETS™.



Our Conference Sponsor **Taylor and Francis**

Taylor & Francis partners with world-class authors, from leading scientists and researchers, to scholars and professionals operating at the top of their fields. Together, we publish in all areas of the Humanities, Social Sciences, Behavioural Sciences, Science, Technology and Medicine sectors. We are one of the world's leading publishers of scholarly journals, books, eBooks, text books and reference works. Taylor & Francis is one of the world's largest publishers of open access research. We publish over 180 high-quality full open access journals, ranging across disciplines and subject areas.

Taylor & Francis Group publishes more than 2,700 journals and over 5,000 new books each year, with a books backlist in excess of 120,000 specialist titles. We are providers of quality information and knowledge that enable our customers to perform their jobs efficiently, enhance their education, and help contribute to the advancement of their chosen market sectors.

Taylor & Francis Group is part of Informa PLC which operates at the heart of the Knowledge and Information Economy. It is one of the world's leading business intelligence, academic publishing, knowledge and events businesses.



Additional Conference Sponsors



The Pets at Home Group plc, includes Pets at Home, Vets4Pets, The Groom Room and Specialist veterinary referral centres. Together, we are the UK's leading pet care business, providing pet owners with everything they need to be able to look after their pets.



The Centre brings together developments across the arts, critical scholarship and engagement with various publics to enhance understandings of medical, (bio)scientific and technical practice. It provides a home for medical humanities at the University of Liverpool and incorporates innovations in broader science-art collaborations, including technological development and the environmental humanities.



The Animal Behaviour Council was formed to promote humane practice in the training and behaviour therapy of animals and to lobby for improvements in animal welfare related to behaviour and training.



SCAS was established in 1979 to promote the study of human-companion animal interactions and raise awareness of the importance of pets in society. SCAS has established itself as the leading human-companion animal bond organisation in the UK through providing education, raising awareness, encouraging best practice and influencing the development of policies and practices that support the human-companion animal bond.



The Donkey Sanctuary aims to transform the quality of life for donkeys, mules and people worldwide through greater understanding, collaboration and support, and by promoting lasting, mutually life-enhancing relationships.



'Humanimal Trust drives collaboration between vets, doctors and researchers so that all humans and animals benefit from equal and sustainable medical progress, but not at the expense of an animal's life. This is One Medicine.'



The Cats Protection vision is a world where every cat is treated with kindness and an understanding of its needs. Its objectives are to find good homes for cats in need, support and encourage the neutering of cats, and improve people's understanding of their care. Their new strategy acknowledges that cat welfare education and information for adults and children will be essential to achieving their vision.

Social Event - 8:00 - 9:00pm - Friday 4th September

Meet the Fellows Event!

Curious to hear from the international leaders in the field of Anthrozoology?

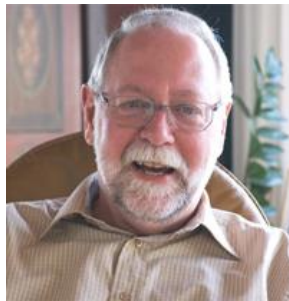
Join us to chat with the ISAZ Fellows! The ISAZ Fellows are elected members of the society whose work advances the field of Anthrozoology by enriching understanding of critical issues, addressing familiar problems or identifying a problem that has not been previously recognized.

In this online event, you will have the opportunity to meet and ask questions to many of our Fellows, as well as other delegates. And also discover who is our new 2020 Fellow!

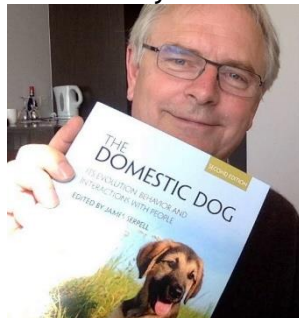


Pauline Bennett
La Trobe University

Dennis Turner,
University of Zurich



James Serpell,
University of
Pennsylvania



Sandra Barker, Virginia
Commonwealth
University



Marie-Jose Enders-
Sleger, Open
University Heerlen



Erika Friedmann,
University of
Maryland



Hal Herzog, Western
Carolina University



Lynnette Hart,
University of
California Davis



Ben Hart, University
of California Davis



Plenary Speakers

Public presentation sponsored by
Pets at Home: Professor Clive
Wynne, Arizona State University,
USA - Clive.Wynne@asu.edu



PROF CLIVE WYNNE


"What makes
dogs special?"

#ISAZ2020 #ISAZ2020

For years now scientists have been trying to prove that dogs are smart. Dogs go where people point. They sniff out explosives. One or two dogs can even understand hundreds of spoken words. But the truth is - The secret to dogs' success isn't their intelligence, it's their ability to make friends. Dogs have an unprecedented - in fact quite abnormal - enthusiasm for forming emotional bonds. It is their ability to get people to care about them, and not their really quite pedestrian intelligence, that has made them the most widespread mammal on the surface of this planet.


Clive D.L Wynne, Ph.D., is the founding director of the Canine Science Collaboratory at Arizona State University. Previously, he founded the Canine Cognition and Behavior Laboratory at the University of Florida, the first lab of its kind in the United States. A native of the United Kingdom, Wynne has lived and worked in Germany and Australia as well as the United States and gives frequent talks to audiences around the world. The author of several previous academic books and of more than 100 peer-reviewed scientific journal articles that count among the most highly cited studies on dog psychology, he has also published pieces in *Psychology Today*, *New Scientist*, and the *New York Times*, and has appeared in several television documentaries about dog science on *National Geographic Explorer*, *PBS*, and the *BBC*. His latest book, *Dog is Love: Why and How Your Dog Loves You*, was published by Houghton Mifflin Harcourt in September. He lives in Tempe, Arizona.

Plenary lecture: Manoj Guatam, Jane Goodall Institute
Nepal - scilab25@gmail.com



MANOJ GUATAM

"One Health One
Welfare in animal
conservation"



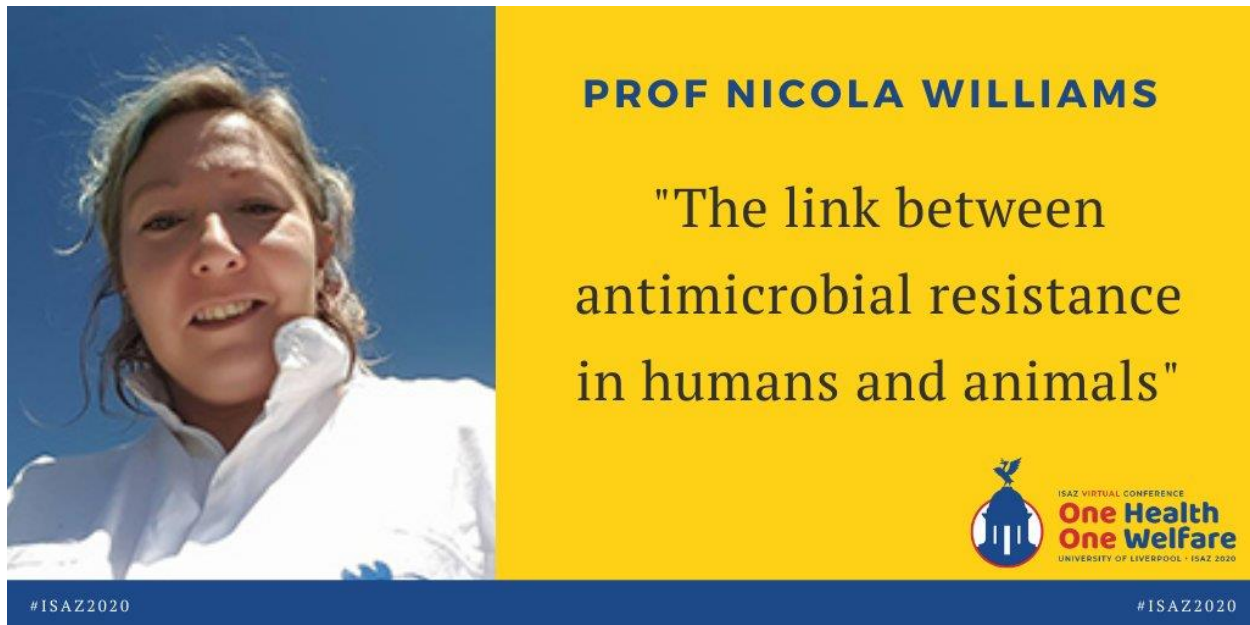
#ISAZ2020 #ISAZ2020

The crux of One Health and One Welfare is the consideration to a balanced need and role of all the aspects of society in regards to health and welfare. In a scenario where there are multiple agencies, majority of which, are working randomly in isolation to ensure health and welfare of either animals, humans or environment, the relation and interaction dynamics of these multiple agencies hold much meaning with regards to One Health and One Welfare. To better elaborate these dynamics and make the ideas relatable I will be using the case study of the Dog Population Management practice over the past 16 years, in Kathmandu, Nepal. Simply categorising the players into government, community, NGOs, donors and research organisations, I try to shed light on the dynamics of interaction between each set of two agencies with an intention to excavate the underlying gaps and problems within the practice and secondary challenges and opportunities prompted by the interactions. Highlighting the behaviour of each player group, I present a picture of several phenomena, prevalent tendencies and the identified challenges, thus emphasising the opportunities and recommendations in the line of realising the One Health-One Welfare dream.

Manoj Gautam is the Executive Director and General Secretary of the Jane Goodall Institute Nepal, the country chapter of the organization founded by the leading Primatologist, conservationist and United Nation's Peace Messenger DBE Dr Jane Goodall. Working at the Institute Manoj deals with several conservation related issues in Nepal and in Asia and specializes in designing community-based approaches to address the most pressing crisis in the field of conservation. He is an award-winning Animal Welfare advocate who has led several campaigns of international significance that has not only changed lives of thousands of animals in Asia but also the mindset of

thousands of people influencing the way humans treat animals. While many animal activists are known to have resorted to violent activities causing immense human suffering, Manoj has established himself as people-charmer who influences human behavior around animal concerns.

Plenary lecture: Professor Nicola Williams, University of Liverpool - njwillms@liverpool.ac.uk



PROF NICOLA WILLIAMS

"The link between antimicrobial resistance in humans and animals"

ISAZ VIRTUAL CONFERENCE
**One Health
One Welfare**
UNIVERSITY OF LIVERPOOL · ISAZ 2020

#ISAZ2020 #ISAZ2020

Antimicrobials are important for managing infectious diseases in humans and animals, however the rise of antimicrobial resistance threatens their efficacy. The same antimicrobial drugs or classes of drug are used both in people and companion animals creating the conditions necessary for the development and selection of antimicrobial resistance (AMR) of significance to both human and animal health. Furthermore, our frequent and close contact with companion animals provides an opportunity for transmission of AMR, which can occur in both directions. In addition, the veterinary treatment available to companion animals is increasingly complex and as such, prescribing of antimicrobials and exposure to AMR occurs not just in community settings, but in clinical environments akin to human hospitals. Increasingly, there are reports of important and emerging AMR determinants found in people being reported in companion animals. Therefore, it is important to understand the role of companion animals with regards to AMR, whether they are contributing to the problem, or are recipients of AMR circulating in human populations and other animals. Our work and that of others will be discussed in exploring this question and AMR among companion animals and those in close contact with them in a number of contexts; in the community through to clinical referral hospitals, and the potential contribution of practices such as the feeding of raw meat diets to the burden of AMR in dogs.

Nicola Williams is a Professor in Zoonotic Bacteria Disease. She is a microbiologist who researches bacterial zoonoses (including antimicrobial resistance) in wildlife, food and companion animal species, investigating reservoirs, survival in the environment, fitness and transmission between animals and to humans, using a combination of conventional microbiology and molecular biology and next generation sequencing. She has a large portfolio of research on foodborne pathogens, antimicrobial use and resistance, including the link between companion animal ownership and antibiotic resistance and RAW feeding.

Plenary lecture Sponsored by
Humanimal Trust: Professor
Abigail Woods, University of
Lincoln - AWoods@lincoln.ac.uk



PROF ABIGAIL WOODS

"Intersections in
histories of human and
animal health"



#ISAZ2020

#ISAZ2020

While the term 'One Health' is a 21st century creation, recognition of the links between human and animal health has a much longer history. This presentation explores some of these intersections by focusing on the roles played by animals. It shows how, as experimental bodies, sick bodies, dangerous bodies and comparative bodies, animals helped to advance knowledge, were subjected to its application, and influenced the state of human health. Examining these developments in relation to human-animal relationships, and the evolution of human and veterinary medicine, reveals the social and political dimensions of 'One Health', and provides lessons for its present-day pursuit.

Abigail Woods is a historian of science, technology and medicine. She trained in Cambridge and Manchester and spent 8 years at Imperial College London before joining King's College London in 2013, where she was the Head of the Department of History. She is now Pro Vice Chancellor/Head of College of Arts at the University of Lincoln. Reflecting her earlier career as a veterinary surgeon, her research focuses on the history of animals, animal health and livestock agriculture in modern Britain, the evolution of veterinary medicine, and the history of One Health. With colleagues, she co-authored *One Health and its Histories: Animals and the Shaping of Modern Medicine* (Palgrave, 2018).

Plenary lecture: Dr Risë VanFleet, International Institute for Animal Assisted Play Therapy®, USA - Rise@risevanfleet.com

DR RISE VAN FLEET

"Animal consent and wellbeing in Animal Assisted Interventions"

ISAZ VIRTUAL CONFERENCE
**One Health
One Welfare**
UNIVERSITY OF LIVERPOOL · ISAZ 2020

#ISAZ2020 #ISAZ2020

As Animal Assisted Interventions grow popular, academic and popular articles on the benefits of animals for humans have increased dramatically. Unfortunately, attention to the impact on animals is far less prevalent. There is a preponderance of images on websites and video platforms that depict happy humans with very unhappy therapy animals. These are typically accompanied by comments of how cute they are. It's as if the animals' expressions are invisible. This plenary focuses on animal consent, willingness, and voluntary participation in AAls, how to better recognize their sentience, and a mandate to adopt an animal-centered approach if we are to include them in our work at all.

Risë VanFleet, PhD, RPT-S, CDBC is a licensed psychologist, registered play therapist-supervisor, and certified dog behavior consultant with 45 years of experience

in a variety of settings. She is the author of several award-winning books including *Animal Assisted Play Therapy*, *The Human Half of Dog Training*, *Filial Therapy: Strengthening Parent-Child Relationships Through Play*, *Child-Centered Play Therapy*, and dozens of chapters, articles, and online courses. She's the recipient of 14 national and international awards for her contributions to psychology, post-grad training, and writing. She works with children and families with mental health/relationship challenges, and also with dogs, specializing in puppy mill and unsocialized dogs who exhibit extreme fear. She also teaches mental health and animal behavior professionals throughout the world. She is especially interested in helping people develop healthy, reciprocal relationships with their animals, and increasing their awareness of animal sentience and well-being. She is the president of the International Institute for Animal Assisted Play Therapy® headquartered in Boiling Springs, Pennsylvania USA.

Plenary lecture: ISAZ Conference Poet: Matt Black
(funded by the Centre for the Humanities and Social Sciences of Health, Medicine and Technology (CHSSoHMT) at the University of Liverpool) -
matt.black@pop3.poptel.org.uk



The latest show by acclaimed writer and performer MATT BLACK is about dogs and people.

What happens when a man starts to think he is a dog? That dogs have the answer to all our problems? Join Matt Black for joyful entertainment with a great shaggy dog story, surprising dog facts, excellent poems, and cheap props. Inspired by Lola, a rescue dog from Ireland and current dog research, you'll learn about dogs' eyebrow techniques, what percentage dog you might be, and one dog's answer to world peace.

Comedy, science and poetry collide!

Matt Black will perform his one-person show *The Snoopy Question (or One Dog's Answer to World Peace)* based upon conversations about dogs with researchers at the University of Liverpool. Matt is a professional poet who is currently launching his new poetry collection "Sniffing lamp--posts by Moonlight". He became obsessed with writing about dogs in 2017, and his show is a joyful exploration of dogginess, weaving in recent research into dogs with the story of a man who thinks dogs might have the answers to everything, and thinks he might be turning into a dog.

www.matt-black.co.uk

Matt is a writer based in Leamington Spa. Since being Derbyshire Poet Laureate (2011-13) he has successfully completed over 20 substantial commissions on public themes, and over the last 4 years has worked extensively on public knowledge work, including writing a play inspired by University of Liverpool academic research into extreme weather, which has toured for two years. He is currently presenting his show 'The Snoopy Question; One dog's answer to world peace' on a UK tour, after a successful run at the 2019 Edinburgh fringe, and its content is based upon conversations with researchers at the University of Liverpool about dogs and their interactions with people. In 2019 he was commissioned by a University of Liverpool public engagement grant held by Dr Westgarth and Dr Pearson, who lead the cross-faculty 'Connecting Human-Animal Interaction Research (CHAIR) network. In this pilot project he worked closely with four researchers to translate their findings into poetry, and also hosted a public writing workshop and reading event, which resulted in a booklet of poems by staff and students, called 'Dear Fly'. Due to the success of this work, we wish to further public and researcher engagement with interdisciplinary anthrozoological research and Matt will be hosting a writing workshop at the conference, as well as writing poems based on talks he attends during the conference.



ISAZ2020 Student Competition List

Podium Competition: Oral livestream (OLS), Oral Recorded (OR), & Flash Recorded (FR)

Clare Jensen (OLS), Purdue University, West Lafayette, USA
Service dogs for veterans with posttraumatic stress disorder: Dog characteristics and their relationship to symptom-severity outcomes

Christine Johnson (OLS), Wayne State University, Detroit, USA
The Effects of a Canine-Assisted Intervention on Occupational Therapy Graduate Students' Perceptions of Well-being: A Randomized Controlled Trial

Carmen Glanville (OR), University of Melbourne, Melbourne, Australia
Animal cruelty and neglect in Victoria, Australia: prevalence, reporting, and community attitudes

Freya Green (OR), University of British Columbia, Kelowna, Canada
Uncovering the views of law enforcement personnel who participated in a canine assisted-intervention: A case study

Erin Jones (OR), University of Canterbury, Christchurch, New Zealand
How owner expectations and perspectives influence peoples' training methodology of companion dogs in Aotearoa New Zealand.

Allison Maynard (OR), Brock University, St. Catherines, Canada
Natural Connections: Exploring the Role of Engagement in Outdoor Activities and Technology Use on Children's Moral Concern for Wild Animals and Ecosystems

Leanne O. Nieforth (OR), Purdue University, West Lafayette, USA
Expectations versus Experiences of Veterans with PTSD Service Dogs: A Qualitative Analysis

Kerri Rodriguez (OR), Purdue University, West Lafayette, USA
Defining the PTSD service dog intervention: Perceived importance, task use, and symptom specificity of psychiatric service dogs for military veterans with PTSD

Cora Wagnern (OR), University of Basel, Basel, Switzerland
Animal-assisted placebo-induced analgesia: A randomized controlled trial in healthy participants

Kristine Hill (FR), Exeter University, Exeter, United Kingdom
In or Out? Social discourses surrounding with free-roaming cats in urban communities

Rahel Marti (FR), University of Basel, Basel, Switzerland
Effect of the presence and contact of a dog on the neuronal activity of healthy persons

Hao-Yu Shih (FR), University of Queensland, Gatton, Australia
Human personalities affect the lead tension while walking dogs on leash

Poster Competition:

Jennifer W. Applebaum, University of Florida, USA

Emotional Reliance on Pets: Effects of Mental Health Stigma, Mental Illness Diagnosis, and Consideration of Relationship Quality Amongst a National Sample of U.S. Pet Owners

Jillian Bradfield, The University of Edinburgh, Edinburgh, United Kingdom

The Impact of Animal-Assisted Interventions on the Mental Health and Stress of University Students: A Systematic Review

Jenna Edney, Texas A&M University-Central Texas, Killeen, USA

Decoding a Social Identity: Implication, Ambiguity, and Complications of “Cat Lady”

Clare L. Jensen, Purdue University, West Lafayette, USA

Role of the Human-Animal Bond Between Facility Dogs and Pediatric Healthcare Professionals

Unaiza Iqbal, University of Edinburgh, Edinburgh, United Kingdom

The impact of animal assisted interventions on psychosocial and behavioural functioning of children and young people with Attention Deficit Hyperactivity Disorder (ADHD): A systematic review

Angela Matijczak, Virginia Commonwealth University, Richmond, USA

Assessment of attachment to pets among LGBTQ+ young adults: Evaluation of the Pet Attachment and Life Impact Scale

Camille Xinmei Rousseau, University of British Columbia, Kelowna, Canada

When it comes to animals - What are scholars publishing about?: A bibliometric analysis of publications across three HAI journals

Jill Steel, University of Edinburgh, Edinburgh, United Kingdom

The Impact of Animal-Assisted Learning on Emotional Wellbeing and Reading in Children.

Ryo Taguchi, Nippon Veterinary and Life science University, Tokyo, Japan.

Animals in textbook: how Japanese view of life and death is taught in elementary school.

Camie A Tomlinson, Virginia Commonwealth University, Richmond, USA

Psychometric testing of the Comfort from Companion Animals Scale in a sample of LGBTQ+ young adults: A graded-response model

Tiamat Warda, University of Exeter, Exeter, Devon, United Kingdom

Dogs as the New Medicine? Facebook’s roles within the emotional support dog community and its effect on the rise in popularity of emotional support dogs.

Satellite Seminar - 12:00 - 6:00pm

Tuesday 1st September

Putting Animals at the Centre of Animal Assistance.
Sponsored by ABTC and SCAS



Kindly sponsored by the Animal Behaviour and Training Council, and Society for Companion Studies, this day satellite event will tackle the often-overlooked issue of animal welfare when using animals for assistance, service or therapy needs. A mixture of leading academic and practitioner experts will summarise the evidence and their thoughts about animal consent, assessment, training methods, retirement, conflicts of interest, adverse events, standards, and bereavement counselling.

Plenary: [Dr Risë VanFleet](#) "Animal Consent and Wellbeing in Animal Assisted Interventions", 12:20 - 1:10pm

Animals at the Centre of Animal Assistance Session 1:
1:20 - 2:40pm, Presentation type: Invited, Chair: Chris Laurence

237 Training what TO do: Utilising positive reinforcement in assistance dog training

Lucy Michaliszyn - Guide Dogs for the Blind Association, United Kingdom

The benefits of using positive reinforcement training are outlined and applied to guide dog assistance work. Reinforcement is defined and specific types of reinforcement used are indicated. Further explanation of how the guiding task behaviours are broken down is provided, and a selection of training techniques, specific to the guiding task, are highlighted and described using video footage narration. Further video footage is used to show examples of dogs working through busy high streets at the final stages of their training. In addition, there are clips taken from partnership training which highlight how the service user is able to reinforce desired behaviours at objective points such as kerb edges, chairs and crossing boxes. There are also two examples of service users using co-operative care training to complete husbandry procedures (ear clean and eye drop practice). The final slide outlines the organisation's commitment to canine welfare, education and continuous professional development.

238 What should an assessment protocol for dogs for therapeutic work look like?

Prof Daniel Mills - University of Lincoln, Lincoln, United Kingdom

In order for a dog to perform optimally in a therapeutic context, it not only needs to know what it needs to do, but it also needs to be able to do this within the proposed circumstances. These circumstances can be challenging at times (e.g child melt downs) and a full and specific risk assessment is obviously essential.

The specific demand for risk assessment can be used as a vehicle for enabling the development of more effective assessment protocols aimed at determining a dog's potential suitability for the proposed work. Any assessment protocol considers not just the tasks required but also the general resilience of the dog in the proposed context. Given the diversity of therapeutic requirements, there is no single assessment protocol, and we advocate the use of "job descriptions" for dogs to inform the rational development of the protocol. Just as with people, developing a job description begins with a consideration of the context of the job, and its purpose in both general and specific terms. From this the responsibilities of the individual can be articulated and the specification developed accordingly. In the case of dogs, this should consider the specific training required, skills and competencies. From this what needs to be assessed and how this might be done most effectively may become evident. A major challenge, however, is the paucity of reliable or validated tests, and it is essential that those undertaking the assessment are aware of these and appropriate caveats provided.

In this presentation I will elaborate on both the process involved in developing an assessment protocol and also the instruments available, in order to illustrate what an assessment protocol for dogs engaged with therapeutic work should look like.

249 When should a dog be retired?

Dr John-Tyler Binfet¹, Dr Elizabeth Kjellstrand Hartwig², Freya Green¹

¹University of British Columbia, Kelowna, Canada, ² Texas State University, San Marcos, USA

We will discuss issues to be considered regarding when a dog should be retired from assistance-related working life.

Animals at the Centre of Animal Assistance Session 2, 3:20 - 5:00pm, Presentation type: Invited, Chair: Dr John Tyler-Binfet

240 Considerations regarding owner-trained Assistance/Service dogs

Dr Anne McBride - University of Southampton, Southampton, United Kingdom

The demand for animals, notably dogs, to assist people with physical, psychological and/or emotional disabilities is increasing at a rate which far outstrips the supply available through organisations. This has led to a proliferation in the numbers of owner-trained animals and a recognition of various issues arising from this that need due consideration if the partnership is going to be 'successful' in the fullest sense of that word. These are relevant to any assistance animal, regardless of species. However, this talk will focus on the dog as it is the species most frequently employed in an assistance role. Many of the points raised will be applicable to contexts in which other species are used. There are four groups that are directly affected by any assistance dog partnership. These are the dog, the owner, the public (and other animals), and businesses.

The role of an assistance animal has pros and cons in terms of the welfare of each of these groups. The likelihood of some of the potential negatives occurring is accentuated where the animal is 'owner-trained'. 'Owner trained' includes animals that are fully trained by the owner and those where there has been input from another individual or individuals. This talk will provide examples of potential concerns relating to each group and some thoughts of how these may be addressed across all stages of the life of the partnership.

241 Safeguarding the welfare of animals used in educational and care settings

Mrs Gilly Mendes Ferreira - Scottish SPCA (Scottish Society for the Prevention of Cruelty to Animals), Dunfermline, United Kingdom

Animals are used in a variety of contexts and are often deemed as a good way to enhance engagement in learning, help nurture empathy and compassion and tackle loneliness and isolation. We are observing an increase in how animals are used which raises questions such as who is ultimately responsible for that animal's welfare and how can the needs of these animals be protected.

The Scottish SPCA is unique among animal charities in the UK in that we are the only one which is a reporting agency to the Crown Office and Procurator Fiscal Service. Under the Animal Health and Welfare (Scotland) Act 2006 our inspectors have powers to enter and search properties under warrant, seize animals and issue Animal Welfare Notices. Whilst we have powers to remove animals from their owners, we only exercise that as a last resort. As an organisation we aim to enrich the lives of animals and people; champion animal welfare; encourage respect and kindness for all animals across all our communities in every environment and promote the importance of the human/animal bond, and the myriad medical, social and psychological advantages gained from animal companionship whilst bringing those who abuse animals to justice.

As trends emerge in Scotland involving the use of animals, we must consider the following: What guidance is available? Does legislation exist to protect all involved? Who are the key partners who need support? What can we learn from other countries? Join this discussion and through the use of real case examples help address these four critical questions when it comes to safeguarding the welfare of animals used in educational and care settings whilst also supporting the human benefits that these interactions can have.

242 Self-regulation and standard development in Animal Assistance; a brief review of some international initiatives

Mr Peter Gorbing - Dogs for Good, Banbury, United Kingdom

A common theme growing in the world of animal assistance is the vital importance of the welfare and well-being of both people and animals. One way to achieve this is through the development of standards to support the work of practitioners. Standards are complex to achieve for a number of reasons - working on them is time-consuming, requires compromise and dealing with competing interests. For some, standards are seen as creating unnecessary regulatory burdens.

Over the past years, there have been some excellent initiatives where practitioners have come together to create standards and peer-assessed accreditation systems. This presentation will look at three of these standards initiatives - Assistance Dogs International (ADI), a Europe-wide CEN standards agency initiative on assistance dogs

and Animal Assisted Intervention International (AAIL). These initiatives offer a base for the industry to build on and ensure that the tools are in place to enable us to intensify our efforts to put the well-being of dogs and people at the heart of our work.

179 Addressing Adverse Events in Animal-Assisted Interventions

Dr Zenithson Ng - University of Tennessee College of Veterinary Medicine, Knoxville, USA

Adverse events surrounding animal-assisted interventions (AAls) are reluctantly reported and uncommonly discussed in the literature. Adverse events are defined as undesirable or unexpected experiences that occur as a result of human-animal interaction that negatively impact the participant, handler, animal, environment, bystanders, or any combination of these. All adverse events, regardless of severity, should be reported and managed in a standardized protocol to better understand and minimize risks in AAls. Little is known about the frequency and outcomes of adverse events because those engaging in AAls are often reluctant to report them for fear of negative repercussions, including termination of AAI programs. All adverse events require immediate attention to assure the safety of all parties involved. Complete record of the objective and factual details of the situation should be documented from the perspectives of all parties to increase the accuracy of recall. The written record should include all details addressing the questions of who, what, when, and where. Any forms of immediate attention including first aid, treatments, or discussions should be clearly described. Beyond the initial documentation and resolution of an adverse event, appropriate steps must be taken to manage the risk of any recurrence by instituting a standardized adverse event review process. Objective leaders of the AAI organization should be selected to review the event to discuss the potential causes for the incident, to ensure proper resolution and follow-up for all parties involved, and to institute policies and procedures for prevention in the future. Having a transparent process for managing adverse events in AAls encourages proper reporting and ensures fairness that upholds the safety and wellbeing of all parties involved. Further research in this area will inform how frequently these events occur and how to achieve the best possible outcomes.

Invited talk: Pet Bereavement Counselling, Diane James, Blue Cross, 5:20 - 6:00pm

127 How has Pet Bereavement become more accepted and understood? What are the challenges and changes, that have been made in this field, culminating in the Blue Cross pet loss grief cycle?

Manager Blue Cross PBSS Diane James - Blue Cross, Burford, United Kingdom

As one of the leading Pet Bereavement support services in the UK, Blue Cross PBSS work with the general public and many other animal organisations and charities, leading to an insight into acceptance of grief caused by Pet Bereavement, along with associated areas from after death body care, to the need for pet bereavement leave and other areas will be looked at in this talk.

Culminating in looking at the pet loss grief cycle, having used and worked with Kubler Ross for a number of years, there is a cross over in areas, as to be expected, but Blue Cross PBSS realised there are areas that are more specific to loss of a beloved animal.

Plenary Public Performance sponsored by CHSSoHMT: [Matt Black](#) -The Snoopy Question. 7:00 - 8:00pm

To register for this event please go to <https://www.eventbrite.com/e/116104348231>

Workshops

Puppy trafficking 3:00 - 4:00pm Wednesday, 2nd September 2020

81 Puppy trafficking - a trade that causes misery and damages the human-animal bond

Mrs Kirsteen Campbell, Mrs Gilly Mendes Ferreira

Scottish SPCA, Dunfermline, United Kingdom

Illegal puppy farming is big business across the UK and is estimated to be worth £13m in Scotland alone. Puppies are treated like a commodity, bred in huge numbers with no regard for their welfare.

The conditions they are born in leads to serious medical and behavioural issues and, in many instances, death at just a few weeks old. The main driver behind the demand for puppies is the general public. The Scottish SPCA is authorised to enforce the Animal Health and Welfare (Scotland) Act 2006. Our special investigations unit investigates hundreds of reports of puppy farms every year.

They have successfully raided and prosecuted puppy farms and individuals involved in the greed-driven trade. Following a successful UK conference that called for a collaborative effort to tackle this trade a dedicated #SayNoToPuppyDealers website was launched. Discover how this is being effective in raising public awareness of the issue. Come and learn about Operation Delphin, a designated taskforce to tackle the supply of puppies being passed through this trade and help combat the animal welfare concerns fuelled by this industry.

Partnerships are key and we are working with many partners to spread the word, but how can we truly create a lasting behaviour change when it comes to purchasing animals and how can we ensure that animals that are for sale are kept in the best welfare conditions possible? Join in the discussion on a very topical issue that has such a negative impact on animal welfare and damages that human -animal bond that we strive so much to protect.

To register go to <https://www.eventbrite.co.uk/e/puppy-trafficking-a-trade-that-causes-misery-tickets-116866100653>

Writing about animals. Sponsored by CHSSoHMT, 7:00 - 9:00pm Wednesday, 2nd September 2020

247 Writing Poems and Prose inspired by Animals with Matt Black

[Matt Black](http://www.matt-black.co.uk) - <http://www.matt-black.co.uk>

ISAZ 2020 Writer in Residence Matt Black will lead an enjoyable and inspired writing workshop for you to write your own poems, anecdotes or short prose inspired by your pets, or by animals encountered at work. Matt ran a similar workshop at the University of Liverpool in 2019, which resulted in a booklet of poems by staff and students, called "Dear Fly". Matt will also be running a poetry competition as part of the conference, which workshop attendees may wish to enter.

Matt will also be performing his one-person entertainment, "The Snoopy Question", as part of the conference on Tuesday, September 1st at 7pm.

To register to attend go to: <https://www.eventbrite.co.uk/e/workshop-writing-about-animals-with-matt-black-tickets-116703213453>



**2020 ISAZ
POETRY CONTEST**

Organized by Matt Black,
"The Dog Poet"

To submit and learn more
visit: bit.ly/3h6GOgA

Sponsored by The University of Liverpool Centre for the Humanities
and Social Sciences of Health, Medicine, & Technology

SUBMISSIONS DUE SEPT 4TH BY 12PM BST!

Defining the key terms in Animal Assisted Services, 11:00am - 12:00pm Thursday, 3rd September 2020

182 Defining the key terms in animal-assisted services

Dr Tiffani Howell, Prof Pauleen Bennett - Anthrozoology Research Group, School of Psychology and Public Health, La Trobe University, Bendigo, Australia

Terms such as assistance animal, emotional support animal, therapy animal, and companion animal, are commonly used in both research and practice, but the intended meaning of these terms can vary. For instance, a dog trained by an accredited guide dog trainer to provide emotional support for a child with special needs, is sometimes referred to as a 'companion dog', although the more conventional definition of a companion dog is a pet with no special training. 'Therapy animal' can refer to an animal that is used as part of a goal-directed, therapist-led intervention, or an animal that visits hospitals or retirement homes to bring comfort to the patients or residents. This lack of clarity can impact policy decisions relating to public access or government funding for these animals. For example, emotional support animals are afforded some legal protections in the United States, but not in the United Kingdom or Australia. Assistance animals, on the other hand, are provided legal protections in all three countries. These animal types support vulnerable individuals in different ways, but this support requires consistent regulations regarding public access and funding support. Therefore, it is important to establish a clear definition of each term. Draft definitions were developed at ISAZ 2018, and the current workshop will finalise the definitions. A white paper will be drafted, for endorsement by ISAZ, and published for use by the wider community of researchers, practitioners, and government officials.

This workshop will proceed in two parts. On conference Day 1, we will begin the discussion, providing existing definitions and explaining how to use MS Teams for further discussion. We will provide all relevant documents, and request feedback via discussion forums. On Day 3, we will continue the discussion and finalise the definitions. To access the platform, please register online at <https://definitionsworkshop.eventbrite.com.au>

Defining the key terms in Animal Assisted Services PART 2, 11:00am - 12:00pm Saturday, 5th September 2020

Human-wildlife interactions, 11:00am - 12:00pm Friday, 4th September 2020

208 Human-wildlife interactions: Encouraging and managing stakeholder engagement

Prof Vicky Melfi^{1,2}, Ben Klinkenberg¹, Lucy Bearman-Brown¹, Polly Doodson¹, Robin Hutchinson¹

¹Hartpury University, Hartpury, United Kingdom. ²University of Sydney, Sydney, Australia

There are many commonalities in human-wildlife interactions (HWI), which enable us to build a framework to better understand them. Thinking about HWIs collectively enables us to consider the costs and benefits of them to both humans and animals, and society more widely. On balance, positive HWIs are ideal, so should be supported and promoted within our society. But how can we do this? This workshop aims to explore the importance of stakeholder engagement in HWIs, and considers how this might be developed, maintained and appreciated.

The scope of HWI can represent many different species, our perceptions of which vary whether we consider them to be native or endemic versus invasive or pest, and include many different stakeholders, who might feel strongly about them whether that be positively or negatively... or maybe feel nothing at all.

Within this workshop we'll hear some examples from British and overseas conservation programmes, which have been chosen to provide examples of different stakeholder engagement and prime discussions about lessons learnt and how to move forwards proactively in the future.

Lessons learnt:

Conscious conservation: working with indigenous populations to manage wild boar - Ben Klinkenberg

The dynamics of saving a British icon: hedgehog conservation in the UK - Lucy Bearman-Brown

How familiarity with wildlife can change stakeholders' attitudes towards them in the UK - Robin Hutchinson

Stakeholders paying for wildlife interactive opportunities: the rise of zoo paid interaction - Polly Doodson

Selamatkan Yaki! Talking with villagers to save the critically endangered Sulawesi crested black macaque - Vicky Melfi

Animals in Schools - Benefits, challenges, standards and best practices - 7:00 - 9:00pm Saturday, 5th September

248 Animals in schools - Benefits, challenges, standards and best practice in Animal-assisted interventions (AAI) and Animal-assisted school counseling (AASC)

Prof Kerstin Meints¹, Dr Victoria Brelford¹, Dr Mirena Dimolareva², Dr Elizabeth Kjellstrand Hartwig³, Wanda Montemayor⁴

¹University of Lincoln, Lincoln, United Kingdom. ²Bishop Grosseteste University, Lincoln, United Kingdom. ³Texas State University, San Marcos, USA. ⁴Community Arts Therapy, USA

Animal-assisted intervention (AAI) in schools can enhance learning, reduce stress in school children and improve behaviour. While research is still investigating the effectiveness of AAI in schools, practice has overtaken the science and in many countries, animals are already introduced to schools and other settings. A range of guidelines on safe practice for Animal Assisted Interventions (AAI) exists, but guidelines vary with providers and settings.

We have attempted to unify these guidelines and the workshop will introduce the Lincoln Education with Dogs (LEAD) Risk Assessment tool for AAI providers and users. The first part of the workshop will present and explain the LEAD tool, enable workshop participants to use it and highlight best practice with respect to safe and welfare-oriented AAI in schools and other settings. We will then follow with insights into practical issues of working in mainstream schools and in schools for children with special educational needs. Workshop topics include risk assessment of settings, staff, AAI participants, handlers and dogs, safety training, animal welfare, minimizing injury and zoonoses risk; staff training and dog bite prevention training.

The second part of the workshop will present Animal-assisted school counseling (AASC). Animal-assisted school counseling (AASC) is a goal-directed process in which a professional therapy animal works in partnership with a school counselor to help children work toward psychological and academic wellness in school settings. This part of the workshop will present key concepts of AASC and foundational skills used in AASC. Participants will learn how AASC aligns with notable student success behaviors on the American School Counseling Association Mindsets and Behaviors for Student Success Standards. Participants will have the opportunity to view video examples of AASC. At the end of the workshop, the presenters will facilitate a large group discussion on AASC benefits and challenges.

Workshop topics will include defining AASC, different roles and training in AASC vs. Animal-Assisted Education, getting principal and district buy in, alignment with ASCA standards, Video examples, benefits and challenges of professional therapy animals in schools.

Satellite Workshop: Human Behaviour Change for Animals - Designing interventions and measuring their impact (Sponsored by Cats Protection), 2:00 - 6:00pm Sunday, 6th September



For more information and to book a place see

<https://www.hbcforanimals.com/training/online-courses/isaz-satellite-workshop-human-behaviour-change-for-animals/>

If we understand human behaviour and what drives behaviour change we can improve the lives of animals

Understanding how and why people behave the way they do can provide solutions to challenging issues that affect animals. This HBCA workshop will introduce the key concepts, principles and theories regarding the science of human behaviour change, together with exploring how interventions can be designed and evaluated. There will be case studies throughout the session to bring the theory to life in a practical setting, and the online workshop will include presentation, and reflective elements. There will be some background reading to do before the event and a follow-up exercise after the event.

We will record the session for those who can't make the live event. Please book using the link provided and the recording will be sent to everyone who is registered after the event whether or not you attend the live session. The recording will only be available for those who book before September 6th.

OUTCOMES:

This workshop is sponsored by Cats Protection, who will also be co-facilitating this workshop as part of the HBCA team.

The early bird rate is £30, this increases to £35 on August 10th.

BOOKING IS SEPARATE THROUGH https://hbca_isaz.eventbrite.co.uk

Conference Opening - 1:00 - 1:20pm Thursday, 3rd September

Plenary: Prof Nicola Williams "The link between antimicrobial resistance in humans and animals" 1:20 - 2:10pm Thursday, 3rd September 2020

Animals and public health benefits - 2:20 - 3:40pm Thursday, 3rd September

Presentation type: Oral live

132 Knowledge, practices and attitudes of healthcare professionals about pet ownership during cancer survivorship

Luisa Lopes-Conceição^{1,2}, Milton Severo^{1,2}, Bárbara Peleteiro^{1,2}

¹EPIUnit - Instituto de Saúde Pública, Universidade do Porto, Porto, Portugal. ²Departamento de Ciências da Saúde Pública e Forenses e Educação Médica, Faculdade de Medicina da Universidade do Porto, Porto, Portugal

Introduction: Healthcare professionals (HCP) are viewed as trusted information sources for cancer patients, however there are no guidelines addressing human-animal interactions during cancer survivorship. The present study aimed to describe HCP knowledge and practices about this area and relate HCP characteristics and attitudes toward pets with their practices.

Methodology: A total of 141 HCP from oncology services of two hospitals were included. Data on knowledge and practices were obtained through self-administered questionnaires. Odds ratio (OR) and 95% confidence intervals (95%CI) were computed using logistic regression to quantify the association between HCP characteristics and attitudes and their practices.

Main Findings: Nearly half of participants usually asked patients about pet ownership, and being older (OR=1.06,95%CI:1.02-1.10), contacting with pets throughout life (OR=0.31,95%CI:0.11-0.90) and having more positive ideas on animals (OR=1.55,95%CI:1.07-2.25) were associated with this practice. A total of 38.9% recommended to limit contact to healthy pets during cancer treatment, while after its completion 48.6% recommended to maintain the same contact as before diagnosis.

About half did not recognize the existence of risks related to pet ownership, and being younger (OR=0.94,95%CI:0.91-0.99) was associated with this practice. Most HCP identified a lack of scientific evidence regarding risks (57.6%) or benefits (43.6%) and perceived themselves as having a medium level of knowledge on risks (57.9%) or benefits (53.9%). Almost all HCP recognized benefits associated to pet ownership and reported having an interest in increasing their knowledge on human-animal interactions during cancer survivorship.

Principal Conclusions and Implications for Field: Age, pet ownership experience and positive ideas on animals were associated with HCP practices, and their recommendations depended on cancer survivorship phase. Despite the lack of scientific evidence and knowledge pointed out, HCP recognized the existence of benefits and reported an interest in increasing their knowledge, highlighting the need for developing guidelines to direct and standardize HCP practices.

190 Companion animals as stress buffer: an experience sampling study of the relationship between the presence of pets, stressful experiences and affect

Mayke Janssens^{1,2}, Jannes Eshuis¹, Sanne Peeters^{1,2}, Jennifer Reijnders^{1,2}, Marianne Simons¹, Johan Lataster^{1,2}, Nele Jacobs^{1,2}

¹Open University of The Netherlands, Heerlen, Netherlands. ²Maastricht University, Maastricht, Netherlands

Introduction: Companion animals have been identified as a unique source of social support and (therefor) as contributors to mental wellbeing. Two different processes through which social support leads to mental wellbeing have been suggested: The buffering model proposes that social support is only beneficial when under stress, while the main-effect model proposes that social resources have a beneficial effect irrespective of the level of stress people are under. This study uses the Experience Sampling Method to test these two hypotheses in the context of social support received from a companion animal.

Methodology: 118 Dog or cat owners reported for five consecutive days, at ten random time-points each day, *in the moment* whether a pet was present. At each measurement moment they also reported on stressful activities and events, and on their *current* emotions resulting in a positive (PA) and negative (NA) affect scale.

Main results: Using multilevel regression analyses and controlling for the presence of other people, we first showed that the presence of a companion animal is associated with an increase in PA (B=0.19,P<0.001,95%CI=0.10;0.29) and a decrease in NA (B=-0.11,P<0.001,95%CI=-0.16;-0.06). Subsequent interaction analyses however show that this effect is dependent upon the level of stress experienced at that moment, as a significant interaction is present for event related stress in the model of NA (B=-0.04,P<0.001,95%CI=-0.07;-0.02) as well as in the model of PA (B=0.09,P<0.001,95%CI=0.05;0.13) and for activity related stress in the model of PA (B=0.06,P=0.006,95%CI=0.02;0.11). When the association between the presence of the

companion animal and PA/NA was tested in a subgroup with low stress levels, the main effect was no longer significant.

Principle conclusions: These results provide evidence that the presence of a companion animal dynamically buffers individuals against the negative effects of stressors and provide support for the buffering model of social support from companion animals.

200 Service dogs for veterans with posttraumatic stress disorder: Dog characteristics and their relationship to symptom-severity outcomes

Clare Jensen¹, Kerri Rodriguez¹, Evan MacLean², Marguerite O'Haire¹

¹Purdue University, West Lafayette, USA. ²University of Arizona, Tucson, USA

Introduction: Prior research has pointed to potential benefits to military veterans when partnered with a psychiatric service dog, including better mental health and lower PTSD symptom-severity. Although these findings created the groundwork for clinical research, there is a great need to consider the specific role of dog characteristics in human outcomes. Thus, the present study aims to address the question: are veterans' PTSD symptoms related to characteristics of their service dogs?

Methodology: The study sample consisted of N=49 military veterans with PTSD (Mage=38.0±8.2, 83.7% male) with a psychiatric service dog. Participants completed the PTSD Checklist (PCL-5) survey for symptom-severity one month before (baseline) and three months after (follow-up) service dog placement. Canine measures included breed, sex, source, and pre-training temperament assessments coded for food motivation, excitability when approached by strangers, and sensitivity to touch, sound, and ground surface. Analyses included linear regression models, controlling for baseline symptom-severity.

Main Findings: The majority of service dogs were male (55%), mix-breed (58%), and sourced from shelters or relinquishment (53%). Dog sex, breed, and source were not significantly associated with PTSD symptom-severity ($p's \geq .17$). Symptom-severity was not associated with food motivation or touch, sound, and surface sensitivity ($p's \geq .13$). However, there was a significant association of dogs' excitability by strangers with veterans' change in PTSD symptom-severity from baseline to follow-up ($B=8.43$, $t=2.21$, $p < .05$). Veterans reported less improvement in PTSD symptom-severity with service dogs that displayed greater excitability by strangers.

Principle Conclusions and Implications: Results suggest that, although unrelated to several other canine characteristics, outcomes for veterans with PTSD service dogs may be related to the dog's level of excitability by strangers. Implications will allow service dog providers and researchers to direct more attention toward excitability-related measures in continued investigation of optimal service dog effects and mechanisms by which they are facilitated.

70 The Effects of a Canine-Assisted Intervention on Occupational Therapy Graduate Students' Perceptions of Well-being: A Randomized Controlled Trial

Professor Christine Johnson^{1,2}, Dr Kristin Winston³, Dr Dana Mills², Dr Rick Davenport², Dr John-Tyler Binfet⁴

¹Wayne State University, Detroit, USA. ²Nova Southeastern University, Ft. Lauderdale, USA.

³University of New England, Biddeford, USA. ⁴University of British Columbia, Kelowna, Canada

Introduction. The mental health crisis among college students, including graduate students, requires cost-effective interventions to support the increasing number of students experiencing negative mental health symptoms. Studies within medical and educational settings suggest positive mental health benefits arise from canine-assisted interventions (CAIs), especially around stress and anxiety reduction (Barker, Barker, McCain, & Schubert, 2016; Binfet, 2017; Kamioka et al. 2014). Despite the popularity of this approach to supporting student well-being, there is a dearth of research assessing the effect of CAIs on graduate students and of CAIs comprised of multiple sessions. The aim of this research was to assess the effects of a CAI on student well-being, including quality of life (QoL), stress, anxiety, occupational performance, and adjustment to the graduate college student role.

Methodology. In a randomized controlled trial comprised of 35-minute weekly sessions over six weeks, participants were assigned to either a treatment ($n = 53$) condition (i.e., weekly sessions interacting with therapy dogs) or a control ($n = 51$) condition (i.e., waitlist).

Main Findings. Preliminary ANCOVA analysis revealed when compared to participants in the control condition, participants who interacted with therapy dogs had significantly higher self-reports of QoL ($p < .001$) and decreased anxiety scores ($p < .045$). Within subjects paired t -tests confirmed significant stress reductions for participants in the treatment condition ($p < .000$). No significant differences in self-reports of occupational performance or in adjustment to the graduate college student role were found.

Principal Conclusions and Implications. Findings add to the body of literature attesting to the efficacy of CAIs in supporting student well-being and optimizing learning conditions for students. Further, this study demonstrated that graduate students in a professional program responded favorably to spending time with therapy dogs. Implications for CAI and University mental health programming are discussed.

Presentation type Oral pre-recorded

21 Expectations versus Experiences of Veterans with PTSD Service Dogs: A Qualitative Analysis

Leanne O. Nieforth, Kerri Rodriguez, Dr Marguerite O'Haire

Purdue University, West Lafayette, USA

Introduction: Conventional treatment options for posttraumatic stress disorder (PTSD) are subject to low enrollment and significant dropout. Given the high prevalence of PTSD in the United States military population, complementary treatment options are emerging. The pairing of veterans with specially trained PTSD service dogs is growing in popularity as service dogs may not carry the negative stigma associated with conventional treatment options. However, there is a lack of quantification regarding veterans' expectations versus experiences with PTSD service dogs. The objective of this study was to evaluate these expectations and experiences to understand veteran's perceptions of how PTSD service dogs may affect their lives.

Methodology: A total of 129 post-9/11 veterans with PTSD were recruited from a service dog provider, including n=70 with a PTSD service dog and n=59 on the waitlist. Open-ended survey questions were coded via a thematic content analysis and collapsed into themes: PTSD Symptomology, Service Dog Relationship and Service Dog Trained Tasks. Frequency tables compared theme and subtheme prevalence between groups.

Main Findings: Veterans' experiences and expectations were centered upon the effects the service dogs had on clinical PTSD symptomology, the human-animal bond formed and the drawbacks associated with this human-animal interaction. Findings include higher expectations among veterans on the waitlist regarding the effect of the service dogs on PTSD clinical symptoms than experienced by those with a service dog. Data suggests that the drawbacks veterans expect from their service dogs (e.g. associated costs) differ from the actual drawbacks experienced (e.g. public access issues).

Principle Conclusions and Implications for the Field: Understanding expectations versus experiences provides critical information for mental health professionals that are informing veterans on individualized interventions for PTSD. This knowledge will enable professionals to temper expectations and educate veterans on drawbacks so that they have a more rounded view of PTSD service dogs.

31 Defining the PTSD service dog intervention: Perceived importance, task use, and symptom specificity of psychiatric service dogs for military veterans with PTSD

Ms Kerri Rodriguez¹, Ms Megan LaFollette¹, Dr Karin Hediger², Dr Niwako Ogata¹, Dr Marguerite O'Haire¹

¹Purdue University, West Lafayette, IN, USA. ²University of Basel, Basel, Switzerland

Introduction. Research suggests that psychiatric service dogs may be an effective integrative treatment option for military veterans with posttraumatic stress disorder (PTSD). Although this practice continues to increase in popularity and research has reached the rigor of clinical trials, the components of the PTSD service dog intervention remain largely undefined. This research aimed to 1) quantify the importance, usage, and PTSD symptom specificity of service dog behaviors, 2) explore how PTSD severity, time, and veteran-dog closeness relate to outcomes, and 3) compare expectations of veterans on the waitlist to actual experiences.

Methodology. Post-9/11 military veterans with PTSD were recruited from a national service dog provider. A total of 216 veterans (n=134 with a service dog; n=82 on the waitlist) participated in an online survey.

Main Results. Service dogs' trained tasks of calming and interrupting anxiety were perceived as the most important for veterans' PTSD, the most frequently used in a typical day, and as helping the most PTSD symptoms. However, untrained behaviors (e.g. providing companionship) were reported to be just as important for PTSD than trained tasks. Trained tasks were most helpful to the PTSD symptoms of hypervigilance and intrusion, and least helpful to amnesia and risk-taking. Neither frequency nor perceived importance of tasks were related to veterans' PTSD severity. However, frequency of task use was positively related to veteran-dog closeness and negatively related to time since receiving the service dog. Finally, veterans on the waitlist had higher expectations than what was experienced by veterans with a service dog.

Principal Conclusions and Implications for Field. Findings describe the core components of the PTSD service dog intervention by quantifying the use and value of trained tasks and untrained dog behaviors. This study helps explain the PTSD service dog's clinically-relevant value while contributing to the scientific understanding of this integrative treatment option.

44 Animal-assisted placebo-induced analgesia: A randomized controlled trial in healthy participants

MSc Cora Wagner¹, Dr Cosima Locher^{1,2,3}, Prof. Dr Jens Gaab¹, Dr Karin Hediger^{1,4,5}

¹Department of Psychology, Division of Clinical Psychology and Psychotherapy, University of Basel, Basel, Switzerland.

²Plymouth University, School of Psychology, Plymouth, United Kingdom.

³University of Bristol, Bristol Medical School, Bristol, United Kingdom.

⁴Department of Epidemiology and Public Health, Human and Animal Health Unit, Swiss Tropical and Public Health Institute, Basel, Switzerland.

⁵Institute for Interdisciplinary Research on the Human-Animal Relationship Switzerland, c/o Swiss TPH, Basel, Basel, Switzerland

Background: Several studies suggest that the presence of a dog positively affects patients' pain perception and experience during their treatment. However, until now it is not clear how the presence of a dog contributes to the outcome of a treatment. This study focuses on the theory highlighting that the presence of a dog facilitates the relationship between health-provider and patient which in turn affects the outcome of the treatment.

To investigate this theory, we conducted an expectancy-induced placebo intervention study. It is known that placebo effects can be induced by expectations and relationship. Thus, we expected that if the presence of a dog has an impact on the relationship between participant and experimenter this could be explained by the dog affecting the placebo effect.

Methods: The effects of the presence of a dog were assessed with a standardized experimental heat pain paradigm (TSA-II) in a randomized controlled trial in healthy participants ($N=132$). After baseline measurements of pain threshold and tolerance participants were randomly assigned to one of the four conditions: a) only placebo b) placebo, dog present, c) only dog present c) no placebo, no dog present. Participants in the dog condition were then introduced to the dog. Participants in the placebo group were told that they will receive an analgesic cream to investigate how the cream affects their pain perception. After that, pain threshold and tolerance were measured again. Primary outcomes were objective heat pain threshold and tolerance.

Results: Primary outcomes showed no significant differences between the four groups regarding objective heat pain tolerance and objective heat pain threshold.

Conclusions: The presence of a dog did not have any impact on the placebo effect. Therefore, this study has refuted the hypothesis that the presence of a dog affects the relationship between health provider and patient.

105 The association between dog-owner relationship and mental well-being: a cross-sectional study

Aikaterini Merkouri¹, Rebecca Purewal², Dr Marguerite O'Haire³, Dr Carri Westgarth^{1,2}

¹Institute of Veterinary Science, University of Liverpool, Liverpool, United Kingdom.

²Institute of Infection and Global Health, University of Liverpool, Liverpool, United Kingdom.

³College of Veterinary Medicine, Purdue University, West Lafayette, USA

Introduction: Dog ownership is believed to benefit the well-being of individuals but, contrary to popular belief, there is limited evidence to suggest that owning a dog is associated with improved health or that dog owners with stronger attachment to their pets experience better mental health. This study investigates whether dog owners with stronger attachment to their dogs also experience better mental health.

Methodology: The participants (n=1693, adult UK dog owners) completed a structured questionnaire distributed in social media. The owners' health was measured using PROMIS validated short item survey questions regarding depression, anxiety, emotional support, and companionship. The dog-owner relationship was measured using the validated Monash Dog-Owner Relationship Scale (MDORS), which has three subscales; interaction, emotional closeness, and perceived costs. Kruskal-Wallis and multivariable linear regression analyses were used on logged health outcomes, adjusting for owner demographics and dog walking.

Main Results: Higher scores on perceived costs of dog ownership (lower burden) was associated with lower (better) scores for anxiety (B=-0.005, 95%CI=-0.007to -0.003, P<0.001), depression (B=-0.005, 95%CI=-0.007to -0.003, P<0.001), emotional support (B=-0.005, 95%CI=-0.007 to 0.003, P<0.001), and companionship (B=-0.005, 95%CI=-0.007 to -0.003, P<0.001). Increased pet-owner interaction was associated with lower (better) companionship score (B=-0.003, 95%CI=-0.005to 0.000, P=0.03). However, greater emotional closeness was associated with greater (poorer) anxiety (B=0.004, 95%CI=0.003 to 0.006, P<0.001) and depression (B=0.006, 95%CI=0.004 to 0.008, P<0.001). When the total MDORS scores were calculated, a closer dog-owner relationship was associated with lower (healthier) emotional support (B=-0.001, 95%CI -0.002 to 0.000, P=0.02) and companionship (B=-0.001, 95%CI=-0.002to-0.001, P=0.001).

Principle conclusions and implications for field: This study suggests that stronger dog-owner relationships are associated with greater feelings of emotional support and companionship but not necessarily better mental health in terms of symptoms of anxiety or depression. Direction of causality cannot be inferred as people with poor mental health may get dogs to relieve symptoms.

111 Minority stress, human-animal interaction, and resilience in LGBTQ+ young adults: Testing a mediation model

Jennifer L Murphy, [Angela Matijczak](#), Camie A Tomlinson, Dr Shelby E McDonald

Virginia Commonwealth University, Richmond, USA

Introduction: Although there is emerging evidence that companion animals are important sources of comfort and support for many LGBTQ+ (lesbian, gay, bisexual, transgender and other sexual and gender minority identities) individuals, little is known about the interplay between minority stress, human-animal interaction (HAI), and adjustment in this population. To address this gap in the literature, the current study examined whether attachment to pets mediates the relationship between minority stress and resilience among LGBTQ+ young adults.

Methodology: Well-established measures of minority stress, HAI, and resilience were administered to LGBTQ+ young adults between the ages of 18 and 21 years (N=150; 37% racial/ethnic minority). Participants were recruited via convenience sampling methods in partnership with community agencies. Confirmatory factor analysis was used to verify the appropriateness of the measures for the current sample. Path analysis (using the bootstrapping technique in Mplus) was used to examine direct and indirect associations between minority stress, pet attachment, and resilience, adjusting for the effects of demographic factors.

Findings: The hypothesized path model fit the data well (RMSEA=0.01, CFI=1.0, TFI=1.0). Results of the mediation model indicated that minority stress was significantly associated with an increase in attachment to pets ($b=0.17$, 95% CI [.05, .29]), which, in turn, was associated with increased resilience ($b=0.27$, 95% CI [0.11, 0.42]). The total effect of minority stress on resilience was non-significant, suggesting a significant indirect effect of minority stress on resilience via attachment to pets ($b=0.04$, 95% CI [.02, .09]).

Conclusions: Results of this study suggest that minority stress may lead LGBTQ+ young adults to seek out relationships with pets, which in turn, may promote resilience in the face of adversity. Further research is needed to explore longitudinal reciprocal associations between minority stress, HAI, and well-being over time, and mechanisms through which attachment to pets may promote resilience in this population.

Presentation type Oral flash pre-recorded

8 Promoting Client Wellness in Animal-Assisted Counseling through Measurable Standards

Dr Elizabeth Kjellstrand Hartwig

Texas State University, San Marcos, USA

Introduction: As the practice of animal-assisted counseling (AAC) flourishes, the need for measurable standards in AAC has evolved. Optimal client mental health is best attained when measurable standards and gatekeeping are in place to ensure strong clinical skills are practiced (Bond, 1993; Teixeira, 2017). Current AAC competencies offer guidelines for the practice of AAC, yet these competencies are not measurable and thus do not provide clear requirements for hours of AAC training, supervision, and experience. Ethical standards mandate counselor educators to act as gatekeepers for the counseling profession (ACA, 2014; CACREP, 2016). Yet who is gatekeeping the practice of AAC when measurable standards do not exist?

Methodology: The purpose of this study was to identify standards in AAC as a means to recommend measurable criteria for an AAC credentialing process. Thirty-eight educators, researchers, program directors, practitioners, and students who have training and experience in AAC participated in this study using an online researcher-developed survey instrument. Responses were analyzed in SPSS using descriptive statistics.

Main Results: Participants identified prerequisites for practitioners, knowledge content areas, informed consent topics, and clinical experience skills that were most important for AAC sessions. Outcomes also identified that practitioners interested in pursuing AAC as a specialization area should complete an average of 117 training hours, 22 live supervised experience hours, and 141 post-training supervised experience hours.

Principal Conclusions and Implications: The practice of AAC does not currently have a credentialing process in place with requirements for practitioners in AAC training, skills, experience, and supervision. The findings from this study identified measurable criteria in AAC training and supervision as recommendations to be implemented in AAC credentialing programs. As the interest and training opportunities in AAC grow, the AAC research community should continue to strive for a better understanding of quality training, supervision, and credentialing standards.

71 How is One Health Represented in the Research Literature of Human-Animal Interactions? A Content Analysis.

Jane Kinkus Yaticilla¹, John Eddie Ekakoro², Audrey Ruple²

¹Purdue University Libraries & School of Information Studies, W Lafayette, IN, USA.

²Purdue University Department of Public Health, W Lafayette, IN, USA

Introduction: According to the One Health Commission, “One Health is a collaborative, multisectoral, and trans-disciplinary approach--working at local, national, and global levels—to achieve optimal health and well-being outcomes recognizing the interconnection between people, animals, plants, and their shared environment (*What is One Health?* One Health Commission, n.d.). Considering that the One Health Commission lists “human-animal bond” as one of the areas requiring urgent attention, all research articles that address human-animal interactions (HAI) can be seen as relevant to the One Health conversation. This study attempts to quantify how One Health is represented in a set of HAI research articles.

Methodology: This study is a content analysis of the abstracts of HAI-related research articles obtained from the multidisciplinary database Web of Science Core Collection by searching several HAI terms. 2990 article citations and abstracts were retrieved and imported into NVivo software for coding. Two researchers separately coded the abstracts and combined their results.

Main Findings: The average number of articles per year increased steadily from 1966 through publication year 2019. Preliminary results indicate that the positive effects of HAI on human health or wellbeing were represented far more frequently in the literature than either the effect of HAI on non-human animal health/welfare or the relation of HAI to either animal health/welfare or the environment.

Principle Conclusions and Implications: Research into the effect of HAI on non-human animal health or welfare or on the shared environment is growing more slowly compared to the more developed research area that addresses human health or wellbeing. This content analysis of the literature of HAI indicates that a greater focus is on human health or wellbeing. With regard to One Health, there is room to expand research on the impact of HAI on the animal’s health or wellbeing as well as on the shared environment.

98 Benefits of Emotional Support Animals: An Evaluation of the Hope and Recovery Pet (HARP) Program

Dr Janet Hoy-Gerlach¹, Dr Barry Scheuermann¹, Dr Mamta Ojha¹, Dr Aviva Vincent^{2,3}

¹University of Toledo, Toledo, USA. ²Fieldstone Farm TRC, Chagrin Falls, USA. ³Case Western Reserve University, Cleveland, USA

Introduction. While there is much media coverage and controversy surrounding Emotional Support Animals (ESAs), there is a dearth of research about them. This

paper describes findings of a longitudinal, mixed-method pilot study on impact of ESAs placed with 11 adults with mental illness.

Methodology. Through HARP - a collaboration between a humane society, a human healthcare system, and a university - 11 shelter animals were placed as ESAs with 11 adults with mental illness. Before ESA adoption, baseline data was collected on: oxytocin, cortisol, and alpha amylase (saliva samples); depression (Beck Depression Inventory); anxiety (Beck Anxiety Inventory), and loneliness (UCLA Loneliness Scale). Post-ESA adoption, home visits were done at: 1 month; 3 months; 6 months; 9 months; and 12 months. At visits, an initial saliva sample was collected; the participants then engaged in focused interaction (play, petting, etc.) with their ESA for ten minutes, and a second saliva sample was collected. At 12 months, the scales were also repeated, and a qualitative interview was conducted.

Main Results. There was a statistically significant decrease in depression, anxiety and loneliness scores. Decreases in loneliness scale items relating to lacking companionship ($p=.000$), feeling alone ($p=.001$), and feeling isolated ($p=.01$) were also noteworthy. While not statistically significant, a consistent pattern of cortisol decreases and oxytocin increases emerged after ten-minute focused ESA interactions, indicating participants did experience increases in oxytocin and decreases in cortisol after focused interactions. Qualitative data indicated participants attributed mental health improvement to having ESAs.

Principal Conclusions and Implications for Field. Findings, taken together, suggest how ESAs may benefit individuals living with chronic mental illness. This study also demonstrated the feasibility and value of this partnership model between a humane society and a human healthcare system, as well as the capabilities of shelter animals to serve as ESAs.

101 Effect of the presence and contact of a dog on the neuronal activity of healthy persons

Rahel Marti^{1,2}, Milena Petignat^{1,3}, Dr med. Margret Hund-Georgiadis², Dr Karin Hediger^{1,3,2}

¹University of Basel, Department of Clinical Psychology and Psychotherapy, Basel, Switzerland. ²REHAB Basel, Clinic for Neurorehabilitation and Paraplegy, Basel, Switzerland.

³Compas - Institute for nature-based and animal-assisted interventions, Basel, Switzerland

Introduction: Many positive effects of animal-assisted interactions on mental and physical health are known today. However, the mechanisms behind these effects are not yet evident. In this study, we investigated the neuronal reaction to the presence of a dog to better understand possible mechanisms.

Methodology: Twenty healthy individuals each participated in six sessions. In three sessions, the subjects had contact with a dog and in three control sessions, they interacted with a plush animal. Each session had five different phases of two minutes each. The intensity of the contact to the dog or the plush animal increased stepwise

over the first four phases. We measured the oxygen saturation of the blood in the frontal lobe with functional near-infrared spectroscopy (fNIRS) to assess brain activity.

Main Findings: In both conditions, the amount of oxygenated blood increased significantly over the five phases ($t(30.3) = 10.60, p > 0.001$). The oxygenated blood was higher in the dog condition compared to the control condition ($t(774.20) = -2.628, p = 0.022$). Furthermore, the increase in oxygenated blood in the dog condition became more pronounced over the three sessions, while the increase in the control condition became weaker over the three sessions ($t(795.70) = -3.389, p = 0.030$). Deoxygenated and total blood showed similar patterns.

Principle Conclusions: The patterns indicate that brain activity increases when more stimulation is offered. The results show that an interaction with a dog evokes more brain activity compared to the control condition. Furthermore, repeated contact with a dog leads to an increase in brain activity. A possible explanation for this increase is the resulting relationship between the participants and the dog, leading to higher interest in and attention towards the dog.

107 Preliminary findings from the Pets for Life as One Health Study

Sloane M. Hawes¹, Amanda Arrington², [Kevin Morris](#)¹

¹Institute for Human-Animal Connection, Graduate School of Social Work, University of Denver, Denver, USA. ²The Humane Society of the United States, Washington D.C., USA

Introduction: The Humane Society of the United States' Pets for Life (PFL) program uses a person-centered approach to break down barriers to accessing veterinary care and other pet services in underserved communities. A four-year study is being conducted to measure the effects of this companion animal-focused intervention on community-wide health within the One Health framework.

Methodology: Four demographically matched communities, two urban and rural pairs, have been enrolled in the Pets for Life as One Health Study. One in each pair is receiving PFL programming while the other initially serves as a comparison across a variety of data gathered at both the individual resident and zip code levels. The primary data are responses to a survey instrument, which was developed using an exploratory sequential methodology, that measures residents' perceptions of human, animal, and environmental health, as well as measures of the interconnectedness of these One Health triad components. An additional survey used to initially engage residents gathered data on pet ownership at the household level.

Results: During the first year of the study, approximately 750 One Health Community Assessments were administered using a systematic door-to-door protocol in the four study communities. A detailed factor analysis of these data indicates that the instrument is highly reliable (Cronbach's $\alpha = 0.943$). While the average pet ownership for the four communities is consistent with that predicted by reported data, the rates of dog ownership varied substantially between the urban and rural communities.

Conclusions and Implications: The combined data sets represent one of the most detailed assessments of pet ownership and perceptions of community health across the One Health framework to date. Findings from the Pets for Life as One Health Study are anticipated to support the importance of including veterinary access and companion animal health in creating healthy communities.

194 The potential of dog-assisted therapy in neurorehabilitation of children with severe neurological impairment: an explorative study

Dr Karin Hediger^{1,2,3,4}, Friederike Boek¹, Julia Sachers¹, Evelyn Kluger⁵, Ulrike Blankenburg⁵, Martina Schauddeck⁶, Prof. Gerhahrd Kluger^{5,2}

¹University of Basel, Basel, Switzerland. ²Paracelsus Medical Private University, Salzburg, Austria. ³REHAB Basel, Basel, Switzerland. ⁴Swiss Tropical and Public Health Institute, Basel, Switzerland. ⁵Schön Klinik, Vogtareuth, Germany. ⁶Schön Klinik, Basel, Switzerland

Introduction: Dog-assisted therapy is increasingly applied in rehabilitation with children with severe neurological impairments. However, there are only anecdotal reports investigating its effects. The aim of this study was to evaluate the potential of dog-assisted therapy in pediatric inpatient neurorehabilitation by identifying characteristics of patients receiving this therapy, characteristics of the therapy sessions, and to evaluate feasibility and extent of goal achievement.

Methodology: We retrospectively analyzed 850 dog-assisted therapy sessions from 196 children and adolescents (Md=5.50, 0.58-20.33 years) suffering from severe neurological impairments of various etiologies. We extracted patient and session characteristics. We analyzed predefined goals with content analysis and examined to what extent the goals were met. Data were analyzed using descriptive statistics.

Main Findings: Patients received an average of 4.34 therapy sessions. In total, 247 of 392 predefined goals (63%) were reached during dog-assisted therapy. The predefined goals mostly documented aimed at facilitating contact and communication (15%), attention performance (14%) and having fun (13%) and the selective use of motor skills (13%). The most frequently achieved goal was “enhancing fun” (83%), followed by “establishing contact and communication” (81%) and “relaxation” (71%). Functional goals were less frequently achieved (39% on average). Only one critical incident regarding the dogs’ safety occurred.

Principle Conclusions and Implications: Dog-assisted therapy is a feasible approach and can be an effective way to facilitate emotional, social and psychological goals in children and adolescents with severe neurological impairment.

116 Chasing the pet effect: How the history of psychotherapy outcome research informs our understanding of the generative effects of the human-animal bond.

Dr Chris Blazina¹, MA, LMHC Elizabeth Harvey²

¹Psychologist independent researcher, ABQ, USA. ²LMHC private practice, Las Cruces, USA

Introduction: The pet effect has been a topic of interest within HAI research. The notion that interacting with animals, especially those deemed as companion animals or within animal-assisted therapy (AAT) or animal-assisted intervention (AAI) scenarios, leads to increases in health and wellness is controversial. The paper proposes that examining the history of psychotherapy outcome research informs how the human-animal bond can be viewed as a potential generative agent. Taking this approach offers those within the HAI field opportunities to explore legitimacy of findings of HAI's impact on human well-being.

Methodology: The presentation parallels the search for the pet effect with how the field of psychology has substantiated the wellness effects of psychotherapy. Key approaches include considering the impact of attachment specific bonds, affiliation needs, the complicated nature of dose-effect relationship, experiences of emotional attunement, and how the bond provides ontological structure. These characteristics can be thought of as underlying common factors associated with the human-animal bond in various settings that have the potential to produce a pet effect. In a similar way, the psychotherapy relationship dyad has proposed various common factors across all forms of successful psychotherapy. In both scenarios, common factors are also based on key relational elements.

Main Findings: The paper explores parallels between psychology's search for empirical support for the effectiveness of psychotherapy and the current HAI research discussing the pet effect. The paper discusses methodological issues that include pros and cons of randomized controlled trials as the gold standard for studying the pet effect. Again, whether it is with psychotherapy or human-animal interaction, there is an underlying importance of the relationship. However, key aspects of generative relationships are difficult to quantify.

Principal Conclusions and Implications for Field: Discussing the pet effect in context of other helping relationships offers new directions for HAI theory and research.

Presentation type Poster

1 Dogs as the New Medicine? Facebook's roles within the emotional support dog community and its effect on the rise in popularity of emotional support dogs.

Ms. Tiamat Warda - University of Exeter, Exeter, Devon, United Kingdom

As levels of mental and emotional health and well-being have declined steeply in recent years, the use of social media platforms such as Facebook have risen - seemingly simultaneously. During this time, it has become commonplace for mental health professionals to recommend and prescribe dogs. These dogs are known as emotional support animals. However, this paper places a focus on dogs and therefore refers to them as emotional support dogs. Emotional support dogs are prescribed in a manner similar to medicine for individuals experiencing depression, anxiety, loneliness, trauma and other mental and emotional disabilities. This research explores the question: What role does Facebook play within the emotional support dog community and its recent rise in popularity? Based on data collected from 612 anonymous survey responses and ten interviews, four main roles were identified. Firstly, excessive Facebook use can lead to addictive tendencies. This paper argues that Facebook addictions can cause individuals to seek social interaction from emotional support dogs. Secondly, Facebook acts as a platform for emotional support dog communities and allows for support and information exchanges. Thirdly, the content which is shared on Facebook about emotional support dogs can either greatly negatively or positively affect emotional support dogs, their human companions and the general public. The fourth role which Facebook plays is as a platform for advertisements about emotional support dog registry scams and for individual users to discuss various fraudulent behaviours.

4 Gone to the dogs: Pet dogs in the sleep environment of patients with chronic pain

Professor Cary A Brown¹, Ms Yuluan Wang¹, Professor Eloise Carr²

¹University of Alberta, Edmonton, Canada. ²University of Calgary, Calgary, Canada

Introduction: Chronic pain is prevalent in many industrialized nations. Pain takes a significant toll on personal physical and mental wellbeing, and exerts very high costs to families, employers and society. Encouragingly, research shows that pain and sleep have a reciprocal nature, thus suggesting that interventions to improve sleep may decrease pain symptoms. To-date, we know little about how companion dog ownership may influence the pain/sleep relationship. Typical advice to remove pets from the bedroom negates the possible positive benefit of human-animal co-sleeping;

a more nuanced examination is warranted. The objective of this study was to investigate pain patients' perception about the impact of their pet dog on sleep.

Methodology: A content analysis of interview data exploring patients' perception about the impact of the pet dog on sleep. The qualitative dataset was extracted from a subgroup of participants in a larger study focused on the pain patient/pet dog relationship. The subgroup was asked, "Does your dog have a positive or negative impact on your sleep?" Using an iterative approach, the data were thematically coded.

Main Findings: Theme codes included: companionship; physical presence/'cuddles'; routine/schedule; distraction from anxiety/worry at night; reassuring/protective presence; active intervention to keep participant safe; daytime activity to promote sleeping at night; and reciprocal concern for the sleep of the pet dog.

Principle Conclusions and Implications: Companion dogs may play important roles in helping some chronic pain patients achieve better quality sleep. Routine advice to remove the dog to improved sleep could be counter-productive and more nuanced and contextualized recommendations should be developed.

39 Emotional Reliance on Pets: Effects of Mental Health Stigma, Mental Illness Diagnosis, and Consideration of Relationship Quality Amongst a National Sample of U.S. Pet Owners

Jennifer W. Applebaum - University of Florida, Gainesville, FL, USA

Introduction: Therapy animals can provide short-term benefits to well-being, however, little is known about the potential mental health benefits of the family pet. In this study I seek to explore the relationship between mental illness diagnosis, stigmatization from family and close personal network members, and frequency of emotional reliance on the pet, with special consideration of the quality and nature of the human-pet relationship.

Methodology: This study employs a series of generalized ordered logistic regression models on a subset of pet owners from the 2018 U.S. General Social Survey (n = 614), weighted to be representative of all U.S. pet owners.

Main Findings: Mental illness diagnosis (OR = 2.01, $p < .01$) and perceived stigma from family and close personal network members (OR = 1.15, $p < .05$) both increase the likelihood of seeking comfort from pets. Compared to those who "never" considered their pet to be a family member, those who considered their pet a family member "sometimes" had four times the odds of seeking comfort from them (OR = 4.22, $p < .01$), "often" had nine times the odds (OR = 9.17, $p < .001$), and "almost always" had forty-six times the odds of seeking comfort from their pet (OR = 46.14, $p < .001$).

Conclusions: These findings indicate that the family pet can serve as a mental health coping mechanism, particularly in the absence of other support systems. Given that the biggest predictor of emotional reliance on the pet was the nature and quality of

the relationship, these findings support the claim that pets can be beneficial to wellbeing for some. Interactions with companion animals differ from interactions with therapy animals, and pets should not be considered a therapeutic intervention for all. Relationships with pets are an important component of the complicated biopsychosocial contributors to mental health.

40 Effect of Pet Interaction on Stress Reduction and Positive Mood Enhancement among Pet-Owners and Non-Owners

Ms Aliya Khalid^{1,2}, Dr Saadia Dildar²

¹Department of Social Sciences, Iqra University Islamabad Campus, Islamabad, Pakistan.

²Clinical Psychology Unit, Government College University, Lahore, Pakistan

Introduction. There is considerable evidence linking HAI with improved mental well-being for students. Companion animals can be additional sources of comfort and support for students as they go through major life transitions. However, such student-pet dynamics may be affected by religious and cultural connotations in certain societies. The present study aimed at examining the role of HAI in regulating stress and mood for university students in a collectivist culture.

Methodology. The study was quasi-experimental with pretest-posttest, between-subjects design. Sample consisted of 180 participants randomly assigned into four experimental groups (Groups 1 and 2: Pet-owner interaction with either dog or cat; Groups 3 and 4: Non-owner interaction with either dog or cat) and two control groups (pet-owners/non-owners reading magazine). Measures of stress (Short Stress State Questionnaire) and mood (Brief Mood Introspection Scale) were taken before and after short-term interaction with the assigned study animal. Ethical treatment was ensured.

Main Findings. Analysis showed lower stress scores and higher positive mood scores for both pet-owners and non-owners for the pet interaction groups as compared to control groups post-interaction. Nonsignificant differences were found between the dog and cat interaction groups for both pet owners and non-owners. Pet-owners scored lower on worry (Independent Sample t-test; $t = -3.07$; $p < 0.001$) and higher on positive mood post-interaction ($t = 1.93$; $p < 0.05$) as compared to non-owners. Participants interacting for more than five minutes had lower scores on worry ($t = 3.08$; $p < 0.001$) and higher scores on positive mood post-interaction ($t = -2.65$; $p < 0.01$).

Principal Conclusions and Implications for Field. The study provides evidence for the beneficial effects of HAI pertinent to stress reduction and positive mood elevation for pet-owners and non-owners in a collectivist culture. Further in-depth and cross-cultural studies are required to better apprehend the dynamics of human-animal relationships and associated health benefits in such societies.

47 Service Dogs as Stress Relievers? - Interdependent Dog Companionship and Its Impact on the Assessment of Stressful Situations

MSc. Christine Krouzecky, MSc. Lisa Emmett, BSc. Anna Lässer, MSc. Jan Aden, MSc. Anastasiya Bunina, Prof. Birgit Ursula Stetina

Sigmund Freud University, Vienna, Austria

Introduction. Studies in the field of human-dog-interaction often focus on positive effects of the relationship between humans and dogs on human wellbeing. However, one of our recent studies on human stress management shows, that dog owners evaluate everyday stressors to be more stressful than non-dog owners. It might be assumed, that an overestimation of the dog's protective role regarding stress has taken place. The aim of the present project is to get a deeper insight focusing on uncommon human-dog relationships, starting in this study with the relationship between individuals with disabilities and their service dogs.

Methodology. In a replication (Krouzecky, et al.,2019) with preliminary results service-dog owners were surveyed online using the Lexington Attachment to Pets Scale, the Sense of Coherence Scale and the Social Readjustment Rating Scale. So far 19 voluntary participants took part and were compared with the sample of dog owners from the former study using a matched pair method was. Statistical analyses included t-tests, correlations, interaction-analyses and Cohens d as effect size measure.

Results. Results show no significant differences between dog owners and service dog owners. However, there is a statistical tendency for owners of service dogs to rate critical life events as less stressful than dog owners of the previous study ($t(19)=-1,30,p=.180,d=.424$). Moreover, data show a statistical tendency to the effect that dog owners of service dogs indicate a stronger relationship to their dogs than dog owners of the former study ($t(19)=1.16,p=.261,d=.384$).

Principle conclusions and implications: These findings suggest that individuals with disabilities might assess critical life events as less stressful due to experienced challenges and a resulting higher level of functioning as described as the posttraumatic growth effect. In addition, data indicate that an interdependent and complex relationship between humans and their service dogs leads to a stronger human-dog-bond.

88 The impact of animal assisted interventions on psychosocial and behavioural functioning of children and young people with Attention Deficit Hyperactivity Disorder (ADHD): A systematic review

Miss Unaiza Iqbal, Professor Joanne Williams, Dr Monja Knoll

School of Health in Social Sciences, University of Edinburgh, Edinburgh, United Kingdom

Introduction: Animal-assisted interventions (AAI) are a promising alternative mode of treatment for physical and psychological illnesses. Although the AAI research is growing but much of the scientific research has focussed on specific human groups such as children with Autism Spectrum Disorder (ASD), while the impact of AAI on other disorders like Attention Deficit Hyperactivity Disorder (ADHD) has received far less research attention (O’Haire, 2012). The aim of the current review was to systematically review the published research on AAI and ADHD in children and young people.

Methodology: Major databases such as PsycINFO, CINHL, EMBASE, Web of Science, MEDLINE, PubMed, Cochrane library and Scopus were searched using key terms for three variables; AAI ,ADHD in children/young people. Inclusion criteria required that the studies were RCT’s, comparing AAI with other treatments or non-RCT’s, evaluating AAI for ADHD in children and young people. Ten Studies were identified on the basis of inclusion criteria and submitted to narrative synthesis of findings and quality assessment.

Main findings: Quality assessment revealed that seven out of ten studies were of ‘good’ quality. All of the included studies assessed the impact of AAI on the clinical symptoms and severity of ADHD. Five of the studies reported improvements in ADHD symptoms following AAI. Two studies reported reduction in symptom severity following AAI. Secondary outcomes including problem behaviours, social skills, self-esteem, quality of life and motor skills were also investigated in some studies and significant positive changes were observed in the AAI groups.

Principal conclusions/implications: Although there is a lack of research, this review has shown that AAI may have beneficial impact on children with ADHD. Clinical trials using higher quality methodological designs are required to fully explore the effectiveness of AAI in treating the symptoms of ADHD and the underlying mechanisms involved.

90 Effects of contact with a therapy dog on social anxiety in adolescents

Dr Megan Mueller¹, [Erin King](#)¹, Dr Eric Anderson², Dr Heather Urry¹

¹Tufts University, Medford, USA. ²Maine Medical Center Research Institute, Scarborough, USA

Introduction: An innovative method of addressing anxiety-related conditions is the growing field of animal-assisted interventions, in which animals are incorporated in activities for the purpose of meeting therapeutic goals (Jegatheesan et al., 2014). This study explores the mechanisms by which interacting with a therapy dog may reduce anxiety, and tests whether such an interaction reduces anxiety in adolescents with varying levels of social anxiety.

Methodology: A sample of 75 adolescents aged 13-17 were randomly assigned to one of three experimental conditions that varied the interaction with a trained therapy dog during a stressful social event: 1) interaction with a stuffed toy dog (control condition); 2) social interaction (no physical contact) with a real dog; and 3) social and

physical interaction with a real dog. Adolescents participated in the Trier Social Stress Task for Children (TSST-C; Buske-Kirschbaum et al., 1997), and participants self-reported anxiety during the TSST-C was measured using the State-Trait-Anxiety Inventory (STAI; Spielberger et al., 1983).

Main Findings: We conducted a three-way analysis of variance using the STAI data. This analysis revealed expected changes in self-reported anxiety suggesting that the TSST-C was anxiety-provoking in this sample, $F(3.32, 185.84)=145.72$, $MSE=2.63$, $p<.001$, $\eta^2=.592$. Contrary to our hypotheses, this analysis did not reveal a main effect of condition, $F(2,56)=0.68$, $MSE=6.93$, $p=.509$, $\eta^2=.011$. There also was no interaction between condition and pre-existing social anxiety, $F(4,56)=0.40$, $MSE=6.93$, $p=.805$, $\eta^2=.013$.

Principle Conclusions and Implications: The TSST-C task prompted a significant increase in anxiety in our participants. However, the presence of a real dog did not reduce anxiety significantly relative to the presence of a stuffed dog in the control condition. These results suggest that brief contact with a therapy dog during an acute social stressor may not be sufficient to reduce social anxiety for adolescents.

94 Including therapy dogs in behavior and developmental treatments

Candela Jasmin Hüsgen¹, Dr Nienke C. Peters-Scheffer²

¹Foundation Hulphond Netherlands, Herpen, Netherlands. ²Radboud University, Nijmegen, Netherlands

Introduction: Although there is an upcoming trend to include therapydogs into behavioral and developmental treatments for children, scientific research on this topic is scarce. This study aims to investigate the potential effects of dog assisted therapy with a literature review and a Delphi study.

Methodology: Two methods were used to investigate which effects therapydogs have in behavioral and developmental treatments. First a Delphi study of three rounds was conducted to investigate the experiences of trained AAT-therapist from 'Hulphond Nederland' and 'Tier als Therapie, Vienna' who work with therapydogs. Between rounds, researchers summarized findings based on four categories. Parallel literature research was conducted to explore if there are other studies on a tirade working setting including therapydogs. Extraction processed and summarized in four steps lead to the results which were compared to the findings of the Delphi study.

Results: In the Delhi study and literature review (potential) effects were summarized in four categories: arousal, social skill learning, reducing symptoms and relation client-therapist. In spite of small differences, all effects of the therapydog can be reported as well by the therapists as in the literature review. Symptom reduction and arousal have the smallest proportion in both studies while the client-therapist relation and learning skills are very high.

Conclusion: It can be concluded that the experience of the professionals matched the findings of earlier studies. Surprisingly both studies found results for all four categories. The most striking result to emerge from the literature study are the findings of the relationship between client and therapist. While this is the most complex category to measure it reports the most findings. This is an important issue for future research on this topic.

145 Promoting Health and Well-being for Humans, Animals, and Environment: The Role of the Social Sciences in the Promotion of Sustainable Development

Dr Hagit Brandes - *, *, Israel

Since the 1950s human activity related to the biosphere increased in intensity and in scope due to globalization. Such activities hold potential for adverse consequences to health and well-being for humans, animals (domestic and wildlife) and the environment which are evident in reports such as the planetary boundaries, recent UN report on the state of biodiversity and others. As the aspiration is to allow sustainable human development, in 2015 the UN introduced a new sustainable development agenda.

Sustainable development efforts can be examined through the One Health and the Social Ecological Systems paradigms. Briefly defining, the One Health paradigm recognizes the interconnectedness of human-animal-environment health and well-being and is primarily concerned with public health and diseases. The Social Ecological Systems paradigm recognizes the mutually bidirectional effects of humans and the biosphere and is primarily concerned with ecosystems conservation. Although both paradigms call for multidisciplinary collaboration in understanding the complexity of the systems involved, they still pretty much operate in separate silos.

There are several roles the social sciences are well-suited to provide in order to bridge the social gap in both paradigms aimed at promoting sustainable development. Human interactions with domestic and wildlife animals and their ecosystems are determined by social, cultural, economic and political factors. Such factors are at the core of the social sciences research and practice. The presentation will exemplify and discuss several human-animal-biosphere interactions in light of these factors.

Critique- both OH and SES reflect anthropocentric views. In OH the health and well-being of animals and ecosystems and animal welfare are being considered only to the extent that they affect human health. Similarly, ecosystems conservation in SES is mostly concerned with ecosystems services. Some writers within the critical social work cogitation consider this practice oppressive and morally limiting and call to promote a more biocentric approach.

203 Role of the Human-Animal Bond Between Facility Dogs and Pediatric Healthcare Professionals

Clare Jensen, Kerri Rodriguez, Jessica Bibbo, Dr Marguerite O'Haire

Purdue University, West Lafayette, USA

Introduction: Individuals working in high-stress environments, including healthcare, are at risk for job-related burnout. However, social support has been found to buffer adverse effects of burnout, and research suggests that dogs may provide social support with similar effects. Thus, it has been proposed that full-time hospital therapy dogs working with pediatric healthcare professionals to improve the patient experience (termed *facility dogs*) may also benefit their handlers. The present study's objectives include: 1) to compare the human-animal bond of handlers with facility dogs to that of control participants with pet dogs, and 2) to investigate the relationship between human-animal bond and job-related burnout.

Methodology: Participants included $N=130$ pediatric healthcare professionals ($M_{age}=37\pm 10$, 92% female) working with a facility dog (handlers; $n=65$) or without one (controls; $n=65$), matched on job, age, gender identity, and pet ownership. Independent t-tests compared human-animal bond and job-related burnout, measured by emotional exhaustion and perceived personal accomplishment. Linear regression probed for relationships between bond and burnout measures.

Main Findings: Overall, handlers reported bonds with facility dogs that did not differ from control participants' bond with pet dogs ($p=.259$). Burnout measures found no difference in emotional exhaustion between handlers and control participants ($p=.622$), but facility dog handlers did perceive greater personal accomplishment at work than control participants ($t=-5.12$, $p<.001$). Among handlers, there was no significant relationship between facility dog bond and burnout ($p's\geq .260$).

Principle Conclusions and Implications: Findings did not support the strength of human-animal bond as a significant mechanism for facility dogs' effects on pediatric healthcare professionals' burnout. This begins to inform what potential handlers may anticipate with the introduction of a facility dog into their careers and lives. Further, this study contributes to a foundation for future research investigating how and why a facility dog's presence may be associated with human outcomes.

207 The physiological effect of dog-walking on oxytocin secretion in owners and dogs

Dr Junko Akiyama¹, Dr Mitsuaki Ohta²

¹Yamazaki University of Animal Health Technology, Hachioji, Tokyo, Japan. ²Tokyo University of Agriculture, Atsugi, Kanagawa, Japan

Introduction: We have held the dog-walking event at the Yamazaki University of Animal Health Technology. The purpose of this event is to help the owner and the dog together to become healthy. The aims of this study were (1) to examine the effects of physiological and psychological responses on the owners and their dogs before and after dog-walking and (2) to investigate the detailed physiological responses on several samplings during and after dog-walking.

Methodology: Dog walking was performed on a 2.0-km course in the event. We examined owners' psychological state before and after walking using the Profile of Mood States 2nd edition (POMS 2). A heart rate meter was worn to monitor the autonomic nervous activity. Salivary samples were collected both owners and dogs before, during, and after the walk. Quantitative analyses of oxytocin and cortisol were performed with enzyme immunoassay kits.

Main Findings: The Four negative mood states were significantly reduced after the walk. Owner salivary cortisol levels significantly decreased; their parasympathetic nervous system activity increased, and oxytocin levels rose after walk completion. The results for the dogs were somewhat being different. ECG data showed a significant increase in heart rate during walking in both dogs and their owners. Dog's LF and LF/HF suffered from artifacts and would require further sampling.

Principle Conclusions and Implications: Owner oxytocin levels were shown to increase during dog walking. In addition, increased oxytocin appears to result in decreased cortisol, suggesting that owners could reduce stress by walking with dogs, even after stressful work. It is clear that walking with a dog improves the physical and mental health of the owner. However, some owners showed positive or non-positive changes in oxytocin levels after walking. It is necessary for the owner to clarify the mechanism of the effect of the desired walk with the dog.

Animals in our lives - 4:20 - 5:40pm

Thursday, 3rd September

Presentation type Oral live

219 Job Stressors and Coping Strategies in Austrian Vets (Vet-Study 2019)

Prof. Birgit Ursula Stetina, Lisa Emmett, Robert Aslan, Anastasiya Bunina, Armin Klaps, Christine Krouzecky, Jan Aden

Sigmund Freud University, Vienna, Austria

Introduction: The veterinary practice means working within a triad and concurrent responsibilities towards patients, "their humans" and animal welfare in general. Moreover, high commitment which seems to be necessary for occupational success, especially within this professional group, might also lead to compassion fatigue or burnout triggered by "repeated exposure to traumatic events" such as abuse, illness or euthanasia. Accordingly, the goal of the Austrian "Vet-Study 2019" identify typical stressors, coping strategies and trends within these professionals.

Methodology: Using a cross-sectional design 340 veterinarians (males: 28.2%, females: 71.8%) were surveyed online including a self-report test battery with open-ended questions, a coping style inventory (SVF-120 Stressverarbeitungsfragebogen (Erdmann & Janke, 2008) and the Veterinary Job Demands and Resources Questionnaire (Vet-DRQ, Mastenbroek et al., 2013). Statistical analysis included descriptive methods, t-tests and Cohen's d as concurrent effect size measure.

Main Results: Participants stated on a rating scale (1-10) that they feel very burdened (10) by on-call duties (24.6%), relatively to stressors such as euthanasia (7.5%). Compared to the norm population results of the SVF-120 show that amongst other results veterinarians tend to *ruminate* ($t(198)=20.255, p<.001, d=1.53$) and women significantly tend to *take medication* ($t(195)=22.463, p<.001, d=1.67$). T-Tests of the Vet-DRQ subscales with regard to gender demonstrate for example that females show higher *Job insecurity* ($t(188.185)=-3.877, p<.001, d=0.57$) as well as *Shyness* ($t(256)=-3.630, p<.001, d=0.45$).

Principal Conclusions and Implications for Field: Consistent to other essential scientific results the present study refers once more to the stressful veterinary practice with simultaneous lacking support. Moreover, deficit coping strategies, which also may be related to the complex remit, enhance the vulnerability of veterinarians for stress-related illnesses and underline the need for professional support in veterinary training and practice. In addition to that the gender differences seem to reflect the power structure in the professional field.

85 Current Status of Instrument Development in the Field of Human-Animal Interactions

Dr Lauren Samet, Dr Helen Vaterlaws-Whiteside, Dr Melissa Upjohn, Dr Naomi Harvey, Dr Rachel Casey

Canine Behaviour & Research Department, Dogs Trust, London, United Kingdom

Critical Review

Introduction: The importance of using appropriate tools to measure human-animal interactions (HAI) is widely recognised. Continuing on from Wilson and Netting's (2012) review of HAI instruments up to 2008, this paper presents the results of a systematic literature review for HAI questionnaires created between 2009 and 2018, and discusses the current status of HAI tool design, suitability for use, limitations, and areas for further research.

Methodology: A systematic literature review was carried out to identify tools to measure human-animal interactions, attachments, and bonds, which were created in the ten-year period since previous reviews ended (i.e. 01/01/2009 to 31/12/2018).

Main Findings: Twenty-nine HAI questionnaires were identified using two sets of search terms. Measurement of companion animal HAIs dominated the instrument field, however, tools to assess HAI between exotic/zoo animals and keepers were also present. Some questionnaires began to explore evidence of relationship styles in addition to simply whether a bond or attachment was present. Tools showed a bias towards questions focussed on the human side of the HAI dyad, and most questionnaires had face validity, however 11 reported no other forms of validity/reliability testing.

Principal Conclusions and Implications for Field: Refinement of HAI terminology and a consistent use of definitions would assist efficiency of future interdisciplinary literature searches. Tools for working assistance animals were poorly represented and suggested that tailoring tools for purpose, not just for specific species, would be useful scope for future research. Prospective questionnaires must ensure that the animal's contribution to the HAI is fairly represented in questionnaire design, and ideally fully report validity/reliability testing to ensure published tools are fit for purpose and meet their construct validity.

References: Wilson, C.C. and Netting, F.E., (2012) The status of instrument development in the human-animal interaction field. *Anthrozoös* 25(1), pp.s11-s55.

168 “You wouldn’t ever be able to have them sleeping in your room, would you?” Companion animals, human rights in care homes and the concept of ‘defensible space’.

Professor Marie Fox¹, Professor Mo Ray², Dr Michael Toze²

¹University of Liverpool, Liverpool, United Kingdom. ²University of Lincoln, Lincoln, United Kingdom

Introduction: Companion animals can be an important emotional connection for older people. However, when s/he moves into the liminal space of a care home, the older person and her representative(s) often have difficulty in making informed choices about care homes, especially regarding matters that are not seen as an absolute need (Independent Age, 2016). The status of companion animals which may accompany them is ambiguous. Legally, such animals are classed as property, which typically means that decisions about them given low priority in decisions regarding care homes. Care homes adopt varying policies on companion animals, often prioritising organisational factors such as health and safety (Fossey, 2013), and staff efficiency (Nettleton, 2018; Evans, 2018). They also have to consider the preferences and rights of other residents. Companion animals may therefore be subject to an uneasy juxtaposition of considerations involving legal rights and responsibilities, practical and financial arrangements, and emotional connections. Both older people and animals may suffer through separation, re-homing or even euthanasia of the animal.

Methodology: Drawing upon qualitative interviews with managers, staff, residents and relatives, undertaken as part of a research project funded by the Dunhill Medical Trust, and doctrinal legal analysis of how care homes are governed this paper explores policy relating to companion animals in care homes, and examines what this tells us about use and ‘ownership’ of space within care homes.

Main Findings, Principal Conclusions and Implications: The paper analyses themes arising from our data, which raise issues of defensible space, human-animal emotional connections, and practical, financial and legal considerations. The paper concludes by considering the implications of these matters for residents, care staff as well as the social services and legal and veterinary professionals involved.

218 Evaluation of Fostering Compassion: An animal welfare education intervention for children at high risk of cruelty to animals

Prof Joanne Williams¹, Mrs Lesley Winton²

¹University of Edinburgh, Edinburgh, United Kingdom. ²Fostering Compassion, Ormiston, United Kingdom

Introduction: The purpose of this project was to assess the efficacy of an animal-assisted animal welfare education intervention designed for 'cared-for' children who are at heightened risk of engaging in animal cruelty. The intervention was developed by Fostering Compassion and comprised animal-assisted workshops to promote children's understanding of animal emotions, empathy, knowledge of welfare needs, and positive attitudes towards animals. The aim of this study was to evaluate the impact of workshop participation on children's: 1) beliefs about animal minds, 2) attitudes towards animal cruelty, 3) attachment to pets, 4) animal welfare knowledge, and 5) attitudes towards animal.

Method: Forty two children (21 male and 21 female; Mean age=8.76, SD=3.33) participated in the intervention evaluation. They completed short child-friendly pre- and post-intervention questionnaires comprised of 5 measures: belief in animal mind (Child-BAM); attitudes towards cruelty (CAAC); attachment to pets (SAPS); welfare knowledge; attitudes towards animals. Qualitative self-report questionnaire was administered to caregivers of participants for qualitative analysis.

Results: Analysis of pre- to post-intervention questionnaires revealed statistically significant improvements in scores for Child-BAM ($z = -2.34$, $p < .019$, medium effect size $r = .48$), Children's Attitudes towards Animal Cruelty ($z = -2.63$, $p < .009$, medium effect size $r = .31$), SAPS ($z = -2.79$, $p < .005$ medium effect size $r = .32$), animal welfare knowledge ($z = -4.38$, $p < 0.001$ (two-tailed)), and attitudes towards animals ($z = -3.14$, $p < .002$, medium effect size $r = .36$). Caregiver questionnaires revealed positive feedback on workshop content and delivery, and perceived impact on participating children.

Conclusions and Implications: This animal-assisted intervention for 'cared-for' children who are at high risk of animal cruelty was effective in promoting changes in cognitions and attitudes that underpin positive child-animal interaction. A limitation of the research was the lack of control group and further research is required to demonstrate the effectiveness of the programme on a larger scale.

Presentation type Oral flash pre-recorded

50 Valuing canine handlers' perspectives: Experiences and motivations for volunteering in canine-assisted interventions

Dr John-Tyler Binfet¹, Freya L. L. Green¹, Camille Xinmei Rousseau¹, Dr Christine Tardif-Williams²

¹University of British Columbia (Okanagan), Kelowna, Canada. ²Brock University, St. Catharines, Canada

Introduction: Canine-assisted interventions (CAIs) in higher education are increasing in popularity. The corresponding research has focused largely on understanding the impact of CAIs on student well-being and, to a lesser extent, the welfare of therapy dogs. Little remains known about volunteer handlers' experiences. To address this gap, this qualitative study explores handlers' experiences and motivations for volunteering in an on-campus CAI.

Methodology: Sixty handlers (87% female; $M_{age} = 41.92$, $SD = 12.96$) from a CAI program at a Canadian university completed a series of open-ended questions exploring their motivations for volunteering (i.e., What keeps you volunteering in the dog therapy program?), their volunteering experiences (i.e., What have you learned about you or your dog(s) in being a volunteer?), and their personal insights about what makes a strong dog-handler team. Salient themes in handlers' responses were identified using qualitative content analysis (Hsieh & Shannon, 2005).

Main Findings: Handlers were predominantly drawn to volunteering based on unique aspects of the program, as well as the student context. They identified the social aspect of the program as being a key benefit to themselves and their dog(s), and that they felt rewarded by their impact on the students. Key aspects of strong teams were identified, including handlers' awareness of their dog(s), and therapy dogs' calm and sociable manner.

Principle Conclusions and Implications: Experiences volunteering as canine handlers were overwhelmingly favourable. Handlers were especially attuned to the impact that volunteering in a CAI had on themselves and their therapy dog(s). Understanding the perspective of volunteer handlers is important as they are integral to the delivery of CAIs, and the retention of handlers is key to program sustainability. The significance of these findings within the broader context of CAIs and the implications for handler recruitment and retention are discussed.

16 Human personalities affect the lead tension while walking dogs on leash

Mr. Hao-Yu Shih¹, Mr. Fillipe Georgiou², Dr Mandy Paterson³, Dr Leander Mitchell⁴, Professor Nancy Pachana⁴, Professor Clive Phillips¹

¹Centre for Animal Welfare and Ethics, University of Queensland, Gatton, Australia.

²School of Mathematical and Physical Sciences, University of Newcastle, Callaghan, Australia.

³Royal Society for the Prevention of Cruelty to Animals, Queensland, Brisbane, Australia.

⁴School of Psychology, The University of Queensland, St. Lucia, Australia

Introduction: Humans' personalities influence their interactions with dogs. For instance, neurotic owners use more gestural and verbal cues when commanding dogs. On-leash dog-walking is an important human-dog interaction, and a tight lead can be detrimental to canine welfare. A tight lead may indicate a reactive dog but may also be influenced by the handler. This study aimed to explore whether people with different personalities affect the lead tension while walking dogs.

Methodology: The lead tension and pulling direction were quantified by the lead tension meter. Three-hundred-and-seventy walks, involving 111 dogs and 74 participants, were measured in an animal shelter. The lead tension meter was attached to a one-meter lead and was connected to the neck collar plus harness of dogs, while participants held the other end of the device. The lead tension and the number of pulling events, defined as bouts of pulling with the force > 0.1% of the dog's body weight, contributed by the handler were correlated with participants' personalities. Five personality traits (openness, conscientiousness, extraversion, agreeableness and neuroticism) were measured with the NEO FFI-3 test.

Findings: A multiple linear regression model using backward elimination revealed that volunteers scoring higher on neuroticism and extraversion caused greater maximal ($p = 0.002$, $p = 0.002$) and mean ($p = <0.001$, $p = 0.006$) tension. Volunteers who scored higher on openness ($p = 0.007$) pulled more frequently during the walk, while volunteers scoring higher on agreeableness ($p = 0.005$) pulled less often.

Principal conclusions and implications: The lead tension and pulling frequency while volunteers were walking shelter dogs on-leash were influenced by human personalities. Therefore, matching human personalities with canine behaviours may benefit the welfare of dogs.

77 Do owners' attachments to their dogs and perceptions of dog intelligence differ by dog-keeping style?

Ayaka Shindo, Dr Mariko Yamamoto - Teikyo University of Science, Yamanashi, Japan

Introduction: In Japan, it is not uncommon for owners to confine their dogs inside a cage or small pet fence, even while at home. This study investigated whether owners' attachments to dogs and perceptions of dog intelligence differed by style of dog-keeping.

Methodology: Current dog owners answered a web-based survey. Attachment to their dogs¹⁾ and perceptions of dog intelligence²⁾ according to dog-keeping style were compared.

Main results: From 326 valid responses, 23.6% answered they kept their dogs inside a cage/fence (A), 38.7% that they kept their dogs inside without using a cage/fence (B), and 37.7% that they kept their dogs inside with a door-opened cage/fence (C). Statistical analyses showed that attachment and perceptions of dog intelligence scores were significantly lower among group A compared to groups B and C (Mann-Whitney U test with Bonferroni correction, all $p < 0.016$. Example questions and results were: "facilitating social interaction" to evaluate attachment, A-B: $z = 2.99$, A-C: $z = 4.10$ and "being capable of trying to trick people" to evaluate perceptions of dog intelligence, A-C: $z = 3.60$).

Principal conclusions and implications for the field: This study showed that owners' attachment to dogs and perceptions of dog intelligence differed by dog-keeping method. Various effects obtained from dog-human interactions have been previously reported in the U.S. and in European countries but may not always apply to Japan, where dog-keeping styles differ from the ones commonly used in those countries.

References: 1. Hamano, S. (2013). Interaction with pets. In O. Ishida, S. Hamano, M. Hanazono, A. & Setoguchi. (Ed.), *Japanese Attitudes toward Animals: A History of Human-Animal Relations in Japan* (p.43). Tokyo: University of Tokyo Press.

2. Howell, T., Toukhsati, S., Conduit, R., Bennett, P. (2012). The perceptions of dog intelligence and cognitive skills (PoDIaCS) survey. *Journal of Veterinary Behavior Clinical Applications and Research*, 8(6): 418-424.

166 Conundrums of Care: Greyhounds, caregivers and greyhound protection within 'the greyhound imaginary'

Mrs Kerry Sands - University of Exeter, Exeter, United Kingdom

Introduction: Care is a concept with multiple contradictory meanings. Caring *for* individual non-human animals can catalyse and motivate caring *about* wider causes and issues which may affect unknown and distant others. However, caring *for* individual non-human animals is not necessarily always comforting or rewarding. Instead it can be an all-encompassing experience; impacting consequent abilities to connect with and care *about* wider concerns.

Methodology: Drawing on empirical data gathered through 20 months of immersion in a frontline greyhound welfare project which collects unwanted and injured greyhounds from a racetrack in South Wales, UK, this paper will present narrative trajectories of caring *for/about* greyhounds from within 'the greyhound imaginary'. Further qualitative analysis explores the emotional attachments and detachments between caregivers, greyhounds and the wider greyhound protection movement.

Main Results: 'Amazing Greys' presents an unusual care-interface between humans and greyhounds. Volunteers experience caring *for* greyhounds at the track, as they are surrendered to the project, and through transportation to emergency veterinary care. Engagement in end-to-end care in this manner demonstrates how intimate encounters with individual greyhounds provokes not only a profound care *for* these vulnerable dogs, but also stimulates a determination to care *about* unknown others whose lives they may be unable to reach. The impact of caregiving for injured greyhounds as 'dirty emotional work' (Sanders 2010) is also discussed.

Principle conclusions and implications for the field: I will suggest that caring *for/about* greyhounds present both opportunities and threats to long-term social change for those dogs who currently exist within the commercial greyhound racing industry.

References: Sanders, C. R. (2010). Working Out Back: The Veterinary Technician and "Dirty Work". *Journal of Contemporary Ethnography*, 39 (3), p 243-272

Presentation type Poster

2 Preliminary findings of a scale assessing the commitment of low-income owners to their companion animals:

Mary Elizabeth Rauktis - University of Pittsburgh, Pittsburgh, USA

Introduction: Any shift in social sciences' responsiveness to the intersection of animals in human's lives will depend upon new methodologies for this research. Thus, research on the human-animal bond depends upon measuring complex constructs about the person and animal in the environmental context.

Methods: In order to assess the commitment of low-income pet guardians to their pets, a measure of commitment was created which included factors impacting both human and animals within a household beyond pet behavior e.g. loss of income, human illness, pet medical expenses, family conflict. This Commitment to Pets measure was included in a survey administered to over 250 pet owners utilizing food pantries in a Northeastern city in the United States.

Findings: Principal Components with a non-orthogonal rotation identified three factors with Eigen values of 1.0 and greater. The cumulative percentage of variance was 56.69. Three items were complex and so were dropped and the final factor analysis suggests two underlying constructs. One is about financial commitments beyond normal wellness care and food costs for the pet. That the items about destruction of objects in the home and elimination problems moved into the same factor as family conflict and loss of income suggests that these may become "family and household problems".

Limitations include cross-sectional data from one region of the United States. **Future Research** using item-level analysis to determine differences by age, race, gender and Socioeconomic status. Additional research is needed to further develop this scale.

Implications: Commitment is a complex construct and may be impacted by financial considerations differently than household problems, suggesting different ways of intervening when a pet is at risk of being re-homed.

33 Decoding a Social Identity: Implication, Ambiguity, and Complications of "Cat Lady"

Jenna Edney - Texas A&M University-Central Texas, Killeen, USA

Introduction. This research studies the social identity of a "cat lady". The term "cat lady" is known across many cultures, yet there is no clear definition or conclusive requisite. It is a label (both self-described and cast upon others) that can come with negative connotations, such as "hoarder, insane, or someone who loves cats more than

people” (McKeithen, 2017). The objective of this research is to determine the origins of the gender associations, what connotations apply to the “cat lady” label, and explore the implications of this label.

Methodology. To explore “cat lady” as a social identity, I conducted a qualitative analysis of a Qualtrics survey that I distributed on four social media sites. The survey featured open-ended responses and photo elicitation questions. 95 complete responses were used in the final data analysis. Second, I conducted a small-scale discourse analysis to contextualize the use of cat lady as it is presented to the public by the news media and within popular culture.

Main Results. The negative implications of the cat lady stereotype appear to be defied and embraced more than supported. Respondents would rather be labeled as a cat lover or cat person than a cat lady, purely out of recognition of the negative connotations surrounding cat lady. However, the association of cats with the female gender has been around since the beginning of cat (*Felis catus*) domestication.

Principal Conclusions and Implications for Field. These findings support that cat lady stereotype is in a dissonant state. Popular culture and social media propagate that stereotype, but in reality, the negative cat lady stereotype is not supported by respondents in photo elicitation opinions.

References: McKeithen, Will. 2017. “Queer Ecologies of Home: Heteronormativity, Speciesism, and the Strange Intimacies of Crazy Cat Ladies.” *Gender, Place & Culture* 24(1):122-34.

49 When it comes to animals - What are scholars publishing about?: A bibliometric analysis of publications across three HAI journals

Camille Xinmei Rousseau, Dr John-Tyler Binfet

University of British Columbia (Okanagan), Kelowna, Canada

Introduction: The field of Human-Animal Interaction (HAI) is dynamic and both practice and research are informed by published, peer-reviewed manuscripts. Within the last decade, publications in HAI research have multiplied as evidenced by two anthrozoology journals increasing their number of issues by 50% (i.e., from 4 to 6 issues per year). To paint a portrait of the growing trends in published HAI research, this bibliometric analysis explores publication topics in three journals devoted to showcasing HAI discoveries.

Methodology: A total of 1,046 original contributions published from 2009-2019 in *Anthrozoös* (1.20, 2018 Journal Impact Factor), *Journal of Applied Animal Welfare Science* (1.19, 2018 Journal Impact Factor), and *Society & Animals* (0.69, 2018 Journal Impact Factor) were examined to identify thematic trends and methodological approaches. Each article was coded with a dominant theme, and themes were collapsed through a winnowing process. A total of 90 themes were identified.

Main Findings: Leading themes within *Anthrozoös*, *Journal of Applied Animal Welfare Science*, and *Society & Animals* respectively included *pet ownership attitudes, practices & wellbeing* (16.0%), *behaviour and welfare of non-humans in captivity* (22.4%), and *human perceptions of, and attitudes towards, non-human animals* (13.8%). Findings across journals revealed that contributions were predominantly qualitative and the most prevalent publication themes were *perceptions and attitudes of non-human animals* (9.6%), *pet ownership attitudes, practices & wellbeing* (8.7%), and *animal-assisted interventions* (7.6%).

Principle Conclusions and Implications: As evidenced by these findings, researchers are drawn to the following topics: human understandings of, and attitudes towards, non-human animals; pet ownership and companion animals; and animal-assisted interventions. This bibliometric analysis is supplemented by a discussion of trends in publications over time, methodologies used, and populations targeted within research designs. As past research informs future research, future research projections are discussed.

67 What do we know about human-animal co-sleeping? A review of the practice and implications

Dr Christy Hoffman¹, Dr Bradley Smith²

¹Canisius College, Buffalo, USA.

²Central Queensland University (Adelaide Campus), Wayville, Australia

Introduction: Studies investigating the physical and mental benefits derived from companion animals tend to focus on interactions that take place during waking hours. Nevertheless, dogs and cats are often invited to spend their nights in humans' bedrooms and even their beds. Interest in human-animal co-sleeping has only recently increased, as evidenced by several studies investigating the nature of co-sleeping and its impacts on human sleep. Here we provide a summary of these studies to highlight what we currently know and what remains to be explored.

Methods: This review synthesizes the findings from eight empirical studies of human-animal co-sleeping. This includes subjective data obtained via self-report (e.g. surveys and diaries) and objective measures utilizing actigraphy.

Main Findings: Approximately half of owners are believed to co-sleep with their dogs. This is influenced by a number of factors, such as bed size, dog size, and the presence of another human. Pet owners' subjective reports suggest they derive psychological benefits from the practice and experience few negative consequences. Objective reports, however, show that for many owners, co-sleeping with dogs reduces human sleep efficiency.

Principal Conclusions and Implications for Field: Human-animal co-sleeping is a legitimate form of co-sleeping that has received little attention. Co-sleeping arrangements are highly varied, with many arrangements leading to interruptions to

human sleep. Overall, though, the benefits of co-sleeping likely outweigh the negatives. Future studies should investigate the cost-benefit ratio further using within-subjects designs and experimental manipulations. Methods used to assess co-sleeping dogs' and humans' nighttime activities could be extended to cats and their owners. Finally, as much of the research on human-animal co-sleeping has focused specifically on how adult women are impacted by co-sleeping practices, research on the effects of human-animal co-sleeping should be extended to men, children, and romantic partners.

110 Assessment of attachment to pets among LGBTQ+ young adults: Evaluation of the Pet Attachment and Life Impact Scale

Angela Matijczak, Camie A Tomlinson, Jennifer L Murphy, Dr Shelby E McDonald

Virginia Commonwealth University, Richmond, USA

Introduction: Attachment to pets is a construct frequently measured in human-animal interactions (HAI) research, yet few studies have rigorously tested the psychometric properties of commonly-used pet attachment measures in diverse samples. The current study addresses this gap by testing latent structural models and validity of the Pet Attachment and Life Impact Scale (PALS; Cromer & Barlow, 2013) in a diverse sample of LGBTQ+ young adults.

Methodology: Our sample consisted of 150 LGBTQ+ pet owners aged 18-21 years (45.4% gender minority, 37% racial/ethnic minority). Confirmatory factor analyses (CFA) were conducted in MPlus to test the fit of the data to the structure of the PALS. Measurement bias across gender identity, sexual orientation, and race/ethnicity was also examined.

Findings: Initial analyses indicated that few participants utilized the lowest two categories of the 5-point Likert scale. Therefore, the two lowest-order categories were combined. CFA analyses using the collapsed scale indicated that the original higher-order factor structure with four subfactors was a poor fit to our data. A revised 3-factor model best fit our data (CFI=.98, TLI=.97, RMSEA=.05). Notably, items comprising the negative impact factor were poor indicators of the construct when examined as part of the larger model and in isolation. Correlations between the factors and concurrent measures of HAI supported expected relationships between pet attachment and other domains of HAI ($p<.01$). Results of an omnibus Wald test revealed that cisgender women typically reported higher mean PALS scores than other gender identities.

Conclusions/Implications: Although evidence suggests there are gender differences in pet attachment, most HAI studies have relied on outdated conceptualizations of sex/gender and failed to assess measurement bias across gender and/or sexual minority identities. Our study highlights the importance of psychometric testing of HAI instruments in diverse samples to accurately identify the effects of HAI on human health and development.

112 Psychometric testing of the Comfort from Companion Animals Scale in a sample of LGBTQ+ young adults: A graded-response model

Camie A Tomlinson, Jennifer L Murphy, Angela Matijczak, Dr Shelby E McDonald

Virginia Commonwealth University, Richmond, USA

Introduction: There is emerging evidence of gender differences in associations between human-animal interaction (HAI) and mental health in emerging adulthood. However, studies examining HAI have generally relied on binary assumptions of gender identity and/or sex, and failed to consider other aspects of identity, such as sexual orientation, that may influence HAI behaviors and their associations with mental health. The current study addresses this gap in research by examining the internal psychometric properties, reliability, and validity of the Comfort from Companion Animals Scale (CCAS; Zasloff, 1996) in a diverse sample of LGBTQ+ young people.

Methodology: Our sample included 150 LGBTQ+ pet owners aged 18-21 years (37% racial/ethnic minority). We conducted confirmatory factor analyses (CFA) to test the fit of the data to the hypothesized structure of the CCAS. Items were treated as ordered categorical variables using weighted least squares mean- and variance-adjusted estimators. Next, we conducted multiple group analyses to test for measurement invariance across demographic variables including sexual orientation and gender identity. A final set of structural equation models examined relations between the CCAS, attachment to pets, and psychological stress.

Findings: Inspection of item characteristic curves based on an initial unidimensional model suggested little differentiation between the two lowest categories for all CCAS items. Therefore, these categories were collapsed. Results of the CFA indicated that a unidimensional model based on the original factor structure provided the best fit to the data (CFI=0.98; TLI=0.97; RMSEA=0.07). However, invariance tests indicated measurement non-invariance across gender identity. CCAS scores were positively associated with somatic complaints, interpersonal sensitivity, and overall psychological stress ($p<.05$).

Conclusions: More work is needed to reliably measure comfort from companion animals among LGBTQ+ young adults, especially given increasing numbers of sexual and gender minority youth in recent years and increased rates of health disparities and pet ownership in this population.

121 A Qualitative Analysis of Pet Names for Older and Younger Cats and Dogs

Adriana Mata Guidi, Dr Matthew Chin, Dr Valerie Sims

University of Central Florida, Orlando, USA

Introduction. Pet naming is thought to reveal a great deal about the relationship between people and their pets. The current study evaluates pet name choices and describes the trends in the naming of both adult cats and dogs, as well as their

younger counterparts. Lehrer (1992) described three common schemes for the selection of pet names, including reference to a personal first name inventory, allusion to famous individuals, and description of the animal in question. Abel and Kruger (2007) found similarities in dog and cat names and human names. The current study further examines common pet naming schemes as well as differences introduced by the age of the pets.

Method. Four-hundred eighty U.S. college students (40% men and 60% women) completed a questionnaire in reference to common household pets. A 2x2 factorial design was used in which the animal type (cat or dog) and age (young or full-grown) of the pet pictured were manipulated. Each participant then completed various questionnaires and named the pet they had been presented.

Results. Qualitative analysis of participants responses revealed several common themes in the naming of pets. Exploration of the data revealed that participants often used human names, food names, and references to appearance and color. Diminutive language and mention of other animals, affect, and honorable titles were also popular. Trends revealed that grown animals were more likely to be given human names, while young animals were more likely to be named after foods. Additionally, cats seemed to be more associated with animal names and honorable titles, while less associated with emotion and diminutive language. Data also revealed gender differences.

Conclusion. Analyses of the data suggest that people follow some general themes when naming pets, but are often influenced by both the qualities of the pet in question and their own identities.

124 Could a biomimetic robot replace therapy dogs in “Animal” Assisted Interventions?

Miss Olivia Barber¹, Dr Leanne Proops¹, Dr Eszter Somogyi¹, Dr Anne McBride²

¹University of Portsmouth, Portsmouth, United Kingdom.

²University of Southampton, Southampton, United Kingdom

Introduction. Studies have indicated that therapy dogs in Animal Assisted Interventions (‘AAI’) can benefit the human recipient by increasing feelings of psychological wellbeing and decreasing negative emotions. However, there is a growing awareness of a potentially negative impact on the therapy dogs’ welfare. As a result, life-like robots have been proposed as a replacement for the animal in AAI. Do we need to add references here?

Methodology. Here we present two studies comparing children’s behavioural responses and self-report appraisals (preference, enjoyment and animistic attributions) of sessions with a therapy dog and an interactive, biomimetic robot. Study 1 was conducted in a controlled environment (a school classroom) and explored the interactions and outcomes of 2 separate 5 minute one-to-one sessions

between 34 11-12-year old children and a therapy dog and MiRo-E robot. Study 2 was conducted in a more naturalistic setting (a Science Centre), where 100 children (aged 1-14 yrs) were able to freely interact (within the confines established animal welfare protocols) with a live therapy dog, MiRo-E and basic walking toy dog.

Main Results. In study 1, higher enjoyment ratings and more positive emotions were reported following interaction with the MiRo-E robot, although forced-choice ratings showed an overwhelming preference for the dog over the robot. Children spent more time interacting with MiRo-E and a similar amount of time stroking MiRo-E when compared to the live dog.

Principal Conclusions and Implications. Despite some differences, both “pets” produced immediate benefits regarding mood and enjoyment in brief interaction periods. Behavioural interactions between the child and MiRo-E showed many similarities to the interaction with the live dog. These preliminary results suggest that MiRo-E may be a suitable alternative to a therapy dog in interventions with children.

139 Is it different to have a dog or a cat in the measurement of the human-animal bond? - A Differential Item Functioning Analysis

Luisa Lopes-Conceição^{1,2}, Milton Severo^{1,2}, Bárbara Peleteiro^{1,2}, Nuno Lunet^{1,2}, Liliana de Sousa³

¹EPIUnit - Instituto de Saúde Pública, Universidade do Porto, Porto, Portugal.

²Departamento de Ciências da Saúde Pública e Forenses e Educação Médica, Faculdade de Medicina da Universidade do Porto, Porto, Portugal.

³Departamento de Ciências do Comportamento, Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Porto, Portugal

Introduction: Human-animal interactions underlie the concept of human-animal bond (HAB), that has been reported to be associated with some characteristics, namely the animal type. We aimed to culturally adapt the Lexington Attachment to Pets Scale (LAPS) and to assess the difference between having a dog or a cat in the measurement of HAB and the characteristics associated with it.

Methodology: The Portuguese version of LAPS (P-LAPS) was applied to 379 participants. A differential item functioning (DIF) analysis was used based on the iterative hybrid ordinal logistic regression/item response theory approach. The impact of the identified items with DIF on P-LAPS was examined comparing the Test Characteristics Curves of dog-owner and cat-owner groups, for all items and for those found to have DIF. Scores comparisons were performed using paired t-test or analysis of variance.

Main Findings: P-LAPS structure was evaluated and two components were retained, representing the inner and outer HAB. Four items presented animal type-related DIF, two favored cat-owners and two favored dog-owners. Comparing all items aggregated with those found to have DIF, differences may become negligible small due to

canceling of differences in opposite directions. Women, younger and unpartnered participants and those who live in households with no children were found to have a stronger bond. Living with more than one animal and with different animal species, having had animals during childhood/adolescence, and carrying out activities with their favorite pet were also associated with higher scores ($p < 0.05$, for all associations).

Principal Conclusions and Implications for Field: P-LAPS is a valid and reliable instrument to measure HAB in the Portuguese adults, suitable for use with dog- and cat-owners. The assessment of the HAB can be an important tool to maximize the potential of the relationship between people and their animals and specifically to promote the health and well-being of both.

142 General and specific factors of Pet Attitude Scale Modified

Luisa Lopes-Conceição^{1,2}, Milton Severo^{1,2}, Bárbara Peleteiro^{1,2}, Nuno Lunet^{1,2}, Liliana de Sousa³

¹EPIUnit - Instituto de Saúde Pública, Universidade do Porto, Porto, Portugal.

²Departamento de Ciências da Saúde Pública e Forenses e Educação Médica, Faculdade de Medicina da Universidade do Porto, Porto, Portugal.

³Departamento de Ciências do Comportamento, Instituto de Ciências Biomédicas Abel Salazar, Universidade do Porto, Porto, Portugal

Introduction: Measuring the attitudes toward animals has become more important in an increasingly inclusive society. We aimed to culturally adapt the Pet Attitude Scale Modified (PAS-M) and to assess the existence of a general and/or specific factors of attitudes toward pets, along with their associated characteristics.

Methodology: The Portuguese version of PAS-M (P-PASM) was applied to 764 participants. The factor structure of P-PASM was analyzed using exploratory factor analysis, and two models were obtained: higher-order model (model 1) and Schmid-Leiman transformation (model 2). Simple and multiple linear regression analysis were used to evaluate crude and adjusted effect, respectively, of participants' characteristics on factors' scores.

Main Findings: Model 1 showed that 18 items were grouped in three correlated specific (lower-order) factors combined in a general (higher-order) factor, representing human-animal bond (factor 1), and positive (factor 2) and preconceived (factor 3) ideas on animals. Model 2 yielded a general factor and three specific factors, representing the same constructs of the corresponding factors of the previous model. The female sex, younger age, attending a degree in natural/agricultural sciences, past/present pet ownership experience, and the contact throughout life and with a diverse range of animal species were associated with the three specific factors in model 1 and with the general factor in model 2 ($p < 0.05$, for all associations); however, regarding the specific factors in model 2, some of the associations changed or disappeared.

Principal Conclusions and Implications for Field: P-PASM is a valid and reliable instrument to measure the attitudes toward animals in the Portuguese population. The second model allowed to determine whether specific factors provide information that is not redundant with the general factor and, consequently, allowed to gain additional insights into the associations between the variables and the factors that otherwise would be lost.

198 Attachment styles in the relationship between pet dogs and their caregivers: analysis of dog behaviour through structured and holistic evaluations

Dr Chiara Mariti, Beatrice Carlone, Giacomo Riggio, Prof Angelo Gazzano

Dep. Veterinary Sciences, University of Pisa, Pisa, Italy

Introduction: The aim of this study was to investigate whether a qualitative assessment of dogs' attachment style to man was corroborated by a quantitative analysis of dog behaviour.

Methodology: Twenty-eight clinically healthy, adult dogs, 17 females and 11 males, 30.5 ± 6.7 months old, were involved. Dogs participated with their caregiver in the Ainsworth Strange Situation Test. In order to classify dogs' attachment based on children styles, their behaviour was assessed through a holistic observation performed by an experienced observer; dogs' behaviour was also observed through a structured, continuous sampling analysis. The Mann Whitney U test was used to compare the duration of behaviours displayed by dogs classified as having a secure attachment to the behaviour of dogs classified as insecure (avoidant + ambivalent) in the last three episodes.

Results: dogs' attachment styles were classified as: 18 secure, 7 insecure (6 avoidant + 1 ambivalent), and 3 unclassified. The behaviour of dogs with secure versus insecure attachment did not show statistically significant differences in episode 5 (complete isolation) nor in episode 6 (reunion with the stranger); in the latter, secure dogs displayed a strong tendency for longer proximity to the stranger ($U=31.50$; $p=0.055$). In episode 7, upon the second reunion with the caregiver, dogs classified as secure displayed less yelping ($U=21.00$, $p=0.009$) and more physical contact ($U=17.00$; $p=0.004$), but they did not differ for proximity.

Principal conclusions and implications: the holistic evaluation of dogs' attachment style seems to be related to behavioural patterns that are in line with the theory of attachment and with patterns observed in children: upon reunion, dogs with a secure attachment show contact seeking and get comforted by caregiver's presence. Clarifying the presence and the display of attachment styles in dogs can help improve dog's relationship with people and ultimately their welfare.

226 Safari Adventure: A comparison study of the effects of Animal Assisted Activity (AAA) on social interaction for children with Autism Spectrum Disorder (ASD)

Miss Susan Chestnutt - University of Stirling, Stirling, United Kingdom

Introduction: This study examines the effects of Animal-Assisted Activity (AAA) for children with Autism Spectrum Disorder (ASD) and its potential impact on their social interaction and quality of life. Previous research on AAA focuses on companion animals and their benefits to human health. Based on this, the Social Support Hypothesis has been drawn (O’Haire, 2010), hypothesising that companion animals are a social support, facilitating human-human social interactions. O’Haire (2013) identifies the need for an evidence base for such AAA, in order to move beyond the anecdotal accounts.

Methodology: A within-subject design was used to compare behaviour during visits to the Safari Park and nature walks over a period of 4-weeks. Participants were children aged 5-7 years (n=6), diagnosed with ASD. Staff accompanying the children completed ratings on the children’s social interactions before, during and after the two activities. One researcher recorded live the behaviours of initiation of touch, communication, social and sensory behaviours.

Main Findings: The staff ratings revealed significant effect of week on the children’s social interactions during and after the Safari Park and the nature walk. The behavioural data yielded statistically significant improvements in social behaviours and communication at the Safari Park compared to the nature walk. Observations found that sensory behaviours were significantly lower at the Safari Park compared to the nature walk.

Principle Conclusions and Implications: This study indicates that there is a positive effect of activities directly associated with animals for children with a diagnosis of ASD on social interaction and communication. It is recommended that AAA is continued and evaluated to determine sustained and transferable benefits of AAI.

209 Exploring patterns of cat-ownership in France

Dr Jonathan Bowen^{1,2}, Dr Marine Grandgeorge³, Dr Pauleen Bennett⁴, Dr Jaume Fatjo¹

¹Chair Affinity Foundation Animals and Health, Universitat Autònoma de Barcelona, Barcelona Biomedical Research Park, Barcelona, Spain.

²Queen Mother Hospital for Small Animals, Royal Veterinary College, Hawkshead Lane, North Mymms, Hertfordshire, United Kingdom.

³Université de Rennes 1, UMR CNRS 6552, Ethos, Laboratoire d'éthologie animale et humaine, 35042, Rennes, France.

⁴School of Psychology and Public Health, La Trobe University, Bendigo, P.O. Box 199, Bendigo, Australia

Introduction: Within Western Europe, for countries for which data is available, France is the country with more cats per family. The Cat Owner Relationship Scale (CORS) is a scientifically validated questionnaire created to assess three dimensions of the human-animal bond, based on the social-exchange theory.

Methodology: We obtained a representative sample of 496 French cat owners who answered a validated French version of the CORS (Cat-Ownership Relationship Scale), as well as questions on cat-care and management. The sample was balanced for demographic characteristics, including sex, age, location, education and income. PCA-HCA analysis was performed to identify overall patterns of relationship. PLSDA and OPLSDA were used to identify the CORS variables that discriminate between clusters. Finally, Binary Logistic Regression was used to explore the relationship between the CORS and sociodemographic and care-related variables.

Main results: We identified two main patterns of cat-owner relationship, which we named emotional and pragmatic. The emotional group represents 32% of the owners, whereas the pragmatic type accounts for 68% of the population. The variables most strongly associated with a highly-valued relationship were those related to emotional support and companionship. The proportions of pragmatic and emotional owners were quite different from the ones we found in a parallel study conducted in Spain and a study conducted in France on human-dog relationships. Unemployed owners, people declaring that they understand their cats and people rating their cat's quality of life as higher were more likely to be in the emotional group. Providing the cat with elements of environmental enrichment and experiencing a sense of mutual understanding were associated with the emotional type of cat owner.

Principal Conclusions and Implications for Field: The systematic analysis of human-cat relationships might give us insights about the factors that could be targeted in responsible pet ownership interventions.

Animal and public health risk (dog bites) - 6:00 - 6:40pm Thursday, 3rd September

Presentation type Oral live

230 Rise in dog bite admissions is driven by adult cases: a retrospective analysis of hospital episode data in England (1998 - 2018)

Dr John Tulloch^{1,2}, Sara Owczarczak-Garstecka¹, Dr Kate Fleming¹, Dr Roberto Vivancos², Dr Carri Westgarth¹

¹University of Liverpool, Liverpool, United Kingdom

²Public Health England, Liverpool, United Kingdom

Introduction: The aim of this study was to describe incidence and sociodemographics of patients admitted to English National Health Service (NHS) hospitals for dog bites, between 1998 and 2018. To estimate annual direct health care costs of hospital admissions for dog bites.

Methodology: Descriptive analysis of patient level data, from the Hospital episode statistics (HES) database for NHS England. Poisson models were created to analysis the sociodemographic characteristics of admitted dog bite patients compared to the national hospital admissions population. We described management of patients in NHS hospitals and estimated direct health care costs.

Main Results: Incidence of dog bite admissions rose from 6.35 cases per 100,000 population in 1998 to 14.99 cases per 100,000 in 2018, with large geographic variation (range: 3.7 - 24.2 cases per 100,000 per year). The increase was driven by a tripling of incidence in adults. Compared to the national admissions population, males were most at risk. The ages with the highest risk were 1-14 year olds. Females showed two high risk age groups, 1-14 and 35-59. Patients were more likely to live in rural areas and the most deprived neighbourhoods of the country. The majority of dog bites occurred at home. Adults were more likely to have injuries to the wrist and hand (50.21%), whilst children had injuries to the head (70.03%). Two percent (2.05%) of A&E attendances led to admission. A mean annual cost of admissions was estimated at £2.5 million. Estimated costs for A&E attendance rose ($p < 0.001$, adjusted $r^2 = 0.98$) to a peak in the financial year 2017/2018 of £62.1 million.

Principle conclusions and implications for field: There has been a significant rise in hospital admissions due to dog bites driven by the previously unidentified increase in adult admissions. Sociodemographic trends highlight that further exploration is needed to understand the risk factors.

177 Attributions for Dog Aggression: The Roles of Victim Aggression and Dog Breed

Adriana Mata Guidi, [Dr Valerie Sims](#), Dr Matthew Chin

University of Central Florida, Orlando, USA

Introduction: Previous research on perceptions of dog aggression has focused primarily on whether specific dog breeds like pitbulls and German shepherds are more aggressive (e.g., Lockwood & Rindy, 1987; Wells, Morrison, & Hepper, 2012) and how attributions of blame are made for negative behaviors by dogs in comparison to those made by children (Sanders et al., 1999). Building on this past literature, our study examines how dog breeds and human provocation play into human perception of blame and punishment in a case of a dog bite incident.

Methodology: Participants read a scenario describing a human-dog interaction that ended with the dog biting the human. Scenarios varied on three dimensions: Dog breed (Pitbull Mix, Labrador Mix, or no information), human provocation (human was physically aggressive toward dog, verbally aggressive toward dog, or not aggressive), and degree of damage done by the bite (temporary-permanent). Afterwards, participants rated guilt for the incident as well as assigned what they deemed to be appropriate legal punishments. Preliminary analyses examined only the dimensions of Breed and Human Provocation in 3(Breed) x 3(Provocation) between-subjects ANOVAs.

Main Results: Participants were less likely to blame the dog when the human was physically aggressive toward it, but not when the human was verbally aggressive ($F(2,31)=4.02, p=.028$). The Labrador-mix was rated as inherently more friendly, ($F(2,31)=5.73, p=.008$). However, when asked whether the dog should be required to wear a muzzle, there was a Breed x Provocation interaction, ($F(4,31)=3.15, p=.028$). For the Pitbull mix, human provocation was not related to judgement. For the Labrador-mix in the human physical aggression condition, a muzzle was rated as unnecessary. This suggests that breed and victim behavior are both important factors when making attributions for dog aggression.

Presentation type Oral pre-recorded

9 Exposure to intimate partner violence and internalizing symptoms: The moderating effects of positive relationships with pets and animal cruelty exposure

Dr Roxanne Hawkins¹, Dr Shelby Elaine McDonald², Kelly O'Connor², Angela Matijczak², Prof. Frank Ascione³, James Herbert Williams⁴

¹University of West Scotland, Paisley, United Kingdom.

²Virginia Commonwealth University, Richmond, VA, USA.

³University of Denver, Denver, USA. ⁴Arizona State University, Phoenix, USA

Introduction: It is estimated that more than half of children living in households where intimate partner violence (IPV) occurs are also exposed to animal cruelty (AC). Although prior research links bonds with pets with higher levels of socioemotional competence among school-age children, exposure to AC may negate the protective effects of pet ownership and/or exacerbate the potentially deleterious effect of IPV on children's mental health. The current study evaluates whether and to what extent the associations between exposure to IPV and several indicators of children's mental health vary as a function of children's positive engagement with pets and exposure to AC.

Methodology: Participants included 204 children (aged 7-12 years; 47% female; 57% Latinx) and their maternal caregiver who were recruited from domestic violence agencies in a western U.S. state. Multiple moderation analysis evaluated whether the association between children's exposure to IPV and internalizing and posttraumatic stress symptoms vary as a function of children's positive engagement with pets and exposure to AC.

Main Findings: Analyses revealed several moderation effects for positive engagement with pets (e.g., internalizing problems: [b = -.15, t(195) = -2.66, p = .008]; posttraumatic stress symptoms: [b = -.13, t(195) = -2.24, p = .026]), whereas exposure to AC only moderated the association between IPV and anxious/depressed symptoms (b = .32, t(195) = -2.41, p = .017).

Principle Conclusions and Implications: These findings highlight the potential protective effects of positive engagement with pets and the importance of screening for exposure to AC when engaging in trauma-informed work with children exposed to IPV.

93 A qualitative study of perception and prevention of dog bites: a novel approach to an old problem

Sara Owczarczak-Garstecka^{1,2,3}, Professor Rob Christley^{1,3}, Professor Francine Watkins⁴, Dr Huadong Yang⁵, Dr Carri Westgarth^{1,2}

¹Institute of Infection and Global Health, University of Liverpool, Liverpool, United Kingdom.

²Institute for Risk and Uncertainty, University of Liverpool, Liverpool, United Kingdom.

³Dogs Trust, London, United Kingdom.

⁴Institute of Psychology, Health and Society, University of Liverpool, Liverpool, United Kingdom.

⁵University of Liverpool Management School, University of Liverpool, Liverpool, United Kingdom

Introduction: Dog bites affect human health and can lead to a breakdown of a human-dog relationship. This study aimed to: explore how dog bites are perceived and experienced by those directly affected, as a victim or dog owner; and to propose an approach to bite prevention based on participants' experiences.

Methodology: Participants who had been bitten by dogs or who were at risk of bites in a range of contexts, as well as owners of dogs with a bite history, were recruited. Qualitative methods (in-depth interviews, n=41; focus-group discussions, n=3; and participant-observations (>12 weeks)) were used. Analysis was conducted concurrently with data collection and included coding transcripts and notes into themes.

Findings: Management of risk in interactions with dogs was guided by three complementary strategies: procedures; emotions/ intuition; and trust. At work, formal and informal procedures included surveillance and communication of risk. Procedures were contextually modified in response to individual experience, knowledge, and relationships with colleagues and dogs. Trust was used as a proxy for risk identification and informed individual practices around dogs. Trustworthiness was assessed by scrutinising dog's reputation, appearance, and character. Owner's character was also considered. Most participants sensed risk intuitively or experienced it as an emotion. Consequently, emotional contagion between humans and dogs was identified as a risk as well as a tool for negotiating safety. Participants described achieving this by controlling their movement and bodies.

Conclusions and Implications: Safe interactions with dogs are shaped by the physical environment, policies, social norms, relationships with dogs, and a person's physical ability to respond. In addition to education, bite prevention should incorporate these factors and utilise a range of approaches to human behaviour change. Prevention should be expanded to post-bite injury reduction which could reduce the long-term damage to the injured person.

Presentation type Oral flash pre-recorded

123 An Exploratory Study: The Bereavement Experience Following the Death of a Companion Animal

Celeste Teo, Dr Alicia Pon - National University of Singapore, Singapore, Singapore

Introduction. The significance of human-companion animal relationships is often diminished or deemed inferior to that of human-human relationships, which can have negative implications on bereavement for companion animal owners (CAO). This study explores the bereavement experiences of CAO utilising the dual-process model (DPM) (Stroebe & Schut, 1999). This framework has been extensively utilized to understand the coping experiences of people who have lost their loved ones through death.

Methodology. Qualitative semi-structured interviews were conducted with 2 males and 4 females (aged between 22 and 27 years) who had experienced the death of a companion animal (CA). The findings were analysed using the thematic analysis research method.

Main Findings. The findings suggest that though CAO undergo both loss-oriented and restoration-oriented processes in their bereavement experience, they tended towards restoration-orientation early on in their bereavement processes. This is driven by a) lack of understanding by others of the depth of the relationship between CAO and their CA, b) societal perceptions which diminish the significance of CA loss, and c) the lack of CA death rituals. The factors that affect the healthy oscillation between loss-orientation and restoration-orientation of CAO include: a) positive social support and b) the presence of another CA.

Principal Conclusions and Implications for Field. These findings suggest that bereaved CAO undergo grieving experiences similar to the loss of a human relationship. Disenfranchised grief and other unresolved negative feelings can be experienced by CAO if the loved ones and helping professionals failed to honour and help CAO work through this significant loss experienced by bereaved CAO. Hence it is important for helping professionals to receive training to assess the significance of CAs in their clients' lives.

References: Stroebe, M., & Schut, H. (1999). The Dual Process Model Of Coping With Bereavement: Rationale And Description. *Death Studies*, 23(3), 197-224. doi: 10.1080/074811899201046

Presentation type Poster

96 Dog Bite Rates as a Measure of Community and Canine Health and Welfare

Dr Andrew Rowan - WellBeing International, Potomac, USA

Critical review

Dog bite rates (reported as dog bites treated in emergency rooms per 100,000 people) vary from a low of 5 to over 1,000 around the world. Most of the academic literature on dog bites consists of reports on who is bitten, where they are bitten and what remedial action had to be taken but very few of the reports have looked at the varying rates of dog bites in different communities as a way to mitigate the impact of dog aggression on community health and well-being. Different approaches to recording and reporting dog bites is an important confounding factor in any study of dog bites therefore this analysis will mainly examine the rates of dog bites treated in hospitals and clinics. The presentation will review data from around the world but especially from the US, Canada, Western Europe, and India and will discuss various municipal and national efforts to prevent or address dog bites, especially breed specific approaches. A few municipalities have taken steps that have successfully reduced dog bite rates (e.g. Calgary in Canada, Jaipur in India and Portland, Oregon) whereas the implementation of breed specific measures has produced mixed results. The usefulness of using dog bite rates as a metric to assess animal control approaches will also be discussed.

221 A comprehensive approach for human and animal violence, using the One Health, One Welfare framework.

Dr Evelyn Segredo^{1,2}, Carolina Cefrorella³

¹National Public Health, Montevideo, Uruguay. ²Academic Antrozology research group in Uruguay, Montevideo, Uruguay. ³Academic Antrozology research group in Uruguay, MONTEVIDEO, Uruguay

Introduction: Violence is a multicausal, and diffuse phenomenon, that conveys a strong learning component, culturally established, and caused by a dysfunction in the social structure. Today, the challenge arises in defining animal abuse, in identifying violent acts, and redirecting decision making to prevent this occurrence. The following report aims to review the latest evidence on the subject, providing the reader with strategic lines, tools and reflections on the most negative aspects of human animal interaction, and the inherent complex nature that characterises violence.

Methodology: Selection and analyse of published findings from 1985-2019 in both the human and veterinary literature were reviewed for evidence of factors associated with violence towards humans and animals, and variables that influence the occurrence of both events. This study includes observational, descriptive analyses, trials and critical reviews, national reference guidelines on approaching violence.

Main Findings: This research cross linked the three levels of public health prevention, with the ecological theory of human social development, analysed how Human Animal violence can be approached on different scenarios and levels of prevention. There is good evidence that violent events towards animals and humans are intrinsically interrelated, share a similar causal pathway, and generate an impact on individual mental health, community context, and public health.

Principal Conclusions and Implications for Field: The current review has demonstrated how a complex, yet, very practical issue can be approached on the individual, family, and community level, activating measures of control and prevention according to the situation. This review has so far been a unique report on how to work with human and animal violence from an integral One Health - One Welfare approach. Implications for public health purposes are challenging, yet promising for public policies and international programmes.

Plenary - 1:00 - 1:50pm Friday 4th September

Plenary: [Manoj Guatam](#) "One Health One Welfare in Animal Conservation"

Animals as stakeholders - 2:00 - 3:40pm Friday, 4th September

Presentation type Oral live

193 Attitudes to cat management in residents of a suburban Australian local council

Ms Sean Blieschke, [Dr Susan Hazel](#), Dr Torben Nielsen

University of Adelaide, Adelaide, Australia

Introduction. The City of Mitcham was the first local council in South Australia to implement a cat by-law making it compulsory to register cats. Due to public pressure, councils are considering whether a cat curfew is included in by-laws. The objectives of this study were to: 1) evaluate factors influencing support, and 2) identify drivers and barriers of residents of Mitcham Council to cat curfew.

Methodology. An online survey (SurveyMonkey) included questions on demographics, cat ownership and attitudes towards cat curfew. A binomial regression model was used to investigate which factors were associated with support of a cat curfew ($p < 0.05$ significant). Free text answers on drivers and barriers to a cat curfew were separated into main themes. The study was approved by the Human Research Ethics Committee at the University of Adelaide.

Main Results. A total of 794/891 responses were included. Overall, 38.8% owned a cat at the time of survey, with 69% owning a cat at some time. Non-cat owners were 9.7 times more likely to support a cat curfew than cat-owners ($p < 0.05$). Respondents reporting cats being a nuisance were 14.2 times more likely and females twice as likely as males to support a cat curfew ($p < 0.05$). Age group and dog ownership were not significant factors. Reasons to support a cat curfew included: protecting wildlife, problems with neighbours, safety of cats and responsible ownership. There were fewer

reasons provided not to support a cat curfew: cat welfare, practical issues enforcing a curfew and a curfew being too strict.

Principal Conclusions and Implications for Field. The findings suggest support for the implementation of a cat confinement bylaw in the City of Mitcham council depends mainly on ownership of cats and whether cats are causing nuisance. Results may be used to target community education program to encourage support of cat curfews.

216 When things go wrong: dog owners' perceptions of dog behaviour and training

Dr Tamzin Furtado¹, Dr Lauren Harris¹, Ms Tamsin Durston¹, Dr Rachel Casey¹, Dr Melissa Upjohn¹, Professor Rob Christley²

¹Dogs Trust, London, United Kingdom. ²Digs Trust, London, United Kingdom

Introduction: Unwanted behaviours in dogs are amongst the main reasons cited for relinquishment and euthanasia. Owner engagement in training, and their understanding of dog behaviour can help to prevent behaviour issues, as well as improve dog-human relationships. However, only 41% of owners in the UK report attending training classes (PAW report 2019). This study examines owners' perceptions of training and behaviour modification.

Methodology: Forty one discussion forum threads about canine behaviour were observed over four months, and subsequently analysed using a grounded theory approach. Separately, fifteen dog owners were interviewed about their experiences with training, their dogs' behaviour, and their relationship with their dog.

Findings: Although all owners in this sample discussed using some form of training with their dog (whether classes or self-training), training activities were not necessarily considered integral to the dog-human relationship. When describing what they perceive constitutes "training", many owners mentioned basic commands such as "sit". Nevertheless, when describing their broader relationship with their dog, and their reactions to unwanted behaviours, owners suggested they performed a wide range of actions which had the function of positively affecting their dog's behaviour, such as shaping the dog's physical environment, removing stressors, and improving their own knowledge of dog behaviour. These actions have been developed into a hierarchy of practices which starts at the most broad and becomes more specific. At the broadest level are characteristics of the owners themselves (e.g. patience), moving up to their learnt skills and knowledge (e.g. understanding of dogs), then shaping the physical environment, before creating associations and finally actively training the dog to respond to commands.

Conclusions and implications: We suggest that use of a new 'pyramid' construct of training could facilitate owners, behaviourists and other professionals by understanding the range of different factors involved in planning training and behaviour modification.

11 Exploring the potential of listening and silence in zoo visiting

Dr Tom Rice¹, Dr Alex Badman-King¹, Professor Sam Hurn¹, Dr Adam Reed², Dr Paul Rose¹

¹University of Exeter, Exeter, United Kingdom.

²University of St Andrews, St Andrews, United Kingdom

Introduction: Zoos have often been conceptualised as places of spectacle, with scholars focusing on the ways in which these institutions enable the viewing of other-than-human animals by human publics. This paper describes and evaluates a set of experimental ‘listening’ and ‘silent’ visits conducted at two UK zoos in 2019. The visits were part of a wider project examining sound as a form of multispecies entanglement in the zoo context.

Methodology: In the listening visits, groups of volunteer participants were led on a scripted tour of the zoo which directed them to listen closely to the sound environment. In the silent visits, volunteers determined their own path round the zoo but were asked not to talk or otherwise communicate with anyone. The paper draws on a qualitative analysis of transcripts of discussion sessions held between researchers and volunteer participants directly after the experimental visits. It also incorporates researchers’ experiences of conducting the discussions.

Main Findings: Participants overwhelmingly found the visits to be enjoyable and thought provoking, offering a novel way of engaging with zoo sites and animals. Among other experiences, participants felt that prioritising listening produced opportunities for more attentive, reflective and empathetic engagement with zoo animals than was the case in their usual visits, while silence was conducive to more respectful and receptive modes of engagement. Animals were also perceived by participants to be more relaxed and confident in their presence than they were in front of noisier visitors. The discussions revealed a clear demand for opportunities for quiet in the zoo visiting experience, and for alternative ways of engaging with zoos.

Principle Conclusions and Implications: Listening and silence as modes of engagement may represent an effective way to promote greater attentiveness and sensitivity to animals in zoos, promising varied benefits for zoos, their visitors and potentially also their animals.

53 In whose best interests? How routine neutering is discussed with owners of companion animals.

Dr Carol Gray - University of Liverpool, Liverpool, United Kingdom

Introduction: Neutering of companion animals is a procedure carried out daily in veterinary practices in the UK. Although non-medical, it is exempted from the list of mutilations prohibited under the Animal Welfare Act 2006, and is heavily promoted by animal welfare charities and veterinary practices as being the decision of a responsible companion animal owner.

Behind the positive tales of greater longevity for neutered animals, and lower risk of future serious health problems, lies confounding research that suggests higher risks of specific disease problems, and possible worsening of some behavioural problems.

To investigate whether owners are given the information they need to make decisions about neutering, an observational study on pre-operative neutering discussions was carried out in a small animal veterinary practice.

Methodology: Ten consultations featuring pre-neutering consent discussions for dogs, cats and rabbits were observed and audio-recorded in a UK veterinary practice. Recordings were transcribed, and analysed thematically. Illustrative quotes will be used to present the main findings.

Main results/findings: The discussions analysed did not provide owners with the information required to give informed consent. There was little discussion of surgical options, of the benefits of the procedure, or of longer-term complications. Risk disclosure focused on general anaesthesia, the surgery itself and immediate post-operative complications.

In summary, societal and professional pressure to neuter all animals is so strong that clients and patients do not benefit from a comprehensive discussion of the pros and cons of neutering for that individual.

Conclusions: The UK's BSAVA advice on neutering suggests an approach based on the risks and benefits for the individual animal. This study provides evidence that such advice is not followed in practice. It may be useful for information on neutering to be provided by an independent source, enabling animal owners to fully participate in these discussions.

78 Choosing My Dog: understanding the sourcing of dogs using a large-scale study into acquisition behaviours

Dr Rebecca Mead, Dr Katrina Holland, Dr Melissa Upjohn, Dr Rachel Casey, Professor Rob Christley

Dogs Trust, London, United Kingdom

Introduction: The factors influencing why and how people decide to get a dog are not well understood. There is an urgent need to understand this process so that strategies can be developed to promote responsible acquisition behaviours. The ‘Choosing My Dog’ project aims to understand how potential owners identify their preferred source from which to acquire a dog, and the motivations and influences affecting their choices.

Methodology: This project used a mixed methods research design. An online survey of current (n=8,262) and potential (n=2,833) dog owners collected predominantly quantitative data. Qualitative data were collected through semi-structured interviews with a total of 28 current and potential owners. Quantitative data were analysed using IBM SPSS (v.26) and R (v.3.5.1). Transcribed interviews were coded in NVivo (v.12) utilising inductive thematic analysis.

Main findings: Of the current owners surveyed, the most commonly reported sources for acquiring a dog were rehoming centres (39%, 95% CI [38%, 40%]) and dog breeders (37%, 95% CI [36%, 39%]). However, this contrasted with where the same owners had reported considering acquiring a dog from: 71% (95% CI [70%, 72%]) considered rehoming centres and 45% (95% CI [44%, 46%]) considered breeders. Interviews with current and potential owners suggest the reasons for this discrepancy include: potential owners’ perceptions about whether rehoming centres might judge them unsuitable, e.g. due to working full time or having children; the lack of ‘suitable’ dogs within rehoming centres; and the time spent waiting for a ‘suitable’ dog.

Principle conclusions and implications for field: Differences between considered and utilised source of dog acquisition suggest real and perceived barriers to adoption faced by potential dog owners. Findings will inform the design of interventions to encourage responsible dog selection and purchase decisions. The study also highlights the need for education around dog ownership, in particular, about the rehoming process.

Presentation type Oral pre-recorded

52 The features of a successful therapy dog: a Delphi study

Lorena Filugelli¹, Simona Normando², Morgana Galardi¹, Laura Contalbrigo¹

¹Italian National Reference Centre for Animal Assisted Interventions, Istituto Zooprofilattico Sperimentale delle Venezie, Padova, Italy. ²Dipartimento di Scienze Sperimentali Veterinarie, Faculty of Veterinary Medicine, University of Padua, Padova, Italy

Introduction. Animal assisted interventions (AAIs) involving dogs are facing an increasing popularity. Despite the growing body of research about the positive effects of dog-assisted interventions on health and wellbeing of various kinds of users, very few papers investigate the dog side and the features that make the dog suitable and efficient in various AAI settings.

Methodology. A three-round Delphi process explored the views of experts regarding the features that make a therapy dog successful in AAI programs. The Delphi exercises were conducted using online questionnaires distributed to Italian professionals that work in the AAI field and who are involved in the training, assessment and management of therapy dogs (dog handlers, therapy dog trainers and veterinarians with expertise in AAI). The first round sought suggested characteristics for subsequent rating in rounds two and three. Both quantitative and qualitative data were analysed. Median and percentage scores were presented for each item.

Main results. Thirty-three professionals responded to all rounds. We identify 55 characteristics that people working in the field confirmed as desirable or very desirable. Among them, only 16 are very desirable and they all relate to dog communication skills towards humans and his/her ability to control stress and emotions.

Principal conclusions and Implications for field. Further studies are needed to investigate the links between the identified characteristics and a successful involvement of the dogs in AAI. Our findings may provide a baseline for future research on this topic to set up dog selection protocol relevant for AAI professionals.

120 Implicit Attitudes Toward Animals as Food: The Roles of Sex and Diet

Dr Valerie Sims, Dr Matthew Chin, Gabriela Flores-Cruz

University of Central Florida, Orlando, USA

Introduction: Research has shown that time to judge whether pictures are food or would be personally eaten is related to whether one eats meat (Sims, 2019), suggesting that memory representations vary as a function of beliefs about animals as food. However, this work has not examined word stimuli. Classic research in cognitive

psychology has shown that reaction times to identify whether two words are both real words in a language (lexical decision task) is faster when the two words are semantically related (Meyer & Schvaneveldt, 1971). Based on this finding, the lexical decision task can detect whether concepts are related in memory. For a given individual, if the words are related in memory, the reaction time should be faster.

Methodology: This paradigm was used to examine whether diet and sex predict the perceived relatedness of food terms (Chicken, Cow, Fish, Pig, Bread, Cheese, Eggs, Fruit, Milk, Vegetables) to the categories animal or food. Three-hundred-ninety-six undergraduates (115 omnivores, 198 vegetarians, 83 somewhat meat restricted) completed a timed lexical decision task.

Main results: A 3(Diet) x 2(Sex) x 10(Target Food) x 2(Category: Animal or Food) x 2(Order: Target word or Category Word first) mixed ANOVA with reaction time as a dependent variable yielded a significant Diet x Sex x Category x Order interaction, $F(2,390)=5.12$, $p=.006$. Separate Target x Category x Order ANOVAs for each Diet and Sex were used to examine the results. Memory representation for animals as food vary as a function of diet, sex, and the priming context. Further, most participants were animals as are not as closely related in memory.

167 Natural Connections: Exploring the Role of Engagement in Outdoor Activities and Technology Use on Children's Moral Concern for Wild Animals and Ecosystems

Allison Maynard, Dr Christine Tardif-Williams, Dr Sandra Bosacki

Brock University, St. Catharines, Canada

Introduction. The biophilia hypothesis states that all humans have a natural tendency to respect and understand other forms of life (Wilson, 1984). Research has examined how spending time in nature can provide physical, cognitive and emotional benefits for humans. However, relatively few studies have explored whether spending time in nature and/or with wild animals and technology use are related to children's moral concern for wild animals and ecosystems.

Methodology. Participants included 61 children and their caregivers (35 girls; 26 boys; *Age* = 11.4 years, *SD* 5.22, *range* = 7.00 - 15.9 years). Parents provided demographic information (e.g., children's experiences with nature and their activity levels) and children responded to open-ended questions about their technology use and their thinking about the moral welfare of wild animals and ecosystems. Children's responses were coded for moral justification complexity (e.g., unelaborated harm, anthropomorphic, biocentric reasoning) and for engagement with technology in nature (e.g., type and frequency).

Main Results. The results indicated a significant positive association between children's overall technology use and moral concern for ecosystems ($p=.002$), and wild animals ($p=.001$). Results also revealed that 42.9% of the children reported outdoor technology use, with 14.8% of those children using it to take photos/videos. When

asked why they did or did not use technology, children mostly (24.6%) reported not using technology because it would decrease their engagement with nature.

Principal Conclusions and Implications for Field. Understanding how youth think about the wellbeing of the environment can offer new insights to encourage greater youth concern for the wellbeing of the natural world, and more active youth engagement in efforts to generate solutions to some of the environmental issues facing our current (and future) generation(s) (i.e. climate change, habitat destruction, species extinction).

170 The Albatross and Roaring Sea: The Struggles with Power in J.M. Coetzee's *The Lives of Animals*

Mr Hui Chien Ngoi - University of Leeds, Leeds, United Kingdom

Introduction. Despite criticisms of physically and/or mentally threatening health and welfare of animals and the colonised, vegetarianism and postcolonialism may also be surreptitiously involved in power abuse. This research analyses J.M. Coetzee's *The Lives of Animals* or TLOA (1999), with Elizabeth Costello as the vegetarian protagonist. It verifies Foucault's suggestion that power flows among different parties via knowledge manipulation. Consequently, resistance to oppression prompted by Nietzsche's genealogy of morality (good and bad moralities, guilt, and asceticism) makes the powerless feel noble and powerful. However, subjective and non-holistic judgements when inflicting power will bring albatross-like psychological burden.

Methodology. Inspired by Foucault, Nietzsche, and the concept of transmembrane transport, I devise a power-flow model to qualitatively explain how power circulates among different parties in TLOA. The powerless, marginalised vegetarians and postcolonialists become noble and powerful when using knowledge to lambaste the previously powerful carnivores and colonisers. Nevertheless, the newly gained nobility and non-static power is constantly threatened by inconsistencies in abusing animals and once-colonised nations.

Main Findings. TLOA raises examples of how health and welfare of animals and the colonised are abused, thus associating nobility with the powerless to injure. Such oppression is sometimes disguised as care. This inflicts guilt upon the powerful who judge that the powerless can be exploited. In fact, Costello's ascetic vegetarianism betrays her guilt. Rationalising her leather products as merely a petty obscenity, her judgement that humans should manage the ecology (including animals) reflects the neo-colonialist desire to control that which was economically manipulated by colonisers. Therefore, deriving from Nietzsche and Foucault, no decision is absolutely positive or negative.

Principal Conclusions and Implications for Field. Power struggles in ecological (especially animal) exploitation and colonisation are rife with guilt. Thorough reviews are thus needed for subjective judgements regarding well-being in human-animal and coloniser-colonial interactions.

188 Cross-species tragedy and trauma in Australian bushfires 2005 - 2020. Changing discourses.

Dr Janette Young¹, Dr Zoei Sutton²

¹University of South Australia, Adelaide, South Australia, Australia.

²Flinders University, Bedford Park, South Australia, Australia

Introduction: Nonhuman animals have always been impacted by bushfires in Australia. Yet this tragic reality has rarely been a significant focus of public media discourses. However, the unprecedented ferocity of the 2019/20 fire season has seen a shift in this focus, as traumatised bees, painfully (and fatally) burned sheep, cows and charismatic wildlife attracted both national and international media attention. This representation of nonhuman animals' experiences has been markedly different to that seen in past fire seasons.

Methodology: This presentation draws on a discourse analysis of bushfire reporting in South Australia between 2005 and 2020. Publicly accessible media reporting was analysed to document: the prevalence of reporting nonhuman animal impacts across time; the language used to describe nonhuman animals and their experiences; and other indications of concern for nonhuman animals such as those regarding rescue and responses, calls for volunteers, and donations.

Main findings: Preliminary findings support the hypothesis that the representations of nonhuman animals' experiences in the 2019/2020 bushfire period differ from reporting in previous years. Increasingly, nonhuman animals are positioned as fellow victims of bushfire, their experiences described using emotive language that highlights their suffering ("traumatised", "screaming", "crying out in pain"). This has extended to include previously overlooked "farmed" animals, indicating that the pattern of change over time pertains to both who is included in narratives of bushfires, and how.

Principle conclusions & Implications: Public media discourse regarding the impacts of bushfires on nonhuman animals in Australia is shifting. This research contributes to a body of knowledge around the links between media representations of nonhuman animals and perceptions and treatment of them. Mapping these shifts in language and representation highlights where and how public concern for nonhuman animal lives is broadening, which is likely to be of interest to those advocating for nonhuman animals in public discourse.

Presentation type Oral flash pre-recorded

119 Hispanic Attitudes Toward Vegetarianism: The Effects of Generation

Dr Valerie Sims, Dr Matthew Chin, Gabriela Flores-Cruz

University of Central Florida, Orlando, USA

Introduction: A 2018 Gallup poll found that overall 5% of the US population identifies as vegetarian, and that 9% of non-whites report being a vegetarian. However, they did not discriminate among ethnicities in this group. Qualitative data has shown that Hispanics associate their eating behaviors with their parents' culture (Fuster et al., 2019) and that mothers' beliefs about food affect family meal choice (Johnson et al., 2011). However, little research has examined subcultural differences in attitudes toward vegetarianism.

Methodology: Eighty-eight Spanish/English bilingual undergraduates from a large Hispanic serving institution in Florida completed the Attitudes Toward Vegetarians Scale (ATVS) (Chin et al., 2002) along with demographic and linguistic measures. Participants were categorized as 1) Immigrant (not born in US and parents not born in US), 2) First Generation born in US, or 3) Second Generation born in the US.

Main findings: A one-way ANOVA examining ATVS scores, with age as a covariate, yielded a main effect for Generation, $F(2,84)=5.01$, $p=.009$. Second generation participants had more negative attitudes toward vegetarians than either first generation or immigrants, $p<.01$. For the 64 participants who grew up in the US, zip codes were coded for percent Hispanic population and percentage living below poverty. A one-way ANOVA showed first generation participants lived in areas with a significantly greater percentage of Hispanics than either of the other two groups, $F(2,62)=4.53$, $p=.015$. There were no significant differences with regard to poverty rate.

Principle conclusions & Implications: One's personal diet was not predictive of ATVS scores. Attitudes toward vegetarianism in a Hispanic population are more related to one's parent's experiences than to one's own experiences.

214 An assessment of wildlife consumption, resource use, and attitudes to conservation of Batu Putih village and the impacts to Tangkoko Nature Reserve, North Sulawesi, Indonesia, with proposed conservation-development initiatives.

Helen Sampson¹, Prof Vicky Melfi^{2,3}

¹Plymouth University, Plymouth, United Kingdom. ²Hartpury University, Hartpury, United Kingdom. ³University of Sydney, Sydney, Australia

Introduction: Biodiverse areas worldwide are under increasing threat due to anthropogenic activities. In North Sulawesi, Indonesia, hunting and forest degradation are decimating tropical forest areas and threatening many species with extinction. Local communities are often reliant on forest resources for their livelihoods, yet heterogeneity in patterns of forest resource draw often exists. Identifying and understanding these differential factors is integral to the implementation of effective conservation-development initiatives. This study examined the current impacts that Batu Putih village has on the Tangkoko-Batuangas nature reserve in North Sulawesi.

Methodology: Household surveys ($n = 200$) were conducted to assess levels of wildlife consumption, forest resource use and attitudes towards conservation. Statistical analyses were performed to identify demographic and attitude predictors of consumption and forest disturbance.

Main findings: Results revealed relatively low levels of hunting but high levels of wildlife consumption and resource use, including a large dependence on firewood. Income was not found to be associated with consumption or forest resource use, however other household demographic variations were found to exist. Age, family size and attitudes were significantly associated with consumption of wild meat; age and length of residency were significantly associated with forest disturbance, and income and family size were found to be related to attitudes towards conservation and wildlife.

Principle conclusions & Implications: The causal reasons for these findings are discussed and appropriate conservation-development initiatives are evaluated and proposed.

Presentation type Poster

115 A Transdisciplinary Perspective on Dog-Handler-Client Interactions in Animal Assisted Activities

Renata Roma, Dr Christine Tardif-Williams, Dr Shannon Moore, Dr Sandra Bosacki

Brock University, St Catharines, Canada

Critical Review

Introduction: Many studies on Animal-Assisted Activities (AAA) have analyzed aspects directly related to dog-client interactions. There is a need to better understand how dog-handler teams have been described, conceptualized and incorporated into the analysis in previous research. This paper undertakes a scoping review and adopts a transdisciplinary lens to explore if and how the unique characteristics of dog-handler teams have been conceptualized and measured in previous studies. j

Methodology: Fifteen empirical studies from 2004-2019 in the AAA field including participants aged between 3 and 24 years were selected and reviewed. This scoping review maps what, if any, characteristics of dogs, handlers, and dog-handler teams have been described and incorporated into the assessment of AAAs. It also explores if, and how, the role of handlers has been analyzed (e.g., working alone or with other professionals such as teachers or nurses) has been analyzed, and considers handlers' responses to AAAs and participants' responses to handlers.

Main findings: Most of the studies reviewed highlighted variables related to dog-client dyads and were particularly focused on the unilateral effects of dogs on participants. There are gaps in terms of the description of handlers (e.g., age, gender) and dog-handler teams (e.g., relationship, years of experience). To date, researchers have yet to measure participants' responses to the handlers. In some studies, the relevance of other variables to the outcomes was discussed but rarely were incorporated as part of the analysis.

Principal Conclusions and Implications for Field: This review reveals a need for research exploring the therapeutic role of dog-handlers to better understand the mutual adjustments inherent to dog-handler-client triadic relationships. A transdisciplinary framework can inform the field of human-animal interactions by prioritizing a relational and contextual focus on the study of AAAs.

129 Exploring customers' animal welfare perspectives and attitude toward the use of antimicrobials in livestock farming

Seola Joo¹, Hang Lee¹, Yechan Jung², Myung-Sun Chun¹

¹Research Institute for Veterinary Science, College of Veterinary Medicine, Seoul National University, Seoul, Republic of Korea

²Research Ethics Center, Korea University, Seoul, Republic of Korea

Introduction: As a One Health issue, antimicrobial resistance (AMR) affects the lives of both humans and animals. Customers play a key role in the prudent use of antimicrobials (PUA) in livestock farming. Their purchasing behavior has been known to reflect their attitude, belief and self-efficacy toward livestock product safety. This study hypothesized that customers' animal attitude can also influence their purchasing behavior because reducing antimicrobials is recognized as animal welfare practice in livestock farming. Purchasing behavior was investigated in relation to Korean customers' attitudes and beliefs about the use of antibiotics, their animal attitudes and their ethical values.

Methodology: To explore the customers' attitude, knowledge, self-efficiency, and behavior on the use of antimicrobial agents in food animals, an online panel survey (N=1,000) was conducted in October 2019. Regression analysis was performed using SPSS 25.0 to find correlations of independent variables (age, income, knowledge, belief, trust and Animal Attitude Scale) with consumers' willingness-to-pay for livestock products with reduced use of antimicrobials.

Main results or findings: About 90% of the respondents agreed that antimicrobials should be used prudently for alleviating animals' pain and sufferings (90.5%) and that purchasing livestock products compliant with the prudent use of antimicrobials is ethical conduct (86.6%). In the regression model of willingness-to-pay ($F=24.011$, $p<0.001$) the coefficient estimates of age ($B=0.101$, $p=0.01$), household income ($B=0.069$, $p=0.02$), belief in the prudent use of antibiotics ($B=0.288$, $p<0.001$), self-efficiency on antibiotic-free livestock products ($B=0.097$, $p=0.01$), trust in control of AMR ($B=0.107$, $p=0.01$) and AAS ($B=0.115$, $p<0.01$) were positive and statistically significant.

Conclusion / Implications: The respondents' animal attitude significantly explained their willingness-to-pay, which implies they perceive the AMR as a matter of animal welfare. Customers with a pro-animal attitude would be more supportive of the prudent use of antimicrobials.

189 Domestication or Conservation: Feeding Cranes, Crane Observatory and Affordance between humans and animals in DMZ

Research Fellow Yunjeong Joo

Seoul National University, ISDPR, Seoul, Republic of Korea

Introduction: This research aims to analyze the interactions between humans and cranes through the crane-feeding practices at a bird observatory in Cheorwon DMZ Area, South Korea. Cheorwon is one of the vital habitats for endangered red-crowned cranes' conservation. To mediate the relations between photographers, farmers, tourists, and red-crowned cranes, Cheorwon locals have installed a bird observatory and started to feed the cranes during wintertime. It should be discussed whether such activities are domestication or proper conservation of wildlife.

Methodology: The research involved interviews with farmers, photographers, and ecologists, engagement in participatory observation of the crane feeding site and an on-site multispecies ethnography. The concept of 'affordance(Ingold, 2018)' was used to investigate how humans and animals perceive each other and form relations on their terms.

Main Results: The feeding practice resulted in the clustering of red-crowned cranes around the feeding site, leading to the creation of a potential tourist spot and denser interactions between humans and cranes, much to the opposition and criticism of ecologists. However, this feeding practice and the construction of the observatory have contributed to the protection of cranes by preventing predatory activities of photographers, who had previously chased the cranes away from their habitats, and providing much-needed food for various species. Moreover, the feeding practice brought changes to local communities, which had steadfastly opposed conserving the crane habitat and encroached on them beforehand. On the other hand, feeding the cranes may be considered as the domestication of wildlife to some extent.

Principal Conclusions and Implications for Field: The research findings suggest that feeding wildlife and constructing an observatory nearby wildlife habitats can provide opportunities to build interactions between humans and animals and promote co-existence, despite the potential risks of harming the life, reproduction, and natural habits of wildlife creatures.

211 Environmental education and its effect on knowledge, attitudes and empathy towards Sulawesi crested black macaques (*Macaca nigra*) in North Sulawesi.

Christa van Wessen¹, Prof Vicky Melfi^{2,3}

¹Wildlife Planet Trust, Paignton, United Kingdom

²Hartpury University, Hartpury, United Kingdom

³University of Sydney, Sydney, Australia

Introduction: Sulawesi is renowned for its high species endemism and biodiversity. The critically endangered Sulawesi crested black macaque *Macaca nigra* is one of seven primate species endemic to Sulawesi. Over the last 40 years this species' population has declined significantly, a trend that continues; direct threats to their survival include habitat destruction and hunting activities. The Tangkoko-Duasudara Reserve (Tangkoko) in north Sulawesi is thought to hold one of the largest populations of *M. nigra* in their native range. The aims of the current study were to implement an environmental education programme to increase knowledge about *M. nigra*, and to stimulate positive attitudes and empathy towards them in the village of Batuputih.

Methodology: Batuputih shares half of its boundary with the reserve and during the current study received three different educational materials; a poster, book and formal presentation, using the same graphics and content, which highlighted three threats to *M. nigra* survival and three potential mitigations. Household surveys were undertaken in Bahasa Indonesia (N=651) to collate information before and after the provision of educational materials to sub-sets of the village; educational materials were not provided by the survey team.

Main Results: Results revealed that type of material used, had an impact on the effectiveness of knowledge transfer and stimulating positive attitudes; the book and poster significantly increased knowledge and all three educational materials had a positive influence on attitudes and empathy in both villages.

Principal Conclusions: Over the course of the study (three months) the educational materials were seen to be effective.

180 Is it food or not? Mental representation of Tofu in Hispanic population

Gabriela Flores-Cruz, Dr Matthew Chin, Dr Valerie Sims

University of Central Florida, Orlando, USA

Introduction: Demand for plant-based meat has increased rapidly with a recent poll (Gallup, 2020) showing 41% of Americans have now tried it. Historically, tofu, a high-protein food made from condensed soymilk, has served as a meat substitute in vegan, vegetarian, and many Asian cuisines. Previous research has shown that cultural and linguistic backgrounds influence the mental representation of food (Flores-Cruz et al., 2019). The main purpose of our study is to determine the mental representation of tofu as food in a bilingual, Spanish-speaking population via a timed lexical decision task.

Methodology: The semantic relationship between two words was identified with the use of reaction times. Sixty Spanish/ English speaking undergraduates were asked “¿Son ambas palabras?” (Are both of these words?). The target words tofu and hamburger were paired with the Spanish words for food (comida) or animal. Also, participants were categorized on their parent’s birthplace (US or foreign country).

Main Results: A 2(Food Type: Tofu vs. Hamburger) x 2(Category: Animal or Food) x 2(Order: Target word or Category Word first) x 2 (Parents’ birthplace) mixed ANOVA yielded a four-way interaction, $F(1,38)=5.10, p=.03$. Separate analyses showed that parents’ birthplace was only a predictor of reaction time for tofu such that for those whose parents were born out of the US, the category food was slower to prime tofu, $F(1,58)=5.43, p=.023$. This suggests that when thinking of food, tofu does not come to mind easily for this group. Similar effects were not significant when they involved hamburger.

Principal Conclusions The analysis of word relatedness between tofu and food provide a better understanding of plant-based foods in Spanish speaking populations. Strategic marketing that utilizes language that semantically connects tofu and food could potentially be used to expand the market of plant-based protein in various linguistic communities.

Human-equine interaction - 4:20 - 5:40pm Friday, 4th September

Sponsored by The Donkey Sanctuary

Presentation type Oral live



83 On the value of donkeys to northern Ghanaian schoolchildren

Ms Heather Maggs, Professor Richard Bennett, Dr Andrew Ainslie

SAPD, University of Reading, Reading, United Kingdom

Introduction. Donkeys have traditionally been under-valued and under-researched, despite providing routes out of poverty to millions in LMICs. The views of children on the role of the donkey/s in their life have not been sought directly in past research.

Methodology. Two mixed-sex FGDs in different study sites were held during the 2018 dry season in northern Ghana. The same protocol was followed with two separate-sex FGDs during the 2019 wet season. Four interviews were held with teenage boys and girls from donkey and non-donkey owning households, plus participant observation with siblings from a donkey-owning family in both study sites, to triangulate the data to help increase the credibility and validity of the results.

Main Results. 100% of children in study site one and 90.9% in study site two believed their donkey reduced their workload: “I would have had to carry firewood on my head from the farm but with a donkey, I don’t have to do that”. 100% of children also thought their donkey was helpful: “We would have found it very difficult to get money to pay our school fees and basic learning materials”. Non-donkey owning children however feel the lack of the animal in their household: a boy stated, “We don’t earn enough money because we don’t own a donkey.” A girl said “[Children with donkeys] can go and play and do other things but those of us without the donkey to help, we

don't enough time to play. Because you will go many times for water and they will use their donkey and go once".

Principal Conclusions and Implications for Field. These results indicate that children from a young age view donkeys as helpful and believe they reduce their workloads. However, gendered social conditioning as to their use of the animals is also already apparent.

51 The impact of ageing: understanding decision making around care of the older horse

Rebecca Smith¹, Professor Elizabeth Perkins², Dr Gina Pinchbeck¹, Professor Cathy McGowan³, Dr Joanne Ireland³

¹Institute of Infection and Global Health, University of Liverpool, Liverpool, United Kingdom.

²Institute of Psychology, Health and Society, University of Liverpool, Liverpool, United Kingdom.

³Institute of Veterinary Science, University of Liverpool, Liverpool, United Kingdom

Introduction: The number of aged horses in the UK is growing, however veterinary involvement and the provision of preventive healthcare measures has been shown to reduce with increasing horse age. In contrast, as humans age consumption of health and social care services increases. Little is known about why some horse owners do not consult veterinarians over the course of their ageing horse's life. By understanding the complexities involved in owner decision making whilst navigating care provision for an older horse, tools to improve the welfare of this population may be designed.

Methodology: In the first stage of this research, data were collected from an open-access online discussion forum where contributors were seeking advice from other participants about the care and management of their older horse. Qualitative data analysis was performed using grounded theory methods.

Main findings: Analysis revealed the complex interactions within the human-horse relationship. As a horse ages its attributed purpose may change, encompassing needs of both the horse and owner. This change was found to dynamically interact with the resources assigned to the horse. The way in which an owner may choose to manage and respond to the environment in which the horse lives, is mediated by their goals around husbandry, for example in providing the horse with social interactions, as well as interpretation of horse related responses through objectification of the equine body. Decision making is integrated alongside anticipated outcomes for the dyad and the owner's beliefs around what constitutes a life worth living for their horse.

Principle conclusions and implications: A conceptual model was developed to demonstrate the multifaceted ways in which ageing affects the human-horse relationship and impacts upon outcomes for the horse. This can be used to aid development of practical guidance to improve the day-to-day care of the older horse.

30 Senegalese working equids - what is the real welfare problem?

Ms Alana Chapman¹, Dr Ewan MacLeod², Prof Yakouba Kane³, Ms Vicki Newton¹

¹World Horse Welfare, Norwich, United Kingdom. ²University of Edinburgh, Edinburgh, United Kingdom. ³Ecole Inter-Etats des Sciences et Médecine Vétérinaires, Dakar, Senegal

Introduction: Working equids are used to generate an income and support the livelihoods of many of the world poorest communities. They play a crucial role in Senegal's economy and are a vital link in increasing food security, especially in rural and suburban areas. Creating resilience within these communities is essential but requires a multi-pronged approach.

Methodology: A combined quantitative and qualitative approach was used, comprising of owner questionnaires (n=136), focus group participatory activities (n=5) and equid assessments (n=194).

Main Results: Results showed that almost 90% (95% CI = 81% - 92%) of owners stated that their equid provides the main or sole income for their family. Owners named and ranked colic, disease and lameness issues of highest concern. However, the welfare assessment found that the main factors affecting equid welfare were the number of days the horse worked (six hours per day (St Dev 1.08)), the hours it worked each day (seven days per week (St Dev 0.96)), the age at which the horse began its working life (on average 2 years of age), and the prevalence of injuries, with injuries found on 86% (95% CI = 81% - 90%) of equids.

Principal Conclusions and Implications for Field: To create long-term engagement in welfare programmes the views and concerns of owners must be addressed alongside issues identified in welfare assessments. Any efforts to improve equid welfare must consider a behaviour change approach and engage with owners on key topics to improve the lives of not only the animals but also the people that rely on them.

Presentation type Oral pre-recorded

29 Cultural ‘blind spots,’ social influence and the welfare of working equids in brick kilns in northern India

Tamlin Watson, Dr Laura Kubasiewicz, Dr Zoe Raw, Dr Faith Burden

The Donkey Sanctuary, Sidmouth, United Kingdom

Introduction. Human engagement is integral in creating sustained improvements to working equid welfare as interventions based purely on reactive measures fail to provide sustainable solutions. Humans, particularly those in low to middle-income countries, may have issues overriding their ability to care well for their equids, but these ‘blind spots’ are frequently overlooked when organisations develop intervention programmes to improve welfare.

Methodology. Employing a mixed methodology approach, we assessed the welfare of working equids in brick kilns in India. In addition, using livelihoods surveys and semi-structured interviews we established owners’ demographics, socioeconomic status, ethnicity, religion and their personal accounts of working lives and relationships to their equids.

Main Findings. Brick kiln workers face long distance migrations with their equids, where on arrival at their destination a lack of community cohesion, direct conflict, language, status and cultural barriers, leave migrants vulnerable to exploitation both economically and physically. Participants are often suffering themselves from malnourishment and ill health, and are impoverished and overworked, which creates additional difficulties when attempting to encourage change in management of their equids. This situation has negative implications for the care of working equids, as owners have neither economic stability, literacy, physical security, or access to adequate resources such as medical supplies, to provide care for themselves or ‘others’.

Principle Conclusions and Implications. NGOs traditionally work as silos focussing simply on the species within their organisation’s remit, with little consideration of the cultural backgrounds or context of those they aim to support, and frequently ignoring the role of women in equid care. We urge for a dedicated one health/ one welfare approach drawing on all voices from within the working equid’s care regime and incorporating collaborative efforts between organisations to support the human part of the animal welfare equation to promote truly sustainable behaviour change.

34 Horse Cents for Kids: Exploring the role of participation in an after-school horsemanship program on children's wellbeing and belief in animal minds

Dr Christine Tardif-Williams, Mrs. Renata Roma

Brock University, St. Catharines, Canada

Research Abstract

Introduction: This pilot study explores the role of participation in an after-school horsemanship program on children's well-being and belief in animal minds. The field of human-equine interactions is growing and while we are learning more about the impact of children's structured interactions with horses in equine facilitated learning and therapeutic contexts (Pendry, Carr, & Vandagriff, 2018), we know relatively less about the impact of children's unstructured interactions with horses and a diversity of farm animals.

Methodology: We interviewed eight children (5 girls; 3 boys; aged 9 to 11 years), who were referred to the program because they were living in socioeconomically disadvantaged homes, before starting the *Horse Cents for Kids* program and at the end of the nine-week program. Children responded to open-ended questions about their social and emotional wellbeing and their belief in animal minds. Salient themes in children's pre- and post-program responses were identified using qualitative content analysis (Hsieh & Shannon, 2005).

Main Findings: Findings reveal that while children were mostly excited about starting the program, they lacked confidence in their ability to manage the horses. Children's responses reveal the following themes as key aspects of their experience in the program: 1) *Perceptions of social opportunities and support*, 2) *Renewed self-confidence* 3) *Feelings of emotional connection toward horses/farm animals*, and 4) *Increased anthropocentric perceptions towards horses and belief in animal minds*.

Principal Conclusion and Implications: Children's experiences in the program were overwhelmingly positive. Understanding children's unstructured interactions with horses and farm animals is important and timely given the recent influx in educational efforts to expose young children to a diversity of animals through media sources, farm-, zoo- and nature-based activities. The significance of these findings for educational policy and within the broader context of children's unstructured interactions with diverse animals is discussed.

68 Learning with donkeys: a 'more-than-human' approach to animal assisted activities

Dr Cara Clancy, Dr Fiona Cooke

The Donkey Sanctuary, Sidmouth, United Kingdom

Introduction: The last twenty years have seen an explosion of interest in animal assisted therapy (AAT) and animal assisted activity (AAA). Equines are used in a range of human service contexts. However, very rarely are the voices of equines brought to the fore, as the majority of studies focus on the benefits to humans. Drawing on empirical research with donkeys, this paper suggests how animal assisted activities might be rethought from a more-than-human (i.e. non-anthropocentric) perspective, contributing to the field of AAA and recent developments in animal studies / human-animal interaction.

Methodology: This paper draws on in-depth interviews and ethnographic observations of donkey-facilitated learning (DFL), at three regional Donkey Sanctuary centres, to understand the needs and interests of donkeys partaking in DFL sessions. We documented the interactions between donkeys and humans through reflexive observation and 'thick description' (Geertz, 2008). This inspired new mixed-method approaches that better acknowledge the animal voice.

Main results/findings: Through our investigations, we revealed how AAA can be rethought in terms of animal work, as it often involves mental and emotional labour on the part of the animal. Secondly, we found that equine facilitators have a critical role to play in 'tuning in' to individual animal needs, to identify opportunities for positive experiences. Thirdly, we noted the importance of knowing individual donkeys for a more-than-human approach to AAA. Finally, we identified different social and environmental factors involved in creating spaces conducive to co-working and co-learning within donkey-facilitated learning programmes.

Principle conclusions and implications for field: We have sought to understand and promote donkey sentience and intelligence in the context of AAA. Together, our findings highlight important steps towards less anthropocentric approaches in AAA. We have also demonstrated that more species-specific research is needed, including a greater need to consider the animal experience when designing, developing and monitoring AAAs.

Presentation type Oral flash pre-recorded

215 Dumb ass? Linguistic representations of donkeys in UK popular media and the implications for welfare

Dr Cara Clancy¹, [Dr Emma McClaughlin](#)², Dr Fiona Cooke¹

¹The Donkey Sanctuary, Sidmouth, United Kingdom. ²Lancaster University, Lancaster, United Kingdom

Introduction: A growing body of work has explored the effect of language on the way animals are perceived and treated by humans. This paper reports the main findings from a systematic study of the language associated with donkeys in British culture and how their representations affect the ways in which these animals are understood and treated.

Methodology: A digitised body of texts (a ‘corpus’) about donkeys was gathered from domains including news, social media, and animal welfare organisation texts. The corpus comprised one million words and was examined using specialist linguistic software for salient patterns in the grammar and lexis, which we then explored qualitatively (using techniques from discourse studies) to draw out the key characteristics of discourse about donkeys.

Main results: Findings reveal the ways in which human dominance and social inequality (i.e. speciesist ideologies) are present in - and perpetuated by - language about donkeys. Donkeys feature in public discourses as victims in shock-value stories involving bestiality and (often extreme) acts of cruelty; as objects of entertainment in uplifting or entertaining soft-news stories; as objects of ridicule in zoomorphic representations (particularly in relation to politics and football); and as objects of pity when they are treated as commodities and consumables in geographically distant places.

Principle conclusions and implications for the field: The findings contribute to the growing body of work on the discursive representation of animals and have important implications for individuals and organisations seeking to promote positive cultural representations of donkeys and improve the welfare of donkeys. They offer a challenge to negative stereotypes and inaccurate understandings of donkeys, as well as harmful aspects of anthropocentrism in language use. For The Donkey Sanctuary in particular, they provide a starting-point from which to build more positive perceptions of donkeys by generating effective discussion and targeting communication amongst key audiences.

65 Identifying learning needs for working equine harness improvement

Ashleigh F. Brown¹, Peter Muckle²

¹Brooke, London, United Kingdom. ²SaddleAid, Anglesey, United Kingdom

Introduction: Ineffective and injurious harness creates myriad problems for working equine welfare and productivity including lesions, lameness and exhaustion; yet harness-improvement interventions are often of limited efficacy. This paper presents qualitative findings from learning needs assessment to understand practitioner knowledge on harness-related topics.

Methodology: 124 staff engaged in equine welfare projects in 12 countries rated their confidence on seven harness-related topics: explaining draught principles; explaining how harnessing affects equine welfare; fitting body harnessing; fitting head harnessing; identifying strengths and weakness of different harness types; advising owners/users on feasible solutions to harnessing problems; advising owners/users on training animals to work in harness. Respondents self-assessed as Not Confident ('really need more learning on this'), Moderately Confident ('some knowledge, but more learning would be helpful') or Fully Confident ('very comfortable to advise others'). Data were collected electronically via Survey Monkey.

Main Findings: Respondents expressed greatest confidence in explaining how harnessing affects equine welfare (40% Fully Confident). For all other topics less than 1/3 respondents (ranging from 17% - 29%) rated Fully Confident. Respondents indicated least confidence in fitting body and head harnessing (32% and 29% Not Confident respectively) and explaining draught principles (25% Not Confident).

When aggregating Not Confident and Moderately Confident responses, learning needs were high for all topics, ranging from 60% to 83% not Fully Confident. More than 4/5 respondents were not Fully Confident on explaining draught principles, fitting body harnessing and identifying strengths and weaknesses of different harness types, suggesting these are priority needs.

Principal Conclusions and Implications: Results are indicative of practitioners understanding welfare implications, but having less confidence in practicalities of harness utilisation, component function and fitting. Ensuring equine welfare practitioners have the requisite training to feel capable to identify and resolve harness deficiencies is integral to ameliorating harness-related problems for working equids and people dependent upon them.

146 Proximity and Time as Shared Bonding Strategies for Horses and Humans: A Mixed-Methods Study on Interspecies Social Bonding

Dr Emily Kieson^{1,2}, Hannah Dykes³, Dr Charles Abramson³

¹MiMer Centre, Torna Hallestad, Sweden. ²PATH, Denver, USA. ³Oklahoma State University, Stillwater, USA

Introduction: Horses and humans share a long history but little is known about mutual bonding. Horses form bonds with conspecifics in ways that differ from how humans create social connections and emerging research suggests that horses bond via proximity and that touch is often used as a secondary bonding mechanism; for humans, touch is a primary means of bonding.

Methodology: In this study, human participants were instructed to have specific interactions with several horses (scratching, patting, petting, or proximity sharing) in a pasture environment. Participants wore head-mounted GoPro cameras to record horse behavior, interaction duration, who initiated the approach (horse or human), and who ended the interaction (horse or human). Human participants were also interviewed to assess their emotional bonds with each horse after multiple interactions. Four interviews were successfully completed and were transcribed and coded based on values, emotions, and actions.

Main Findings: Consistent themes emerged from interviews for preferences for sharing proximity and time with horses as opposed to physical touch as well as feelings of emotional connection with horses who demonstrated a desire to share space even after contact had ended. Horses initiated contact, remained in proximity for longer times, and demonstrated fewer stress behaviors when engaged in proximity with humans versus contact.

Principle Conclusions and Implications: These results indicate that, compared to touch, proximity leads to better inter-species bonding from the point of view of both horses and humans. The results suggest that proximity (and time) are valued equally for both species with regards to inter-species bonding which could be used to support the use of unstructured time as a means of interspecies social bonding between horses and humans. This study can enrich methods in equine-assisted therapies and promote a more thorough understanding of how humans build mutually-beneficial social bonds with other non-human animals.

150 Qualitative evaluation of the impact of the IFEEL Method of Equine Facilitated Psychotraumatology (EFPT) intervention on military veterans

Dr Jane Williams¹, Sun Tui²

¹Hartpury University, Gloucester, United Kingdom. ²IFEEL, Withyham, United Kingdom

Introduction: The integration of equine-human interventions within counselling and behavioural development programmes is becoming increasingly widespread however studies evaluating their efficacy are limited. This study reviewed the emotional impact of engaging in a bespoke Equine Facilitated Psychotraumatology (EFPT) programme

Methodology: Retrospective, anonymised client evaluation records (n=35), from a centre specialising in equine facilitated practice (EFP) as part of mental health therapy, were reviewed. The programme consisted of Day 1: initial meet-the-horse session plus facilitator assessment of human-human and human-horse interaction, and concluded with a debrief session where the client reflected their experience including how they felt physically and emotionally. Day 3: 3 horse-related exercises with self-reflection and a client-facilitator debrief. At the start of each day, the client also rated their PIES: Physical, Intellectual, Emotional and Social status. Thematic analysis examined clients' PIES assessments and debrief feedback to assess the impact of the IFEEL Method EFPT intervention

Main findings: Three higher order themes emerged from client self-reflection of engaging in the EFPT: 1) development of self through engaging with the horse (recognising own emotions [self / horse], [increased] confidence, sense of achievement, horse protects / comforts); 2) positive shift in emotional state (relaxed, warm, calm, happy), and 3) connectedness (self, horse, others). Clients' perception of their own status changed from day 1 to 2 of the programme; Physical: tired / drained or fine / ok to comfortable / relaxed, Intellectual: 'busy' / engaged to positive / ready to learn, Emotional: anxious / tired or ok / calm to happy / looking forward or exhausted, Social: apprehensive / welcomed / 'OK' to comfortable / connected.

Principle conclusions and implications: These results suggest the IFEEL Method of EFPT intervention promoted positive change in participating veteran clients, however this represented the beginning of behavioural change and suggest EFPT does not offer a discrete solution as part of mental health therapy. Future work evaluating longitudinal effects of the IFEEL Method of EFPT is required to understand its potential benefits.

152 At-Risk Youth and Equine Assisted Activities: Effects on Self-Awareness, Confidence, Trust, Mental Health, Friendships and Understanding Emotions.

Jennifer Stephen, Dr Dasha Grajfoner

Heriot Watt University, Edinburgh, United Kingdom

Introduction: Equine Assisted Activities and Therapy (EAA/T) has recently received an increased research interest, however, there is limited understanding of how adolescents with additional social, emotional and behavioural needs experience EAA/T (Saunders-Ferguson *et al.*, 2008; Bachi *et al.*, 2012). This study explores their experiences of EAA programme (Equido) and the observations of course leaders delivering it.

Methodology: Ten young people (aged 12 to 18), referred to an EAA programme by their schools, and three course leaders, participated in a short 10-question semi-structured interview, focusing on their experiences of the activity. The programme is run within Equido, which is a qualification in natural Horsemanship that allows participants to work with the horse in a non-threatening way, focusing on the horses natural behaviour and welfare, allowing participants to explore their own and possibly mirrored behaviour.

Findings: Thematic analysis was selected as a way of identifying, analysing, and reporting patterns (themes) within the data. Six main themes emerged from the adolescent's descriptions: improved confidence, developing friendships/social support, learning about others, self-reflection/learning about self, improved mental health, and trust. This was mirrored in the five main themes which emerged from interviews with the course leaders: improved confidence, improved communication, emotional reflection and improved social interaction, learning and trust.

Principal Conclusions and Implications for Field The results from this study suggest that the relationships and experiences the young people had with the horses contributed to psychological wellbeing, self-awareness and social skills, which can be applied to both education and clinical settings.

References: Bachi, K., Terkel, J., & Teichman, M. (2012). Equine-facilitated psychotherapy for at-risk adolescents: The influence on self-image, self-control and trust. *Clinical Child Psychology and Psychiatry*, 17, 298-312

Saunders-Ferguson, K., Barnett, R. V., Culen, G., & TenBroeck, S. (2008). Self-Esteem Assessment of Adolescents Involved in Horsemanship Activities. *Journal of Extension*, 46(2)

Presentation type Poster

3 The Relationship Between Owner Attitude and Working Equid Welfare Across Cultures

Emily Haddy¹, Dr Leanne Proops¹, Dr Omar Ortiz², Humberto Zappi², Dr Faith Burden³, Dr Joao Rodrigues³

¹University of Portsmouth, Portsmouth, United Kingdom.

²The Donkey Sanctuary, Mexico City, Mexico.

³The Donkey Sanctuary, Sidmouth, United Kingdom

Introduction: It is now recognised that the quality of human-animal relationships plays a significant role in animal welfare and that human perspectives towards animals are affected by both culture and context. However, there is little research on working equid-human relationships, a context where this knowledge may have a significant impact on working animal welfare.

Methodology: A new protocol was used for assessing working equid welfare, including questions on owner perspectives towards their equids such as belief in their equid's capacity to feel pain and emotions. The questionnaire was paired with a physical and behavioural examination of the person's equid. 62 working equid owners from Europe and 120 working equid owners from Mexico participated in the study.

Main Findings: Results showed that, the general health status of equids whose owners believed that they could feel emotions was significantly better than those whose owners did not. The prevalence of lameness was significantly higher in equids whose owners believed that their equid could not feel pain compared to those owners who thought they could. Owners showed two differing perspectives towards their equids; primarily instrumental: viewing their equid as a working tool, or affective: incorporating an emotional connection with their equid. These two perspectives have been shown to differ based upon geo-cultural context and this study showed that equids of affective owners in Spain and Portugal had a higher average body condition score than those of instrumental owners. However, this relationship was not seen in the Mexican study population.

Principle Conclusions and Implications: The findings suggest that working equid welfare is linked to the attitudes, beliefs and traditional practices of equid owners. Increasing understanding of the cultural context, social structure and attitudes within a community may, in future, help to make equid welfare initiatives more effective.

28 Working equids in agriculture - does the invisibility of their role influence the care they receive?

Vicki Newton¹, Penny Ward², Alana Chapman¹

¹World Horse Welfare, Norwich, United Kingdom.

²National University of Lesotho, Roma, Lesotho

Introduction. Equids are the cultural symbol of Lesotho, yet their value in sustaining livelihoods is often missed. Although integral to the livestock system, working equids are a forgotten and invisible species, which impacts on the way people care and provide for them.

Methodology. A baseline study was completed in 2017/18. A total of 1139 households in the Maseru and Mafeteng districts were surveyed through questionnaires and focus group sessions.

Main Findings. Farming accounted for over half of total household income in highland areas, with a reliance on an average of 2.4 equids per household. These equids herd livestock, transport goods, foodstuffs and materials and are often the only means of transport for families to access services.

Despite their importance, there is a dearth in professional services and financial resources to maintain equids' health and welfare. Less than 25% of farmers surveyed in Mafeteng felt that their income could meet the needs of their equids. Very few farmers access professional and quality services, from routine to more invasive veterinary interventions (less than 1% consulted a qualified veterinarian to geld their stallion) or end of life decisions.

Principal Conclusions and Implications. Households are less resilient when their animals are at risk of poor health and disease. If equids are unable to work, there is a direct impact on the success of the wool and mohair industry - the core of Lesotho's rural economy.

Simple interventions can empower owners to keep their working equids healthy and better guarantee their continued productive benefit. Owners are required to make sustainable changes to their behaviours in managing their equids if they are to best meet their welfare needs and in return strengthen their own livelihoods. To do this, however, the value of working equids must be recognised on a wider scale, better understood and researched, acknowledged amongst policymakers, and championed.

60 Using visual imagery to assess UK public opinion on donkeys and human-donkey relations in the context of Animal-Assisted-Activities (AAA)

Andy Perry - The Donkey Sanctuary, Birmingham, United Kingdom

Introduction: Donkeys have experienced unfavourable public perceptions, which may contribute to human behaviours compromising welfare. A growing body of work examines how social representations of animals' impact perceptions and behaviours toward them (DeMello, 2012). This study examined effects of imagery on perceptions of UK donkeys, including their depiction in relation to humans in AAA. The Donkey Sanctuary has included images of donkey riding and ground-based interaction (including 'Donkey Facilitated Learning') in media. This study examined how riding and interaction imagery shapes perceptions of donkeys, including intrinsic and societal value.

Methodology: UK participants viewed two images: a child riding a donkey and a child interacting with a donkey at liberty. Questionnaires gauging perceptions accompanied images, which also asked for words describing how each image made them feel. Answers were displayed graphically, and frequency of descriptor words were tabulated. Words were classed as positive, neutral or negative and frequencies displayed graphically. 23 participants were interviewed, gaining a deeper understanding of perception. Questionnaires were disseminated via social media platforms and in person to TDS volunteers and visitors, surrounding areas of TDS Birmingham, and to college and university students (400 responses). Various study sites aimed to broaden the recipient demographic.

Main Results: Riding imagery divided feelings, with almost equal negative (46) and positive (51) words. Interaction imagery elicited universally positive (68) words (1 negative). Questionnaires show a similar split opinion: fewer people believed the ridden donkey to be well/very treated (195.vs.304), capable/very capable of emotionally helping humans (281.vs.365), or capable/very capable of feeling emotions as humans do (295.vs.363). Interviews detailed favourable perceptions of interaction, with less perceptions of discomfort or exploitation.

Conclusions/Implications for Field: Findings suggest public perception is shaped by imagery depicting different human-donkey interactions, specifically concerning the way donkeys are utilised in AAA. These findings can be used to inform TDS communication strategies to best reflect the charity's vision and experiences of donkeys within its care.

References: DeMello, M. (Ed) 2012. Speaking for Animals: Animal autobiographical writing (231-244). New York: Routledge.

154 One Health (OH) and One Welfare (OW): Are they considered in professional careers in equine therapy?

Carolina Cefrorella BSc^{1,2,3,4}, Gonzalo Ganzabal^{5,3,6}, Dr Evelyn Segredo^{7,8}, Sylvia Corte MSc^{9,1}, Hector Ricardo Ferrari PhD¹⁰

¹Academic Research Group in Anthrozoology, Montevideo, Uruguay.

²Fundación para el Asesoramiento y Acción en Defensa de los Animales, barcelona, Spain.

³Proyecto Caballo, Girona, Spain.

⁴International Alliance for Healthy Equine Interaction, aragon, Pakistan.

⁵iPoney Outdoor Spaces, basque country, Spain.

⁶International Alliance for Healthy Equine Interaction, Aragon, Spain.

⁷Academic Research Group in Anthrozoology, Montevideo, Uruguay.

⁸Public Health, Montevideo, Uruguay.

⁹Ethology section, Biology Institute, Faculty of Sciences. University of the Republic, Montevideo, Uruguay.

¹⁰Section Animal Welfare, Faculty of Veterinary Sciences. University of Buenos Aires, Buenos Aires, Argentina

CRITICAL REVIEW

Introduction: The concepts of OH and OW present a huge challenge when being put into interdisciplinary practice. Equine therapies have become one of the most promising scenarios for applying OH/OW concepts practically and theoretically. Professional training for working with people with disabilities in the context of equine therapy is a key point for determining a direction and transmitting these new concepts. The objective of this study is to analyse how many of the most certified or recognized professional trainings worldwide have incorporated the OW/OH perspectives in their program.

Methodology: An online search for professional equine therapy training was carried out. The keywords used (in English and Spanish) were "official course; equine therapy training; equine-assisted interventions; 2020". The selected sample consisted of 20 programs, limited to trainings aimed at working with people with disabilities or certain pathologies. The variables analysed in each training were: country, institution (university, social organization, riding centre or therapy centre), type of certification (number of hours, theory and practice with horses), modality (attending, semi-attending, online), content on equine and animal welfare vs. content on human health.

Main findings: In all cases analysed, the content on humans was 60 % higher in relation to the content on horses. More than 60 % of the trainings are not certified as formal education on a national level.

Principal conclusions and implications for field: This general review clearly shows that the programs of most professional trainings do not include an integral approach to human, animal and environmental health and welfare. The current situation of professional equine therapy training - as a key point to applying these new concepts - must be evaluated and reconsidered.

175 Special with horses. A case study of Equine Assisted Pedagogy for two adolescents with multiple challenges

Dr Tia Hansen, Dr Charlotte Glintborg - Aalborg University, Aalborg, Denmark

Introduction: Several reviews suggest that Animal Assisted Interventions (AAI) hold promise in the field of developmental disorders. However, some youngsters have multiple profound challenges that prevent participation in standard programs. In such cases, long-term tailor-made Equine Assisted Pedagogy (EAP) may be relevant.

The present case study explored a 5-year riding component of special education for two youngsters with developmental disabilities, profound hearing loss, and other diagnoses.

Method: We conducted semi-structured interviews with the adolescents (via a sign language interpreter), their mothers, their special education riding instructors, and their special education primary teachers. Interviews were transcribed and cross-case thematic analysis applied. Socio-cultural psychology served as theoretical framework, specifically notions of scaffolding and narrative identity.

Main findings: Main themes derived were: Improved balance and body sense, augmented development of cognitive abilities, augmented development of social and collaborative abilities, joy and pride in accomplishments, and being someone who “is good with horses”. The first three themes correspond to explicit goals set by the special education teachers and riding instructors, and their means correspond to scaffolding. The last two themes seem to be collateral gains and motivators. The motivating effect of horses has also been found in other studies. Becoming “someone who is good with horses” is less often described and was not mentioned as explicit goal by anyone in the present study; nevertheless the theme showed up repeatedly in most of the interviews, suggesting that this addition to the protagonists’ identity could be an important implicit outcome.

Principle conclusions and implications for the field: When challenges are too severe to participate in standard EAI, long-term EAP may be still be worthwhile. Gains seem to include augmented development in some of the areas described in studies of standardized programs, and gains may also extend the explicit goals set, notably in terms of identity.

213 An application of the One Welfare approach to donkeys in the Brazilian Northeast

Dr Mariana Bombo Perozzi Gameiro, Dr Frederico Mazzocca, Master Sharacely Farias, Dr Adroaldo Zanella

University of Sao Paulo, Pirassununga, Brazil

Introduction: The One Welfare concept deals with the interconnexions between animals, human and the environment, requiring a pluridisciplinary approach to address

the systemic relations between ethics, politics, economics and culture in the Anthropocene. This paper presents a case study on donkeys submitted to mistreatments in Brazil, to supply an international chain trade of skins and meat. This business model led thousands of donkeys to death, threatened biosecurity and the species conservation, supporting the importance of this concept.

Methodology: An integrative approach was adopted, with veterinarians, biologists, sociologists, and civil society representatives working in field from February to October 2019. The action strategies were divided into two groups: 1) veterinary care (nutrition, diseases, castration); 2) a qualitative approach, based on participant observation and interviews with social actors selected by their importance in the chain of events, in Canudos and Euclides da Cunha (Brazil).

Main findings: Early 2019, near 800 donkeys were found confined in a farm, starving and thirsty; nearly 200 had already died. They were going to be sent to slaughterhouses; meat and skins would be exported. This case is not an exception and results of a trade agreement between Brazil and China. The capture of donkeys from roads and rural communities, their illegal transport and inadequate housing conditions have severely threatened the welfare of the animals, put in risk nearby population health and created a major conflict about their symbolic representations. The intervention of a coalition of social actors led technical teams to end Bahia's worst zoonotic crisis and allowed the transfer of donkeys to a farm where a process of adoption is in course.

Principle conclusions and implications: First it revealed the human and animal health and social consequences of trade practices that do not respect animal welfare. Secondly, it shows the advantages of a multidisciplinary One Welfare approach.

59 Using Motivational Interviewing for behaviour change in equine owners who are, or at risk of, equine animal hoarding: a report on a training programme for UK Equine Welfare Officers

Bronwen Williams

Registered Mental Health Nurse, Worcester, United Kingdom. Independant Trainer and Educator, Worcester, United Kingdom

Introduction: The hoarding of animals is little understood or researched but has significant impact on humans, animals, communities and the environment. Multiple agency involvement is often required, but there are no clear interventions for animal hoarding.

Methodology: This paper reports on a project, funded by World Horse Welfare, that trained the charity's Equine Field Officers and other staff in Motivational Interviewing (MI). World Horse Welfare is now considering ways to use the approach throughout the organisation. MI is an evidence based, well respected approach for working with people who have the most difficult to treat behaviours such as substance misuse,

gambling and other addiction problems. It has only recently been considered to support behaviour change in animal owners, to improve the welfare of their animals. Bespoke MI training was delivered to 26 workers over several weeks, allowing practice of the skills between sessions.

Main findings: Most of those trained report an increased ability to facilitate behaviour change in equine owners and others that they work with. A number are reporting successes in working with those who are hoarding equines, or who are at risk of hoarding. Early results following the MI training have included owners of numbers of equines engaging more positively with the equine welfare officers, reducing the numbers of animals more readily, signing them over where required and allowing easier and more robust conversations about the need to euthanize where there are no other options. Difficult to engage owners, and others, have been found to be more likely to continue working positively with the charity following difficult interventions, and it has been possible to maintain engagement where it would have failed in the past.

Principle conclusions: Early indications show that MI may be a useful skill to learn and employ for those working with very difficult animal welfare issues, including the hoarding of animals.

118 Building Bridges: Community Partnerships for Child Victims and Witnesses of Domestic Violence

Dr W. Leigh Atherton¹, Dr Cheryl Meola²

¹East Carolina University, Greenville, USA. ²Mane Source Counseling, Greenville, USA

Introduction: Children exposed to domestic violence (DV) are at high risk of developing trauma-related symptoms. Further, those who do develop symptoms are entering the treatment system at an extremely low rate. There are multiple barriers to entering treatment, with lack of self-advocacy, stigma, transportation issues, and lack of family-focused services being among the most commonly noted. The purpose of the Building Bridges program is to provide an Equine Assisted Learning (EAL) intervention focused on addressing trauma-related symptoms.

Methodology: The 10 participants in this study were predominantly female (n=6), Caucasian (n=4) or African-American (n=4), with a mean age of 9 years old (range 6-15 years old). There were two miniature horses, Sammy and Gunner, participating as the non-human therapy partners in the intervention. This study used an exploratory design to explore the influence of an EAL intervention on self-report measures of trauma, depressive, and anxiety symptoms. Participants engaged in four 60-minute EAL interventions with a structured interaction with the equine therapy animals. Participants completed pre- and post-test measure of Child PTSD Symptom Scale, Patient Health Questionnaire-9, and Generalized Anxiety Disorder-7 measures. Data analysis was conducted using paired-sample t-tests to examine the differences between pre-test and post-test measures.

Main Results: Analysis of the data suggests a significant reduction in self-reported psychosocial symptomology upon completion of the four session EAL intervention. Paired-samples t-tests indicated there was a statistically significant reduction in trauma symptoms ($t(9) = 3.713$, $p < 0.05$), depressive symptoms ($t(9) = 3.413$, $p < 0.05$) and anxiety symptoms ($t(9) = 2.438$, $p < 0.05$) from pre-test to post-test.

Principle Conclusions and Implications for Field: Despite a low sample size, the significant changes in psychosocial symptoms demonstrate a strong promise for the four session EAL intervention for children exposed to DV. Future research should replicate this intervention with larger sample and control group.

157 Quantitative evaluation of the impact of the IFEEL Method of Equine Facilitated Psychotraumatology (EFPT) intervention using the Clinical Outcome in Routine Evaluation Outcome Measure (CORE-OM)

Dr Jane Williams¹, Sun Tui²

¹Hartpury University, Gloucester, United Kingdom. ²IFEEL, Withyham, United Kingdom

Introduction: Equine-human interventions within human counselling and behavioural development programmes are increasing in popularity. However, a paucity of evidence-based studies exist evaluating the impact of these on their human participants. The Clinical Outcome in Routine Evaluation Outcome Measure (CORE-OM) is a validated self-report questionnaire measuring psychological distress designed to be administered before/after therapeutic programmes. This study assessed the impact of a 3-day Equine Facilitated Psychotraumatology (EFPT) on participants' psychological health using CORE-OM.

Methodology: CORE-OM consists of 34 likert-scale questions (rated 1: not at all to 5: most/all of the time) covering four dimensions: subjective well-being (Core-W), problems/symptoms (Core-P), life functioning (Core-F) and risk/harm (Core-R). Mean scores are produced for each dimension, Core-ALL and CORE-ALL^R. CORE-ALL mean scores between 0-4 indicate global psychological distress from 'healthy' (0-<0.6) to 'severe' (>2.5), with the clinical cut-off for distress >1.0. The questionnaire was administered before and after the 3-day EFPT intervention; participants (n=37) completed the questionnaire at the start of day 1 (D1) and at the conclusion of day 3 (D3). CORE-OM scores met non-parametric assumptions, therefore Wilcoxon Signed Rank analyses (significance: $P < 0.05$) identified if differences occurred between client CORE-OM scores from D1-D3. Scores are presented as mean±sd in accordance with the CORE-OM methodology.

Main findings: CORE-OM scores consistently decreased from the start to the end of the EFPT intervention demonstrating a reduction in clients' psychological distress: Core-W scores D1:2.02±0.86, D3:1.48±1.02, $P=0.0001$; Core-P scores D1:2.1±0.82, D3:1.22±0.80, $P=0.025$; Core-F scores D1:1.83±0.7, D3:0.87±0.77, $P=0.0001$; Core-R scores D1:0.71±0.83, D3:0.22±0.47, $P=0.0001$; Core-ALL scores D1:1.74±0.65, D3:0.92±0.64, $P=0.007$; CORE-ALL^R scores D1:1.99±0.70, D3:1.74±0.74, $P=0.025$.

Principle conclusions and implications: The IFEEL Method EFPT intervention was an effective tool to reduce psychological distress on a short term basis in this sample. CORE-OM provides an objective, repeatable and validated measure by which equine-human interventions can be evaluated.

158 Can equine-assisted activities benefit people living with dementia: Two case study examples

Alison Rood, Sienna Taylor, Dr Jane Williams

Hartpury University, Gloucester, United Kingdom

Introduction - Globally, the number of people living with dementia continues to rise. To improve quality of life (QoL) non-pharmacological approaches are often preferred. Equine-assisted activities (EAA) may be beneficial, yet research is limited. Outdoor activities can also be beneficial. Case studies (n=2) were used to explore what effect EAA had on the QoL of participants diagnosed with dementia compared to a greenspace activity.

Methodology - Two female participants with dementia were recruited. Participants identified as animal lovers and one had horse experience. Covering a five-week duration, the QoL-Alzheimer's Disease (QoL-AD) measure was used pre and post completion of four interventions: walking (greenspace), stroking, grooming and leading (horse). Carers accompanied participants. Mood was self-rated by the participant and assessed by their carer immediately before and after each intervention. The greenspace setting was a public park, and a Riding for the Disabled (RDA) centre was used for EAA interventions. The same RDA staff and horses were used in each intervention. Interventions were filmed and analysed using an ethogram. Frequency and duration of 13 behaviours were analysed. Footage was independently assessed by a dementia care professional.

Main Findings - QoL-AD measure found no overall improvement pre to post interventions. The greenspace intervention produced no improvement. Mood improved following EAA. Of the activities undertaken leading produced the most laughing and smiling behaviours whilst grooming was undertaken for the longest duration. Participants and carers reported excitement, increased confidence, enjoyment of horses and the outdoor environment. Analysis by the dementia care professional confirmed these findings.

Principal Conclusions and Implications for Field - This preliminary study found EAA beneficial as it produced an increased variety of positive behaviours compared to the greenspace intervention. Generalisability and duration of improvement is uncertain. Longitudinal research with more participants is required to understand benefits and develop suitable EAA activities for people with dementia.

160 Potential use of heart rate measurement for matching horse and coachee in equine coaching

Dr Kathalijne Visser, Dr Monique Kuypers

Aeres University of Applied Sciences, Dronten, Netherlands

Introduction. Equine coaching is becoming increasingly popular in the Netherlands. The effectiveness of the session mainly depends on the match between horse and coachee. While equine coaches use horse behaviour to interpret the match, physiological variables to indicate a match, like heart rate, have not been studied.

Methodology. A total of 6 horses and 9 coachees were included in a pilot study to measure the heart rate during a 3-minute acquaintance phase in an equine coaching session. The study was performed in an indoor arena at Aeres University of Applied Sciences, Dronten, the Netherlands. Coachees were coached by students practicing equine coaching during the course of their bachelor's degree. Heart rate was measured with Hylofit heart rate system measuring heart rate of horse and coachee simultaneously. A total of 18 combinations horse and coachees were measured. The total coaching session lasted between 13 and 26 minutes. Only heart rate of the first 3 minutes was used for the study. Analysis was performed using SPSS software.

Main Results. Descriptive analysis showed that the heart rate of horses during the 3-minute acquaintance phase was 35.57 ± 4.09 bpm and of the coachees 95.88 ± 8.81 bpm. Pearson correlations showed that heart rate of coachees and horses were significantly correlated for 11 out of 13 combinations during the 3-minute acquaintance phase ($0.179 < r < 0.676$, $p < 0.05$). However, increases or decreases in heart rate did not correlate between horses and coachees ($p > 0.075$).

Principal Conclusions and Implications for Field. These findings suggest that the measurement of heart rate during equine coaching sessions may be indicative of a match between horse and coachee, and hence could be an added value for the coach during the session.

Careers in Anthrozoology Panel Discussion - 6:00 - 6:40pm Friday, 4th September

Session Chair - Dr Kerri Rodriguez

Anthrozoology is a rapidly growing interdisciplinary field with a wide array of career opportunities. However, navigating this exceedingly diverse and unique job market can be daunting for many students and young professionals. This panel discussion and Q&A will be centered on discussing career options in anthrozoology, with the following aims:

- 1) Inform ISAZ students about the broad range of academic and non-academic positions in which they can apply their scientific knowledge and skills
- 2) Discuss current challenges in navigating career decisions and pathways in anthrozoology
- 3) Have diverse professionals in the field describe their individual paths to success and share knowledge with the rising generation of anthrozoology students

The target audience of this workshop is ISAZ student conference attendees as well as young professionals interested in learning more about career options in anthrozoology. The format will be largely discussion-based with a panel member Q&A.

The panel members are:

Dr Aubrey Fine - Professor at California State Polytechnic University in Pomona, and Animal Assisted Therapy (AAT) licensed practitioner in Claremont, California where he specializes in treating children with ADHD, learning disabilities, developmental disorders and parent-child relations.

Dr Sabrina Schuck - Assistant Professor of Pediatrics at the University of California, Irvine. At UCI, she leads the Positive Assertive Cooperative Kids (P.A.C.K.) where her research team investigates practical applications of Animal Assisted Interventions for children with ADHD and Autism.

Dr Rachel Casey - Director of Canine Behaviour and Research at Dogs Trust, the UK's largest dog charity. Dr Casey is a veterinary surgeon, a clinical animal behaviorist, and an animal welfare scientist with a PhD in animal behavior.

Session chair: **Kerri Rodriguez** is the student representative on the ISAZ board. She recently earned her Ph.D. in Human-Animal Interaction at the Purdue University Center for the Human-Animal Bond with Dr Maggie O'Haire. She is a currently human-animal interaction postdoctoral fellow at the Human-Animal Bond in Colorado (HABIC) at Colorado State University.

Animal welfare

Presentation type Oral pre-recorded

197 Animal cruelty and neglect in Victoria, Australia: prevalence, reporting, and community attitudes

Carmen Glanville¹, Dr Jennifer Ford², Rebecca Cook², Prof Grahame Coleman¹

¹Animal Welfare Science Centre, University of Melbourne, Melbourne, Australia. ²Royal Society for the Prevention of Cruelty to Animals, Victoria, Melbourne, Australia

Introduction: Animal mistreatment is known to co-occur with human welfare issues, representing a significant One Welfare issue. However, the scale and distribution of the problem is largely unknown. This study aimed to understand; 1) the prevalence of mistreatment, 2) how representative report rates are of prevalence, and 3) whether differences in report rates and prevalence are reflected by community attitudes.

Methodology: A representative telephone survey ($n=1801$) was conducted across six Local Government Areas (LGAs); three with high numbers of RSPCA reported cases and three demographically similar areas with low numbers of cases. Attitudinal dimensions investigated included concern for mistreatment, valuing of animals, and affection for animals. Factorial ANOVA was used to investigate differences between high and low reporting LGAs, region types (regional, interface, metropolitan), and target species (cat, dog, horse).

Main Findings: While 25.7% of participants witnessed at least one incident of mistreatment in the preceding year, only 9% of those people reported to RSPCA Victoria. Matched pairs of high and low reporting LGAs did not differ in prevalence, though regional LGAs demonstrated higher prevalence than metropolitan and interface LGAs, $F(2,444)=3.554$, $p=0.029$, $\omega_p^2=0.011$.

High reporting LGAs demonstrated slightly higher affection for animals than low reporting LGAs, $F(1,1679)=19.401$, $p<0.001$, $\omega_p^2=0.011$, but did not differ on the other variables. While regional areas recorded a higher prevalence of mistreatment, they did not demonstrate lower affection or valuing of animals. However, regional areas were slightly less concerned about the mistreatment of cats than other region types $F(4,6.808)=5.925$, $p<0.001$, $\omega_p^2=0.013$.

Principal Conclusions and Implications: Animal mistreatment is common and under-reported. Report rates do not reflect prevalence and must be interpreted with caution. These findings highlight the need for evidence-based prevention as it is only with an accurate understanding of the problem that appropriate interventions can be identified.

32 How owner expectations and perspectives influence peoples' training methodology of companion dogs in Aotearoa New Zealand.

Erin Jones

University of Canterbury, New Zealand Centre for Human-Animal Studies, Christchurch, New Zealand

Introduction: There are many misconceptions about dog behaviour that can impact their welfare; one being the erroneous wolf pack theory. In this study, I look at how this misconception influences peoples' perceptions and expectations of dog behaviour and how this might impact humane training practices.

Methodology: 15 dog-human dyads/triads were interviewed in their homes. The interviews used a semi-structured set of 20 questions related to owner expectations, concepts of dominance, consent, and training philosophies. Dog-human interactions and dog behaviour were also observed and recorded using an ethogram. These exploratory data were analysed to identify owners' expectations and perceptions of dominance, and how training choices impact their dog. Survey research based on these data is planned.

Main Results: The concepts of what constitutes a "good" dog and a "bad" dog were similar among most participants. Obedience, recall, friendliness and focus around distractions were considered desirable behaviours. Aggressiveness, owners lack of control, and jumping on people were major markers for "bad" behaviour, and most participants saw this as due to a lack of training or owner responsibility. Though most people claimed to use positive reinforcement to train, their behaviour in these "embarrassing" and "frustrating" situations suggest that most owners will revert to punishment to demonstrate that they acknowledge the "misbehaviour" and are willing to take responsible action.

Principle Conclusions and Implications for the Field: There was a clear lack of fit found between owner expectations of dogs, actual management practices, and training philosophies. The welfare of companion dogs must consider the psychological effects of training and management, both positive (clarifying the conversation between dogs and humans) and negative (limitations of conformity). Collectively, as a part of a mixed methods approach, this will contribute to the research backing a standardization and regulation bridging the welfare sector and the dog training industry.

64 Post adoption support - why do owners decline behavioural advice for canine problem behaviours?

Dr Emma Buckland, Dr Jane Murray, Joshua L. Woodward, Rosa E. P. Da Costa, Dr Rachel Casey

Dogs Trust, London, United Kingdom

Introduction: Tailored post-adoption support, offered by some rehoming organisations, is aimed to provide early and preventative advice to improve adopted dog and owner quality of life, thus increasing successful adoptions. Although advice is free-of-charge, owners can decline to receive it. In this study, we investigated whether owners accepted advice after reporting specific behaviours during a post adoption follow-up call.

Methodology: Telephone surveys were scheduled for owners at 2-5 days following adoption of a dog from UK Dogs Trust Rehoming Centres. Calls included questions on undesirable behaviours towards a person or dog and when left at home alone, with behavioural responses read out to owners. Pre-defined algorithms were used to trigger an offer of advice in the form of a call-back from a behaviourist.

Main Findings: In total, 53% owners (1125/2124) were offered behaviour support but 68% (767/1125) declined the offer. Advice was accepted by only 30% (131/437) for behaviours towards people or dogs and 28% when left alone (96/338). For owners who reported both, 42% (104/250), accepted advice. The behaviour and context influenced acceptance of support. For example, advice was accepted by 61% (11/18) of owners who reported their dog lunged forward whilst barking towards another unfamiliar dog, but only by 27% (4/15) when the dog was growling towards an unfamiliar dog. Many owners who declined advice used terms including having no concerns, happy to monitor or see how they get on, or that the behaviour had only happened once or a few times.

Principle Conclusions and Implications: Over two-thirds of owners declined the offer of advice after reporting specific behaviour(s). This may be dependent on the context of the behaviour. Understanding barriers to support for newly rehomed dogs could help improve rehoming, provide advice to reduce behavioural problems and improve retention of adopted dogs in the home.

76 “Don’t bring me a dog...I’ll just keep it”: Understanding unplanned dog acquisitions

Dr Katrina Holland, Dr Rebecca Mead, Dr Melissa Upjohn, Dr Rachel Casey, Professor Rob Christley

Dogs Trust, London, United Kingdom

INTRODUCTION: Understanding the range of factors that result in people becoming dog owners is key to developing messaging around responsible acquisition and providing appropriate support for prospective owners to optimise dog welfare. This qualitative study investigated factors that influence pet dog acquisition.

METHODOLOGY: Semi-structured interviews were conducted with 136 sets of dog owners at 23 Dogs Trust community events in areas of the UK with a known high proportion of the population of low socioeconomic status. Interviews focused on the

motivations and influences that impacted how people acquired their dogs. Transcribed interviews and notes were coded in NVivo (v.12) using inductive thematic analysis.

MAIN FINDINGS: Across our participants, two types of acquisition were reported that each accounted for around half of our interviewees' experiences: planned and unplanned. Whilst planned acquisitions involved an intentional, active search for a dog, unplanned acquisitions occurred following an unexpected and unsought opportunity to acquire a dog. The circumstances of unplanned acquisitions varied but frequently involved significant life events (e.g. illness, death or changes in housing) affecting family or friends. Key motivations for deciding to take the dog included the new owner's relationship with the dog, the influence of other household members, and a desire to rescue the dog. Many reported making the decision to acquire the dog without hesitation, and thus many new owners did not conduct any pre-acquisition research about dog ownership.

PRINCIPLE CONCLUSIONS AND IMPLICATIONS FOR FIELD: This study found that many dog owners attending Dogs Trust community events had not intended to acquire their dog. This finding presents a valuable insight for designers of educational campaigns about responsible acquisition and ownership, as there is minimal opportunity to deliver messaging with these unexpected acquisitions. Additionally, these findings may guide future research, to develop more accurate understandings of the acquisition process.

89 Companions looking for a forever home: portraying rescue dogs online

Dr Nora Schuurman

University of Turku, Turku, Finland

Introduction. The transnational practices of importing homeless animals to Finland and the interest in adopting them have increased significantly during the past two decades. The charities importing them mostly operate on a voluntary basis and in collaboration with local charities in the countries of origin. The interest in transnational rescue practices derives from a critique of contemporary pet keeping culture with its current problems concerning dog breeding and puppy mills. In this presentation, I explore how rescue dogs imported to Finland are portrayed online by the charities and how their 'adoptability' is performed to possible adopters. I ask what kind of stories are told about a rescue dog with often traumatic past experiences and special needs regarding future care. I focus on how the dogs' agency is interpreted in relation to their past, and on the expectations placed on their future home.

Methodology. The material consists of textual presentations of 22 dogs, collected from the web pages of three Finnish charities. The material was analysed thematically.

Main Findings. In the data, the dogs are presented as individuals with past experiences of abuse and neglect and, simultaneously, as attractive companions with their own interests, fears, strengths and weaknesses. They are offered for adoption as

charismatic pets but, at the same time, competent carers are sought for them. The dogs' stories also reveal how the concept of 'rescue' is situated in the different spaces of suffering and care.

Principal Conclusions and Implications. Previous research on transnational animal rescue practices is sparse. The present study, however, sheds light on these recent developments in human-animal relations and the changing attitudes to companion animal keeping in the West. In the adoption of a rescue animal, the pursuit for animal welfare and the yearning for a personal animal companion intertwine in a previously unseen way.

153 “What would you do if it was your cat?”. The Autonomy Principle in Veterinary Ethics

Dr Karen Hiestand

University of Sussex, Brighton, United Kingdom

Introduction: Beauchamp and Childress put forward four principles of bioethics: autonomy, non-maleficence, beneficence and justice. Autonomy has emerged as hugely influential in the human medical field where it refers to the right to make decisions for oneself. The evolution of veterinary medical ethics follows developments in the human medical field. As such, a shift from the accepted paternalistic approach towards a greater respect for autonomy and informed consent has taken place in the veterinary sphere, but to whom is this autonomy afforded?

Methodology: This ethical piece will set out the argument that the transference of autonomy to owners/clients misconstrues the principle, which is predicated on a relationship between individuals and their medical practitioner, and therefore owes little to the social movement towards a respect for patient autonomy in medicine.

Main results/findings: The veterinary profession has a strong impetus to adhere to the principle of autonomy if it is to remain in a trusted and respected position. However, owners report mixed desires regarding the role of vets with some calling for professional intervention in decision-making, while others value their own autonomy.

Principle conclusions and implications for field: Affording autonomy to clients rather than animal patients corrupts the intention of the bioethical principle. Greater salience instead ought to be placed on veterinary treatment decision-making being that of a proxy for an incompetent therefore more appropriate frameworks ought to be engaged.

Presentation type Oral flash pre-recorded

23 Unique New York: Examining the impact of breed labels, phenotypic variations, and geography on length of stay in a multi-location New York limited intake animal shelter

Nicole Passmore, Dr Sarah-Elizabeth Byosiere

Hunter College, New York, USA

Introduction: After dog adoption rates increased at a Florida animal shelter when breed labels were removed from the shelter’s kennel cards, some shelters stopped assigning breed labels to dogs at intake. One of these shelters was Bideawee, a limited admission shelter with three locations in the greater New York area.

Methodology: In this study, we looked at if the length of stay (LOS) of dogs at Bideawee changed following the removal of breed labels from adoption cards. Bideawee dog adoption data from 16-month time periods before and after breed labels were removed was compared.

Main Findings: The average LOS of a dog at Bideawee decreased 8.3 days (-23.8%) once breed labels were removed (*Mdn* = 19.0) compared to when breed labels were in place (*Mdn* = 30.3). A Mann Whitney test indicated that this difference was statistically significant $U(N_{\text{no breed labels}} = 1259, N_{\text{breed labels}} = 987) = 386309.5, z = -15.41, p < .001$. Dogs with a “green” behavior assessments were almost four and a half times more likely to be adopted faster than those with “red” assessments (HR: 4.495, 95% CI 2.755-7.335, $p < .001$) before breed labels was removed, but only two times as likely to be adopted faster afterwards (HR: 2.220, 95% CI 1.514-3.254, $p < .001$). The return rate stayed constant across the two time periods at 6%.

Principle Conclusions and Implications: The findings from this study suggest that breed labelling can extend the LOS of a dog at a shelter. Shelters that have not removed breed labels from their kennel cards should consider doing so in the future. This study provides new insight on dog adoptions and factors impacting LOS in the Greater NYC area and helps evaluate the recommendations on the use of breed labels in shelters.

80 The effects of different genres of music on the stress levels of kennelled dogs

Professor Neil Evans¹, Mrs Gilly Mendes Ferreira², Ms Amy Bowman¹, Dr Fiona Dowell¹

¹University of Glasgow, Glasgow, United Kingdom

²Scottish SPCA, Dunfermline, United Kingdom

Introduction: Classical music has been shown to reduce stress in kennelled dogs; however, rapid habituation of dogs to this form of auditory enrichment has also been demonstrated.

Methodology: The current study investigated the physiological and behavioural response of kennelled dogs (n=38) to medium-term (5 days) auditory enrichment with five different genres of music including Soft Rock, Motown, Pop, Reggae and Classical, to determine whether increasing the variety of auditory stimulation reduces the level of habituation to auditory enrichment.

Main results: Dogs were found to spend significantly more time lying and significantly less time standing when music was played, regardless of genre. There was no observable effect of music on barking, however, dogs were significantly ($z = 2.2$, $P < 0.05$) more likely to bark following cessation of auditory enrichment. Heart Rate Variability (HRV) was significantly higher, indicative of decreased stress, when dogs were played Soft Rock and Reggae, with a lesser effect observed when Motown, Pop and Classical genres were played. Relative to the silent period prior to auditory enrichment, urinary cortisol: creatinine (UCCR) values were significantly higher during Soft Rock ($t = 2.781$, $P < 0.01$) and the second silent control period following auditory enrichment ($t = 2.46$, $P < 0.05$). Despite the mixed response to different genres, the physiological and behavioural changes observed remained constant over the 5d of enrichment suggesting that the effect of habituation may be reduced by increasing the variety of auditory enrichment provided.

Principle conclusions: The Scottish SPCA rescues and rehabilitates around 1,800 dogs every year. As a result of this collaborative research music is played in all of the Scottish SPCA's animal rescue and rehoming centres to help alleviate dogs stress, help them find their forever home and through production of an album *Paws, Play, Relax* help dogs relax in an home environment too.

84 Neutering decisions of owners of 12-month old dogs in the Generation Pup cohort study

Rosa E. P. Da Costa¹, Dr Rachel Casey¹, Joshua L. Woodward¹, Rachel Kinsman¹, Sara Owczarczak-Garstecka¹, Michelle S. Lord², Séverine Tasker^{3,4}, Prof Toby Knowles³, Dr Jane Murray¹

¹Dogs Trust, London, United Kingdom. ²Co-Evolve, Bristol, United Kingdom. ³Bristol Veterinary School, Bristol, United Kingdom. ⁴Linnaeus Group, Shirley, United Kingdom

Introduction. UK veterinary associations advise that dogs should be neutered. However, limited research supports an optimal age for neutering, which is decided by owners with veterinary guidance. This study investigated owners' reasons for neutering their dog prior to 9-months (<9-months) and between 9- and 12-months of age (9-12-months).

Methodology. Dog owners participating in an ongoing longitudinal study completed a questionnaire when their dog was approximately 12-months old. Owners of neutered dogs were asked to select ≥ 1 reason for neutering from a pre-defined list, plus a free-text option. Neutering reasons were tested for association with reported neutering age category (<9-months/9-12-months) using Chi-squared and Fishers Exact tests. Significance was set at $P < 0.006$ following Bonferroni correction for multiple testing.

Main Results. At approximately 12-months old, 42.5% dogs (326/767) were reportedly neutered, 63.8% ($n=208$) when aged <9-months and 36.2% ($n=118$) when aged 9-12-months. The most common reasons given for neutering were to prevent puppies ($P > 0.006$ (<9-months) 79.3% (165/208); (9-12-months) 73.7% (87/118)) and to reduce the risk of future health problems ($P > 0.006$ (<9-months) 55.3% (115/208); (9-12-months) 60.2% (71/118)).

Owners of dogs neutered between 9-12-months were significantly more likely to report neutering because their dog had started showing sexual behaviours ($P=0.002$; (<9-months) 11.5% (24/208); (9-12-months) 24.6% (29/118)) or aggressive behaviours ($P < 0.001$; 1% (2/208); 9.3% (11/118)). No significant association ($P > 0.006$) was found between reported neuter age and neutering because their veterinarian recommended it (<9-months 38% (79/208); 9-12-months 23.7% (28/118)) or wanting to prevent aggressive behaviour (<9-months 13% (27/208); 9-12-months 22.9% (27/118)).

Principal Conclusions and Implications for Field. Wishing to prevent puppies and health problems were common reasons for neutering. Further research is needed to determine how neutering age influences future health and behaviours of dogs to optimise advice regarding neutering for dog owners.

155 Dog training cultures and perceptions of welfare

Dr Nickie Charles¹, Dr Rebekah Fox¹, Dr Mara Miele², Dr Harriet Smith²

¹University of Warwick, Coventry, United Kingdom

²Cardiff University, Cardiff, United Kingdom

Introduction: Dog-training cultures are often characterised in terms of their reliance on correction or reward-based methods with different training methods affecting the well-being of both dogs and their humans in different ways. Here we explore how dog and human well-being are understood in two contrasting dog-training cultures.

Methodology: The research is based on multi-species ethnographic studies of five different dog training cultures including police dogs and companion dogs. Each ethnographic study consists of observation of training events, interviews with trainers and handlers, still photographs and video recordings of each training event.

Main Results: Dog training cultures recognise that the relationship between dog and handler is emotionally significant and that this has implications for the wellbeing of both canine and human participants. The language used to talk about welfare, however, differs. In police dog training, attention is paid to the ‘bond’ between dog and handler, how it is shaped through training, and how this contributes to the welfare of both dog and handler. In companion dog training, welfare is related to a dog’s ability to fit into family life and to conform to social regulations about appropriate canine behaviour. Owners have a responsibility to train their dog in such a way that the welfare of the dog and the general public is protected and, within those parameters, dogs become family members and contribute to the emotional well-being of their owners.

Conclusions and implications for field: Our findings show that understandings of welfare vary and are shaped by training cultures, the dog-human relationships that these cultures assume and create, and the necessity for dogs to fit into a companion or working relationship.

17 In or Out? Social discourses surrounding with free-roaming cats in urban communities

Kristine Hill

Exeter University, Exeter, United Kingdom

Introduction: First welcomed as pest-controllers, cats subsequently endeared themselves as the notoriously independent ‘pets’ that roam neighbourhoods worldwide. However, times are changing. In Australia feral populations are threatening native ecosystems, and elsewhere predation is a growing concern. The relatively recent phenomenon of the ‘indoor-only cat’ is a response to various dangers, especially traffic-related, and concerns about wildlife. However, many cats are unowned, even if fed by local residents.

Methodology: A qualitative approach is taken to explore social discourses associated with free-roaming cats in urban communities. Thematic discourse analysis of media sources, associated comments and exchanges, and survey responses, is used to identify key themes within online discussions. These are investigated further in local focus groups.

Main Findings: Five themes emerged that centre around the concepts of agency and control:

Cats are free agents. ‘Imprisonment’ is unethical, and efforts should be focused on minimising risks and curtailing predation.

Protect your pets. Efforts should be focused on indoor enrichment and providing supervised outdoor-time.

Ask the cat. Cats are individuals, and their unique circumstances and choices should be respected.

Conservation perspectives. Native wildlife supersedes the rights of cats to roam, and efforts must be enacted to reduce feral populations.

Be responsible pet owners! Roaming cats are nuisances that trespass and defecate on neighbours’ properties.

Conclusions and Implications: Decisions related to welfare, conservation, and restriction of pets’ freedom largely depend on the country, area (wildlife sanctuary, city), local environment (roads, apartment complex), and the individual cat (history, temperament). Although these factors are considered, associated discourses mirror broader social discourses of control and agency, particularly in relation to property, ‘parenting’, policing, and conservationism. With a deeper understanding of various perspectives, experiences, and issues, efforts can be tailored towards education and ethical solutions that benefit cats, humans, and the environment.

Presentation type Poster

36 The impact of TTVARM on the free-roaming cat demography in the tourist area in Japan

Professor Hajime Tanida¹, Assistant Professor Aira Seo¹, Veterinarian Yoshihide Ueda², Associate Professor Yuki Koba³

¹Graduate School of Integrated Sciences for Life, Hiroshima University, Higashi-Hiroshima, Japan. ²Hiroshima Prefectural Animal Management and Welfare Center, Mihara, Japan.

³Faculty of Education & Human Sciences, Teikyo University of Science, Tokyo, Japan

Introduction. Use of the trap-test-vaccinate-alter-return-monitor (TTVARM) program is recommended to control the number of free-roaming cats. However, the impact of TTVARM on the cat demography is controversial. The objective of our study was to examine the effect of TTVARM on the number of free-roaming cats in the tourist area of Onomichi city.

Methodology. Thirty cats among 39 free-roaming cats living in the tourist area were trapped, tested, vaccinated, altered, and returned in February 2019. Route censuses were conducted 3 to 4 times a month for 1 year. In addition to route censuses, 12 trail cameras were placed in the center of the tourist area to record the cats. A GPS tracking collar was put on 5 cats to monitor their home ranges.

Main Results. Average estimated age, body weight, and TTVARM body condition score of the cats were 3.07-year-old, 3.48 kg, and 3.25, respectively. *Corynebacterium ulcerans* was not isolated from the cats, but *Capnocytophaga canimorsus* were found in all the cats. Morbidity of FIV was 16.7%. GPS tracking showed that 5 cats stayed mainly in the tourist area, but their home range area was significantly different (Kruskal-Wallis Chi squared=12.57, df=4, P=0.0136). Route censuses and trail cameras showed that 17 have settled in the tourist area and 13 disappeared in a year. The missing cats probably died or migrated to other areas of the town. Some new cats came in from other areas and disappeared. One year later, the number of cats in the area has decreased from 39 to 30.

Principal Conclusions and Implications for Field. These findings suggest that TTVARM has the effect of controlling population growth. However, the movement of the cats between different areas should be restrained to control the cat population in the whole town.

66 To Cut A Long Tail Short: Owner Reported Tail Docking in a Cohort of English Puppies

Rachel Kinsman¹, Dr Rachel Casey¹, Prof Toby Knowles², Prof Séverine Tasker^{2,3}, Joshua L. Woodward¹, Rosa E. P. Da Costa¹, Sara Owczarczak-Garstecka¹, Dr Jane Murray¹

¹Dogs Trust, London, United Kingdom. ²Bristol Veterinary School, Bristol, United Kingdom. ³Linnaeus Group, Shirley, United Kingdom

Introduction: Canine tail docking is strictly regulated in England. Exemptions to the ban exist for breeds used in law enforcement, armed forces, emergency rescue, lawful pest control and lawful shooting of animals. Veterinary surgeons can dock puppies aged ≤ 5 days old on request by breeder/owner, provided sufficient evidence is available that puppies have been bred to work. This study reports the prevalence of tail docking and the desire of owners for puppies with docked tails within an ongoing UK canine cohort study.

Methodology: Data from an online survey including questions on tail docking were explored using descriptive statistics. The survey was completed by 2,922 participants who owned a puppy aged ≤ 16 weeks and living in England.

Main Findings: Within the cohort, 5.5% (n=160) of puppies were reported to have a docked tail; 19 were described as docked “very short”, and 141 as docked “with a third to half a tail left”. Of puppies with docked tails, 36.9% (n=59) of owners wanted a puppy with a docked tail, 35.0% (n=56) did not, and 28.1% (n=45) did not know/did not mind.

Of puppies with docked tails, 67.5% (n=108) of owners did not report any intention to work their puppy. Of the 32.5% (n=52) of puppies whose owners intended to train them to work, all were intended to be gun dogs, and 19.2% (10/52) of owners didn’t want a puppy with a docked tail.

Principle Conclusions and Implications: Encouraging better communication between breeders and potential owners could reduce unnecessary tail docking. Education to address ambivalence towards tail docking could help to increase the demand for puppies without docked tails. Future research within this longitudinal study will examine the influence of tail docking on various health/behaviour outcomes.

91 Disobedient or mischievous? Qualitative analysis of dog owners’ attributions of dog behaviours in the Generation Pup longitudinal study.

Sara Owczarczak-Garstecka¹, Dr Rachel Casey^{1,2}, Rachel Kinsman¹, Prof Toby Knowles³, Professor Séverine Tasker^{3,4}, Joshua L. Woodward¹, Rosa E. P. Da Costa¹, Dr Jane Murray¹

¹Dogs Trust, London, United Kingdom. ²Royal Veterinary College, Hatfield, United Kingdom

³School of Veterinary Science, University of Bristol, Bristol, United Kingdom

⁴Linnaeus Group, Shirley, United Kingdom

INTRODUCTION: Perceptions of dog behaviours influence practices related to these behaviours. This study aimed to explore behaviours dog owners perceive as desirable and identify how potentially problematic behaviours (with respect to dogs' health or welfare) were perceived.

METHODOLOGY: Owners' answers to the open-ended questions about the best, the funniest and the most annoying thing about their dog, asked in the Generation Pup longitudinal study when dogs were 2 years old, were analysed qualitatively. Codes summarising behaviours described by owners were assigned. Codes were then compared between questions and differences in attributions linked with owners' characteristics (age, gender, history of dog ownership and professional work with dogs) were explored.

MAIN FINDINGS: Two hundred and ninety-seven dog owners (90.2% women; mode age category 45-54 (31.1%)) answered the questions. No difference in attributions with respect to owners' characteristics was observed, potentially due to homogeneity of study participants.

Most behaviours were present in responses to all three questions. Mischievousness (defined by owners as dog being disobedient, vocal, boisterous and playful) was listed as the best/ funniest but also the most annoying thing about the dog, when expressed in a different context. Dogs seeking attention and vocalising were described as funny, but persistent attention-seeking and excessive vocalisations were classed as annoying. Several plausibly problematic behaviours, including vocalisations indicative of breathing difficulties, tail chasing and aggression towards other dogs, were listed as both funny and annoying. A few behaviours (e.g. eating or rolling in faeces) were categorised exclusively as annoying.

PRINCIPAL CONCLUSIONS AND IMPLICATIONS: This study suggests that funny behaviours can be perceived as annoying when believed to be taken too far, expressed too often or at the wrong time. Several potentially problematic behaviours were seen as funny, highlighting a need for educating dog owners.

130 Recent increase in new type of free ranging dogs in Japan-their survival strategy

Prof. Miki Kakinuma¹, Dr Katsuya Furukawa², Ms. Mayu Matsushima³, Ms. Karin Suzuki³, Dr Izuru Nose³

¹Nippon Veterinary and Science U., Tokyo, Japan. ²Yamaguchi Prefecture Animal Protection Center, Yamaguchi, Japan. ³Nippon Veterinary and Science U., Tokyo, Japan

Introduction: Japan's rabies prevention law kept it rabies free for over 60 years. The law prohibits village dogs such as those found in south east Asian countries. However, for the past decade, Yamaguchi prefecture is experiencing an increase of free-ranging dogs (FRD) habituating the public parks with volunteers feeding them. In

this study, their body features are analyzed and also SNS comments to discover the reasons for the increase of FRD in the area.

Method: Study 1: Data provided by Japan's Ministry of Environment on dogs registered, taken into custom, and reclaimed by the owner are used to determine the areas with the highest concentration of unclaimed dogs. Then lists of unclaimed dogs were analyzed for their body features and also estimating their seasonal reproduction.

Study 2: Shunan city, Yamaguchi prefecture, which was locally known for a group of close to 100 FRDs in a public park (constructed in 1986 with an area of 80ha) became famous due to media coverages in 2019. SNS comments about FRD in Yamaguchi were analyzed.

Main Findings: Study 1: Ministry of Environment data indicate a large number of dogs unclaimed by owners in the Yamaguchi prefecture. A total of 1122 dogs were categorized as FRDs in 2018. Body features of adult FRD (n=277) showed no short muzzle, short legs or curly coat. Puppies (n=845) were captured usually with siblings year around with no seasonal peaks.

Study 2: Of 2236 tweets about FRDs, they were divided into half concerning the pros and cons about feeding, but very few were for euthanasia. The dogs were said to be non-aggressive.

Principle Conclusion: FRD in Yamaguchi prefecture emerged in the last decade rather out of the blue. Their body features are similar to traditional FRDs and the dogs are doing well with the locals. A Similar type of FRD may be increasing in industrial countries with the rise of animal protection sentiments.

147 Fur Babies: Ought Veterinary Surgeons Be Paediatricians or Mechanics?

Dr Karen Hiestand

University of Sussex, Brighton, United Kingdom

Introduction: This ethical argument considers Rollin's fundamental question of whether veterinarians ought to give primacy of duty to animal patients or human clients. In the human medical model, doctors and courts decide what treatments are in a child's best interests, rather than parents. In the non-human medical field, owners, not veterinarians hold the right to act as an animals decision-making proxy by virtue of property law.

Methodology: This question is considered from the aspect of decision-making in companion animal health care using an example of delayed euthanasia of a terminal patient. This work discusses the differences between owners and veterinarians as proxy decision-makers and finally argues that a paradigm comparable to the companion animal veterinary sector is that of the human medical concept of 'incompetent' patients where the standard of best interests is applied.

Main findings: A change in the social ethic toward animals and consequent altering of societies expectation of the veterinary sector contribute to conditions in which veterinarians may be able to work under a paediatrician model in the future, possibly acting as the patient's surrogate decision-maker under a best interest's paradigm. Animals as property creates a significant legal barrier between veterinarians acting in a paediatrician capacity. This barrier also allows a shadow to fall over a range of welfare compromise before other considerations such as animal welfare legislation and professional codes can easily be invoked. Animal experience of suffering is often accepted as 'necessary' against the ballast of human experience of loss and grief.

Principle conclusions: As animals cannot exercise their own autonomy, decisions about their care are necessarily made by a proxy. This paper makes the moral argument the appropriate proxy is the health care professional under a paediatric model of 'best interests' rather than an owner under property law.

163 Like A Lamb To The Slaughter: Assessing Opportunities For Livestock Worrying By Dogs

Dr Caroline Spence

Writtle University College, Writtle, United Kingdom

Introduction: Dogs attacking livestock is a widespread problem with serious consequences for farmers, owners, and the dogs themselves. Despite economic data indicating that the severity and frequency of attacks is increasing, there is little research dedicated to the issue. Anecdotal evidence suggests instances of worrying depend on three behavioural antecedents, i) owners exercising dogs off-lead, ii) owners failing to contain dogs securely, and iii) owners allowing dogs to roam freely, all of which likely require differing policy interventions to effect change. We investigated these behaviours in dog owners to assess the prevalence of opportunities for livestock worrying by dogs.

Methodology: An online survey (n=1494) was conducted to assess beliefs relating to livestock worrying and responsible dog ownership. Participants who owned a dog provided further information on dog walking habits, their dog's behaviour and dog care practices.

Main Results: Of the 50% of participants exercising their dogs on farmland/in national parks, 13% reported never using a lead when walking their dog, with those from urban areas least likely to let a dog off-lead on farmland. Approximately 1-2% of participants reported their dog as 'free-roaming'. Although 68% of participants stated that their dog had never escaped, 4% reported that their dog had escaped on more than five occasions, with 31% of these individuals living in rural areas. Belief in the inevitability of dogs escaping was significantly correlated with the reported frequency of dog escapes ($r_s(1002) = .418, p < .0005$).

Principal Conclusions: This work provides the first assessment of owner behaviours and beliefs conducive to livestock worrying. Given an estimated UK dog population of 9 million, the significant numbers of dogs reported as escaping, free-roaming, or exercised off-lead on farmland, suggests that policy interventions aimed at targeting owner behaviour rather than improving recall training in dogs should be our starting-point.

178 Stress Behavior and Physiological Effects of Participation in Trauma Focused - Cognitive Behavioral Therapy (TF-CBT) on Service-Trained Dogs

Dr Nancy Dreschel¹, Dr Brian Allen², Dr Chad Shenk³, Dr Ming Wang², Ashley Butcher²

¹Penn State University College of Agricultural Sciences, University Park, PA, USA.

²Penn State University College of Medicine, Hershey, PA, USA.

³Penn State University College of Health and Human Development, University Park, PA, USA

Introduction. While animals are increasingly used in therapeutic counseling, little research is conducted on their welfare during these sessions. As part of a larger study examining the effects of canine presence during TF-CBT therapy, measures of stress in participating dogs were examined.

Methodology. Fourteen children participated in 12 weekly TF-CBT therapy sessions with one of five service-trained dogs. Therapists allowed dogs and children to interact but did not purposefully involve the dogs in sessions. Canine saliva for cortisol analysis was collected before, immediately after, and 20 minutes post-interaction at sessions 1, 6 and 12, and at home on control days. Handlers in another room recorded signs of canine stress using an assessment of dog well-being (ADWB) and recorded sessions were coded for dog behavior.

Main Results. Analysis showed non-significant intra- and inter-individual differences in cortisol and behavior for each dog, particularly at the 6th session. Overall, there were no significant differences in the ADWB (Mean= 0.97, SD= 0.69) between dogs, or in salivary cortisol levels between dogs or between control (Mean= 0.35 µg/dl, S.D. = 0.35) and clinic days (Mean= 0.37µg/dl, S.D. = 0.34). While dogs showed mild stress behaviors during the therapy sessions (lip licking, “shaking off”, yawning, sniffing, and panting), these were infrequent (an average of 5 incidents per dog during twelve minutes of coding throughout the hour). Otherwise, the dogs directly engaged with the patients with relaxed body movements, or rested quietly nearby.

Principal Conclusions and Implications for Field. The findings suggest that participating in therapy sessions did not have adverse welfare effects on these dogs. The dogs engaged freely with patients or rested quietly while therapy sessions were in progress. It is hoped that further analysis may allow the development of a profile of a dog more suited for this work than others.

187 Benchmarking of online ads for dogs in Australia

Ms Ana Costa-Goncalves, Dr Eleonora Del Grande, Dr Torben Nielsen, Dr Jono Tuke, Dr Susan Hazel

University of Adelaide, Adelaide, Australia

Introduction. Advertisements (ads) for dogs are a barometer of breed popularity and compliance with regulations relating to dog breeding and sale. In Australia, many ads for dogs are online. The aim of the current study was to evaluate compliance with microchipping regulations, and the most popular breeds and their economic value, in ads from the most popular Australian website for sale of dogs, Gumtree.

Methodology. Data was obtained from Gumtree (March 25 & April 8, 2019) using rvest package in R. Chi-squared tests and multivariable logistic regression modelling was used to identify compliance levels for microchipping in each State/Territory with $p < 0.05$ considered significant. The study was approved by the Human Ethics Committee of the University of Adelaide.

Main Results. A total of 1,735 ads were included representing 3,836 dogs and puppies. Most ads were from New South Wales (NSW 33.1%) and Queensland (Qld 28.6%). The American Staffordshire Terrier was the most common breed overall (7.5% of the ads) but the French Bulldog was the most common breed in NSW, Qld and Victoria. The price of designer breeds (e.g. Labradoodle) was higher than for purebred or crossbred dogs (Medians of \$2200, \$1100 and \$395, respectively). Dogs advertised in Victoria were more likely to be microchipped than for any other State/Territory ($p < 0.005$) with owners 26% less likely to sell a microchipped dog compared to breeders.

Principal Conclusions and Implications for Field. Regulations for breeding and selling puppies are more stringent in Victoria, which may be why this State has the highest rates of microchipping across Australia. With changes in State/Territory regulations relating to breeding and selling dogs, the data will help assess any impact of changes in regulation. The analysis may also be used to assess future trends in demand for specific dog breeds, including designer and brachycephalic breeds.

191 Management of separation anxiety in dogs varies according to the training style of dog trainers

Dr Trepheena Hunter¹, Dr Diane van Rooy², Associate Professor Michelle MacArthur³, Dr Sara Bennett⁴, Dr Susan Hazel³

¹Wild Things Veterinary Behaviour Service, Melbourne, Australia.

²Dog & Cat Behaviour Consultations, Melbourne, Australia.

³University of Adelaide, Adelaide, Australia. ⁴North Carolina State University, Raleigh, USA

Introduction. Separation anxiety is a common problem in dogs. Many dog owners seek dog trainers rather than a veterinarian for help. Trainers vary in the teaching styles they use to change behaviour. Reward-based trainers use positive reinforcement while

balanced trainers use positive and negative reinforcement and punishment. The aim of this study was to determine if attitudes of dog trainers to separation anxiety in dogs varied according to trainer style.

Methodology. An online survey was developed with questions on demographic factors, and attitudes to treatment and management of separation anxiety in dogs. Fishers exact tests and Mann-Whitney tests assessed differences between training style with $p < 0.05$ significant.

Main Results. A total of 63/141 complete responses were received from dog trainers: 41 reward-based, 22 balanced. Most trainers did not refer dogs to a veterinarian for diagnosis (5/41 reward-based and 0/22 balanced). More reward-based than balanced trainers would refer to a veterinarian for treatment when required (73% versus 36% respectively, $p = 0.005$). Reward-based trainers believed owners' view of mental health, level of social support, dog's access to inside the house, assistance from a veterinarian and owners willingness to try medication more important in management of separation anxiety than balanced trainers (all $p < 0.05$). Almost all (2/41) reward-based trainers believed medication was usually necessary versus half (50%) of balanced trainers ($p < 0.001$). Fewer reward-based than balanced trainers believed separation anxiety is preventable (53% vs 96% respectively, $p < 0.001$).

Principal Conclusions and Implications for Field. Dog trainers varied in attitudes to management of separation anxiety in dogs, including referring to a veterinarian for medication. Since medication is often necessary in severe cases of separation anxiety, these differences may impact welfare of dogs with this condition.

196 Inhibition and Working Memory in 7.5 week old Guide Dog Puppies

Maike Foraita, Dr Tiffani Howell, Prof. Pauleen Bennett

School of Psychology and Public Health, La Trobe University, Melbourne, Australia

Introduction: Self-regulation of behaviour using Executive Functions (EF) may be important for working dog success. Inhibition and Working Memory (WM) are two core EF skills. Currently we do not know if EF can be assessed in young puppies, before being placed with puppy raisers. High failure rates are a huge welfare problem in working dog industries, so assessing EF early to identify possible shortcomings, and introducing targeted interventions to enhance EF skills, may be beneficial.

Methodology: We tested 45 7.5-week-old puppies from a guide dog breeding and training facility on an A-not-B task, in which one of two cups was baited with food. Puppies were permitted to approach the cup to get the food, before the other cup was baited for 5 trials. Some of these puppies (24) also completed a delayed response task in which one of two cups was baited. The puppy's view was then blocked for a 1sec or 7sec delay before the puppy could choose a cup. For both tasks, choosing the baited cup was the 'correct' choice.

Main results/findings: In the delayed response task puppies performed above chance in the 1sec (222 trials, 67% correct choice, $t=5.58$, $p < .001$), and 7sec (187 trials, 59% correct choice, $t=2.75$, $p=.003$) condition. Individual performance ranged from 33% to 92% correct choices. There was considerable variation in the A-not-B task, with some puppies never, and some always, inhibiting approaching the previously rewarded location (225 trials, 4-5 correct= 19 puppies; 3-2 correct= 18 puppies; 1-0 correct= 8 puppies).

Principle conclusions and implications: Young puppies can be tested for core EF skills. Furthermore, puppies vary in their Inhibition and WM at a young age. It may be possible to design interventions aiming to improve EF in low-performing puppies, to increase working dog success later in life.

201 Gender differences in the perception of zoo canid welfare by zookeepers

Mr Giacomo Riggio^{1,2}, Dr Federica Pirrone³, Elia Lunghini⁴, Prof Angelo Gazzano¹, Dr Chiara Mariti¹

¹Dep. Veterinary sciences, University of Pisa, Pisa, Italy. ²Vethos, Rome, Italy

³Dep. Veterinary Medicine, University of Milan, Milan, Italy. ⁴A.I.G.ZOO, Pistoia, Italy

Introduction. Good animal welfare has become a primary goal for modern zoo facilities. Zookeepers seem to be a reliable instrument to assess the level of welfare of the animals under their care. This study aimed to investigate the effect of demographic and background factors on zookeepers perception of animal welfare.

Methodology. Data were collected through an online questionnaire comprising two sections. The first investigated respondents' demographic and background information. The second section was composed of three subscales containing 1 to 5 Likert-type questions aimed to assess: the respondents' perception of the importance and the fulfillment of each of the Brambell's Five Freedoms for canids kept in zoos; the perception of animal welfare level in their zoo. The questionnaire was completed by 116 zookeepers, 31.86 ± 0.714 years old, mainly women (72.4%), from 16 Countries. Ordinal logistic regression was implemented to assess possible associations between subscales scores and 13 zookeepers' demographic factors, including age, gender, years of work as zookeeper, education level, attendance of animal welfare courses, canid species they take care of and dog ownership.

Main Results. Among all the factors investigated, only gender resulted as a significant predictor of zookeepers' scoring tendency. Female zookeepers had 1.6 greater odds to perceive the Brambell's Five Freedoms as highly important (Wald $\chi^2=6.895$, $p<0.01$) and 1.4 greater odds to perceive them as highly guaranteed (Wald $\chi^2=7.247$, $p<0.01$). No significant gender difference was found for the subscale related to the level of animal welfare in the zoo where they worked nor for the strength of the bond with the canids under their care.

Principal Conclusions and Implications for Field. As expected, gender affects zookeepers' perception of zoo canid welfare. However, our results suggest that the gender does not influence zookeepers' perception of welfare when related to animals under their care.

204 Monitoring and evaluation of dog management programs across India

Ms Tamara Kartal, Dr Amit Chaudhari

Humane Society Internatinoal, Washington DC, USA

Introduction: The number of street dogs in India is estimated to be around 30 to 40 million. Since 2001, legislation has outlawed culling in favour of sterilization programs to manage street dogs in India. The Animal Birth Control (ABC) approach involving the method of sterilizing and returning street dogs to their environments is favored in India. Programs across the country are of different scale and implemented by different organizations following different protocols and approaches, however mostly in cooperation with the local authorities.

Methodology: Dog populations are assessed before and bi-annually during the ABC implementation. We conduct street dog surveys along transect routes (Hiby & Hiby, 2018) before and during the breeding season, household surveys and collect secondary resource data (e.g. dog bite data and rabies case data if available) to monitor and evaluate the impact of the interventions.

Main Findings: Within 24 months of high-volume ABC in Dehradun we saw a dog density reduction of 31.7% (November 2019). Similarly, Ahmedabad, in the state of Gujarat, which has been implementing high-volume ABC for over a decade saw a dog density decline of 52.4%, which translates to 4.3 dogs per 100 people in 2010 to 2.0 dogs per 100 people in 2019. Other programs in cities like e.g. Vadodara in Gujarat have also reached sterilization proportions of over 70% and are maintaining a stable street dog population now, while focusing on changing human behaviour around street dogs and a positive community development.

Principle Conclusions and Implications: High volume sterilization programs have shown a reduction in dog density in as little as 2 years and a reduction of rabies cases in humans to zero in as little as a few years. A reduction in dog bites as a public health risk, however, has been impacted with mixed results by ABC programs.

Plenary - 1:00 - 1:50pm Saturday 5th September

Plenary: [Prof Abigail Woods](#) "Intersections in histories of human and animal health". Sponsored by Humanimal Trust

Animals in History - 2:00 - 2:40pm Saturday, 5th September

Presentation type Oral live

99 "Poor Dolly ... she also was suffering from shell-shock." The shared impact of warfare on soldiers and their horses in The Great War.

Dr Jane Flynn

Independent Researcher, Belper, Derbyshire, United Kingdom. The University of Derby, Derby, United Kingdom

Introduction: *"Poor Dolly! I had no idea that she was suffering from shell shock. But she's really not as bad as her old master. The fact of the matter is, she evidently remembers it as keenly as I do."*

In 1918, an article in *The New York Times* reported on the shared war experiences of horse and man. It described how horses, like soldiers, felt an understandable reluctance to return to a place where they had been 'frightened or injured'. It argued that horses, like men, were also subject to 'shell-shock'. Many soldiers, not only recognised this shared suffering, but found they were better able to express their own physical and mental strain through the relationships formed with their horses.

Methodology: This paper focuses on primary source material of the period, and specifically the first-hand accounts of soldiers written during, and in response to, their experiences of working with horses and mules in The Great War. These will be considered alongside contemporary thinking about 'shell-shock'. It will explore how soldiers expressed themselves through their horses, and why the horses were often later remembered as the cause of their physical and mental survival.

Main Findings: Soldiers lived and worked alongside their horses for months and often years. They daily encountered dangerous and stressful situations, and likewise a gradual 'wearing down' of their ability to cope with these pressures both physically and mentally. The soldier-horse relationship enables us to further explore the demands made of horses in both modern and historical contexts.

Principle Conclusions and Implications: This historical context allows us to further consider spaces shared by humans and horses past and present. It encourages thinking, for example, about the role of horses in equine assisted therapies; the most pertinent perhaps being in the rehabilitation of military veterans today.

19 “Civil Rats”: Animals, Race, and the U.S. Rat Extermination Act of 1967

Thomas Aiello

University of Exeter, Exeter, United Kingdom. Valdosta State University, Valdosta, USA

INTRODUCTION: In 1967, Lyndon Johnson proposed the Rat Extermination Act, providing federal funds to exterminate millions of rats in American inner cities. Before the House vote, however, the Newark uprising by inner city black residents scared white legislators. Led by southerners, the House derided the bill as one for “civil rats.” Legislators equated the bill, which would affect predominantly black homes, with the Black Power movement and violence like that in Newark and refused to pass it. Meanwhile, black activists used dead rats as symbols of the crumbling infrastructure of their neighborhoods. It was a debate about human wellbeing in which both sides used the death of rats to marshal their arguments.

METHODOLOGY: This history paper uses archival research done at the Lyndon Johnson Presidential Library, the National Archives, and the Rockefeller Archive Center, along with files from the Federal Bureau of Investigation and the Congressional Record, supplemented by a full panoply of secondary contextual material.

MAIN FINDINGS: This paper uses an anthrozoological reading of the language used to criticize the bill to describe the consequences for rats themselves, who occupied the same spaces as the human residents of urban housing, were scapegoated as disease-carrying monsters, and killed en masse for the crime of having semiotic resonance in human political discourse. It similarly reads the work of rights advocates, arguing that their use of dead rats to make their case also redounded negatively for rats.

PRINCIPAL CONCLUSIONS AND IMPLICATIONS: Historical interpretation of the Rat Extermination Act emphasizes urban housing reform, but it never sees rats as anything but signposts of decay. This account demonstrates how historical stories change when nonhuman actors are treated as legitimate subjects in historical actions and demonstrates how species and race interacted historically during the United States civil rights movement.

Animals and the law

Presentation type Oral pre-recorded

161 'Rescue is a minefield': Legally Constituting the Companion Animal Adoption Agreement.

Dr Sarah Singh, Professor Marie Fox

University of Liverpool, Liverpool, United Kingdom

Introduction: Animal rehoming organisations generally ask individuals with whom they place animals to sign an adoption agreement. Typically, such agreements state that any requested donation does not constitute payment for the animal but is a donation to further the work of the organisation. The legal status of such agreements is however unclear, leaving organisations open to claims under the Consumer Rights Act 2015 by those who adopt animals and are dissatisfied with them.

Methodology: This paper draws on a recent Small Claims Court ruling and results of a survey, on adoption agreements and compulsory donations, disseminated by the authors to organisations involved in rehoming in the UK. Respondents were able to indicate that they would be open to follow-up phone-calls which also inform this paper.

Findings: Analysis of this data shows that the majority of respondents have returned adoption donations at some point. However, these organisations perceive the adoption agreements differently, and thus the logic underpinning the return of donations is different. This demonstrates how animal adoption agreements occupy a contested, liminal position between contract, property, charity and family law. This reveals a growing schism between public attitudes towards companion animals and the law regulating their adoption/sale.

Conclusions: Construing the adoption of animals as a sale of goods has detrimental consequences for organisations who may be pressured to return vital donations and for animals deemed 'defective'. Furthermore, rescues have begun to internalise this language, causing cognitive dissonance within the rescue community.

Ultimately, construing animal adoption agreements as contracts for sale diminishes the relationship between humans and companion animals. Using sale of goods terminology to describe animals is ethically and legally wrong and has major implications for the charitable activities of those rescues and for animal welfare. As such a different conceptual framework for these agreements is clearly needed.

48 Uncovering the views of law enforcement personnel who participated in a canine assisted-intervention: A case study

Freya L. L. Green, Dr John-Tyler Binfet

University of British Columbia (Okanagan), Kelowna, Canada

Introduction: Despite the increasing popularity of canine-assisted interventions (CAIs) across a variety of contexts, and the demonstrated effect they have on stress reduction, there is a paucity of literature examining CAIs within the context of law enforcement. Incorporating a CAI within a law enforcement setting is a way to provide support to employees, and reduce their stress, as part of their routine work day (Binfet, Draper, & Green, in press). Understanding the perceptions of employees who participate in a work-situated CAI helps to understand the mechanisms of the CAI that best contribute to employee wellbeing.

Methodology: Eight Royal Canadian Mounted Police (RCMP) members (75% female, $M_{age} = 49.21$, $SD = 6.12$) from an urban detachment, were interviewed. Interviews focussed on topics including members' experiences of workplace stress, resources and sources of support, and their experiences of a CAI within their detachment. Interviews were transcribed and analysed using qualitative content analysis (Hsieh & Shannon, 2005).

Main Findings: Participants were overwhelmingly positive in their experiences of the program, and demonstrated support for having CAIs within the detachment setting. Findings demonstrate that participants found that the program served as a good break from work, relieved their stress, improved their mood, and helped them to change perspectives. Participants also identified the role of the dogs, which included their role as a social entity.

Principle Conclusions and Implications: Policing is an environment in which personnel experience elevated occupational stress (Ménard & Arter, 2013). As stress can impact LEP mental and physiological health, and influence their ability to serve the public, it is important to establish effective stress-reduction strategies within detachment settings. Findings from the current study contribute to better understanding of the lived experiences of stress within RCMP members, and of CAIs within an applied setting.

Presentation type Poster

42 Human Health, Animal Health and Animal Welfare in the EU: an unworkable relationship

Marine Lercier

Faculty of Law, Autonomous University of Barcelona, Bellaterra, Barcelona, Spain

Introduction: Animal health is a genuine concern from both a public health and food safety point of view, but also from the animal welfare perspective due to the emphasis on the animals themselves. Having conceded that animals are « sentient beings », the EU however goes on legally treating them as goods of production. The legal incoherencies in their treatment lead to the question of whether animals are subjects or objects of protection. How is animal health conceptualized and what protection is afforded to farm animals in relation to their welfare within the consolidated *Animal Health Law*? What are the consequences of public health and food safety policies on animal health protection and how are these issues balanced with the necessity to consider animal welfare in their implementation? This paper raises the question of the proportionality of the means used and their rationale in balancing human and animal interests in the context of threats to public health and as regards their impact on animal welfare.

Methodology and Findings: Thorough analysis of the Regulation ('Animal Health Law') reveals that, despite being a core determinant of animal welfare, this topic is not regulated to these ends at all. The EU addresses animal health solely for the purposes of public health and food safety, leaving completely aside the interdependencies between animal health, animal welfare, and human welfare.

Conclusion: Farm animals' welfare is not of paramount importance when reading the *Animal Health Law*, probably owing to the fact that animals are still traditionally considered as "things" in most European legal systems, and especially as "products" within European Union Law. A monitoring mechanism is moreover missing as regards the principle laid down in Article 13 of the *TFEU* to pay due consideration to animal welfare, which makes it technically impossible to sanction its compliance.

143 Social Farming and Animal Assisted Interventions: content analysis of the Italian legal framework towards a One Welfare approach

Dr Morgana Galardi^{1,2}, Dr Laura Contalbrigo¹, Dr Roberta Moruzzo², Dr Francesco Di Iacovo²

¹National Reference Center for Animal Assisted Interventions - Istituto Zooprofilattico Sperimentale delle Venezie, Padova, Italy.

²Department of Veterinary Science - University of Pisa, Pisa, Italy

Introduction: in the last decade, Animal Assisted Interventions (AAI) and Social Farming (SF) practices widely spread throughout Europe and at the same time, the scientific interest increased. In Italy, experiences are various and diversified among the 20 Italian Regions which have direct responsibility on these fields. In 2015 Italian authorities decided to regulate both AAI and SF topics at national level in different ways. The aim of this study was: analyse strengths and weaknesses of Italian legal framework about both fields, evaluate the possible impact on providers and the interaction of AAI in the SF frame. Such analysis can be useful to understand if and in which way the providers of AAI could play a relevant role in SF activities and to direct institutional decision-making process towards a One Welfare approach.

Methodology: we analysed the Italian legislation on AAI and SF at national and regional level (national laws, all regional laws and local implementing regulations), their connections, strengths and weaknesses. We critically pointed out and systematised differences to highlight inconsistencies and possible improvements.

Main Findings: our study suggested the need of practical guidelines for providers to overcome the misalignment that exists nowadays between AAI and SF in Italy. That is caused by the independent development of these fields until the regulation and the inconsistency between regional and national laws.

Principle Conclusions and Implications for Field: Italian legal framework on AAI and SF will increasingly influence providers in their activities and the outcomes on possible final beneficiaries. Meanwhile there is a lack of modelling especially in AAI field, which could be coped offering practical guidelines for providers and public institutions. Guidelines should be based on One Welfare framework and include: specific educational programs for providers, directions on organizational models and on promotion strategies of the service in the area.

149 From Collector to Captor: The Theoretical Crime of Animal Hoarding

Miss Corrina Lewis

University of Liverpool, Liverpool, United Kingdom

Introduction: As a highly dysfunctional form of the human-animal relationship, animal hoarding - the compulsive collecting of nonhuman animals - is often characterised as a mental illness rather than an act of animal cruelty. The numbers of animals in hoarders' homes can rise quickly, and as a result, these animals are subject to horrendous conditions, with many of them dying or suffering lifelong physical and mental trauma. The Animal Welfare Act 2006 (AWA), which was intended to protect animals from this kind of harm, considered a type of neglect, is frequently not enforced against animal hoarders, with the RSPCA instead choosing to appease the hoarder rather than prosecute.

Methodology: This paper utilises interdisciplinary research, drawing on academic literature from law and anthrozoology. The legal methodology is primarily doctrinal and comparative, exploring US laws and their effectiveness, in contrast to the UK's AWA. Integrating anthrozoological literature with legal doctrine offers insight into animal hoarding, how it affects both the humans and animals involved, and provides valuable context in order to understand this type of compulsive behaviour.

Main Findings and Conclusions: Animal hoarding is theoretically a crime under the AWA, but in practice, it is often not treated as one. Attempting to balance the rights of non-human animals with a DSM-V recognised mental health issue, this paper advocates for the utilisation of an interdisciplinary approach via mental health assistance and enforced legal sanctions in an effort to facilitate long-term change.

169 Knowledge of Irish dog-ownership legal requirements: Are dog owners different from non-dog owners?

Ms. Laura Keogh¹, Dr Alison Hanlon¹, Ms. Catherine Devitt², Dr Andrew Kelly³, Dr Locksley Messam¹

¹University College Dublin: School of Veterinary Medicine, Dublin, Ireland

²Independent Consultant, Glendalough, Wicklow, Ireland

³The Irish Society for the Prevention of Cruelty to Animals, Dublin, Ireland

Introduction: Canine-related legislation protects canine health and welfare and encourages safe human-canine interactions for both owners and non-owners. We aimed to estimate and compare the knowledge-level of dog owners and non dog-owners with regard to eight Irish dog-ownership legal requirements.

Methodology: We conducted a cross-sectional study of University College Dublin employees (2016). Data were collected via online questionnaire and included: Gender, ownership status and educational level. Participants answered questions regarding the existence of eight Irish legal requirements of dog ownership: Dog licensing, fouling,

abandonment, straying, wearing identification, breed-specific leashing/muzzling, tail docking and safeguarding health/welfare. Using Microsoft Excel 2019 we estimated the prevalence (P) of knowledge of each legal requirement, separately for owners, non-owners, males and females and used the Mann-Whitney procedure to estimate the probability that owners were aware of more laws than non-owners.

Main Findings: In total, 327 dog owners and 352 non-dog owners participated (95% with third-level education). Less than half of owners (P=43.7%; 95%CI: 43.6-43.9%) and non-owners (P=38.6%; 95%CI: 38.5-38.8%) knew of at least seven laws. More non-owners than owners knew of none (P=3.7%; 95%CI: 3.6-3.7% vs. P=0.91%; 95%CI: 0.91-0.92%), and slightly more non-owners knew of four laws or less (P=30.1%; 95%CI: 30.0-30.2% vs. P=23.8%; 95%CI: 23.7-24.0%). There was a 54% (95%CI: 49-58%) chance that an owner was aware of more laws than a non-owner. This was slightly lower among females (owners vs. non-owners) (52%; 95%CI: 47-58%) but higher among males (56%; 95%CI: 49-62%). Participants were most frequently unaware of laws regarding wearing identification, straying, tail docking, abandonment, and safeguarding health/welfare, in that order.

Principal Conclusions and Implications for Field: Little difference exists between owners' and non-owners' knowledge of Irish dog-ownership requirements and both groups show substantial gaps in awareness of most laws. Educational campaigns should target both groups equally.

Animals in Education Research Symposium - 3:40 - 5:00pm Saturday, 5th September

100 Symposium: Educational Anthrozoology in the classroom: Roles, risks and regulations

Dr Diahann Gallard¹, Dr Helen Lewis², Donna Carlyle³

¹Liverpool John Moores University, Liverpool, England, United Kingdom. ²Swansea University, Swansea, Wales, United Kingdom. ³University of Northumbria, Newcastle-upon-Tyne, England, United Kingdom

This symposium is about the contemporary context and future directions for animals in education. Romantic ideas about pupil-animal interactions in education perpetuate which have potential to invite poor practice and potential for risk and harm. In this symposium, we consider the ways children and animals in classrooms can relate, and how animals can enhance wellbeing, learning and development with the needs and 'voice' of the animal intact. There are three papers included in the symposium; the first is a presentation of the findings of a field study of an animal-assisted education intervention, the second is an ethnographic study of an animal-assisted pedagogical approach, and the final paper is a broader, critical review of literature, policy, legislation and practices in educational anthrozoology. The symposium objective is not to problematise educational anthrozoology but draw attention to the issues which exist beside the educational intentions.

Symposium papers:

Paper 1: Dogs in Early Years Classrooms: What is the impact on children's social behaviours and communication during playful learning opportunities?

Paper 2: What a Dog's Body Can Do: Rhythms of relating and kinetic melodies of children with a canine in the classroom affording a 'hands on' pedagogy.

Paper 3: Spotlight On The Romantic View Of Animals In Education: When should we say 'no' to animals in classrooms?

(The abstracts for each paper have been submitted for review separately)

The symposium will be of interest to researchers, practitioners and policymakers. It will facilitate a space for discussion and connection with others interested in animals in education, plus opportunities for collaboration and new research projects.

144 Symposium: Dog-assisted interventions with children in mainstream and special educational needs schools - what works?

Prof Kerstin Meints¹, Mrs Victoria Brelsford¹, MS Mirena Dimolareva², Prof Nancy Gee³

¹University of Lincoln, Lincoln, United Kingdom. ²Bishop Grosseteste University, Lincoln, United Kingdom. ³Virginia Commonwealth University, Richmond, Virginia, USA

Introduction: Can dogs play a role in improving children's learning and well-being? While animal-assisted interventions in schools increased in popularity in recent years, only limited systematic, longitudinal research exists assessing intervention effects. We will present results of a longitudinal randomised controlled trial project in mainstream schools and special educational needs (SEN) schools within a symposium comprising of 3 presentations discussing effects on cognition, language and stress, followed by a discussant.

Methodology: Children with and without SEN (overall N = 235) were assigned to dog, relaxation or no treatment control group conditions. They completed standardised measures of language and cognition before and after intervention, after 6 weeks, 6 months and 1 year. Interventions ran over 4 weeks, twice/week, for 20 minutes, individually or as group. Salivary cortisol was analysed, next to socio-emotional measures, sleep, family and pet information.

Dogs underwent additional behavioural assessment; all children, dog handlers and researchers received tailored safety training before the study started.

Main Findings: Typically developing children showed, next to learning effects, significant improvements in areas of language and cognition, e.g. spatial ability, executive functioning and sentence comprehension ($F(8, 204) = 2.091, p = .038, \eta_p^2 = .076$; $F(4, 244) = 2.408, p = .016, \eta_p^2 = .073$); $F(8, 344) = 2.602, p = .009, \eta_p^2 = .057$). Children with SEN also showed improvements in cognition and language areas.

Importantly, stress levels significantly increased in control and relaxation groups ($p = .013, d = .61$; $p = .025, d = .38$), but saw *no increase* over the school term in mainstream school children, with highly significant *decreases* in cortisol levels in children with SEN ($p = .003, d = 1.38$).

Principle Conclusions and Implications: These results show the impact of AAI and detail how children benefit from dog interventions. Effects vary for children in mainstream schools and SEN schools, however, all children show significantly lower stress levels following dog interventions.

Animals in education - 5:20 - 6:00pm

Saturday, 5th September

Presentation type Oral live

114 The status, purpose, and welfare of animals on college campuses

Dr Beth Lanning¹, Dr Megan Patterson², Ms. Sarah Henry¹, Ms. Taylor Graves Boswell²

¹Baylor University, Waco, USA. ²Texas A&M University, College Station, USA

Introduction. College students are increasingly choosing to bring their animals to college or acquire one while attending, yet little is known about current animal policy and procedures regarding the animals or the welfare of the animals. This study aimed to assess 1) current university policies regarding emotional support animals (ESA's), service animals, and pets on campus and in student housing, 2) status of animals on campus and in student-related housing, and 3) care of and relationship with the animal.

Methodology. The mixed-method design included interviews with students, administrators, and an online survey administered to college students attending two large universities in the southern part of the United States. The survey included questions related to student's social networks, animal welfare, living conditions, and pet attachment. A total of 1194 completed survey responses were included in the analysis. Interviews were conducted with dorm leaders, apartment managers, students with ESAs' or service animals, and administrators responsible for student accommodations. Data were analyzed using SPSS and R software.

Main results. Twenty-eight percent (349) of respondents reported having animals at college, 23 animals classified as ESA's, 21 classified as service animals. Most students reported strong attachment to their animals. Network analysis revealed having more animal owners in someone's friend network was associated with feeling more support within networks ($r = .10, p < .001$). Dogs (55%) and cats (17%) were the most prevalent animals. Most students (80%) reported vaccinating and treating for ticks/flees. Pet/animal policies and accommodations varied across housing units and between universities, especially for ESA's.

Principle conclusions and implications for field. Findings from this study suggest that animals are common on college campuses and provide emotional support for the students. Generally, students provide adequate care for the animals. University and housing policies vary and are especially vague for ESA's.

69 “What do we want?” “Therapy Dogs!” “When do we want them?” “Now!”: A survey of student motives to attend therapy dog events, and the appetite for future events on a North American University Campus.

Dr Cluny South, Mr Martin Mroz, Ms Sarah Saghah

Simon Fraser University, Vancouver, Canada

Introduction: Therapy animals are increasingly being used in universities with the hope of providing wellness support and reducing student anxiety. This research investigates the advantages of therapy dog events from a student perspective, and asks what an ideal provision should look like.

Methodology: A total of 326 pre-event, and 256 post-event surveys were administered to participants attending a short drop-in therapy dog event on a North American university campus. Quantitative analysis was conducted using SPSS software.

Main Results: The most frequently stated motivation for attending was attaining stress relief (51%). Participants who were motivated by stress relief were likely to want to attend events more frequently ($M=4.574$, $SD=0.813$), compared to others ($M=4.273$, $SD=1.033$), $t(227)=2.572$, $p=.011$. The most popular future provision was a drop-in, happening once a week, lasting 11-20 minutes, with a wait time of under 11 minutes. Participants who had visited a therapy dog event before were prepared to wait significantly longer ($M=1.948$, $SD=0.736$), than those who had not ($M=1.763$, $SD=0.053$), $t(236)=2.133$, $p=.034$.

Post-event satisfaction levels were high, with 80% reporting being very satisfied, and 86% reporting that they were very likely to recommend the event. Wait times were the prime cause of dissatisfaction. Consistently positive feelings were expressed (e.g. “the dogs made me happy”, “I feel de-stressed”), as well as a desire for more dogs and more events. Participants considered the event a quick fun way to relax and enhance mood, compared to meditation, counselling or mindfulness.

Principle Conclusions and Implications for Field: Findings suggest that short duration drop-in therapy dog events on university campuses are appealing to students seeking a quick, fun way to boost mood and relax from academic stressors. These events appear to appeal across genders and ethnic backgrounds, without the stigma sometimes associated with other mental health resources.

Presentation type Oral pre-recorded

41 A case study exploring children's experience participating in a canine-assisted social-emotional learning program

Nicole Harris, Dr John-Tyler Binfet

Faculty of Education, University of British Columbia, Kelowna, BC, Canada

Introduction: Children who struggle socially and emotionally are also at risk of struggling academically (Taylor et al., 2017). Fortunately, social emotional learning (SEL) can have significant positive effects on children's social competence (Durlak et al., 2011) which can, in turn, positively impact school success. One intervention that has recently shown promise in boosting children's socioemotional skills includes having children interact with therapy dogs. Despite the popularity of this approach, little is known about the perceptions and views of children who participate in canine-assisted interventions.

Methodology: This exploratory case study utilized interviews, field notes, and observations to gain insights into children's experiences in a canine-assisted SEL program. Children ($N = 8$, 5-11 years) participated in a six-week SEL program at a mid-sized western Canadian university. Upon completion of the program, participants were interviewed and queried on their confidence, social skills, and the role of therapy dogs in facilitating their socioemotional development. Using conventional content analysis, salient themes reflecting participants' experiences were identified. These themes were corroborated by volunteer observations and researcher field notes. To identify what each participant reported as meaningful, both within- and across-case analyses were conducted.

Findings: The most salient themes to emerge from participant interviews were that the dogs were an important component of the canine-assisted SEL program, the dogs' presence and affection made the children happy and excited, and the dogs provided emotional and behavioural support. Observer data revealed that the program was engaging; the therapy dogs were meaningful to the children, and provided social and behavioural support; and the children demonstrated social-emotional skills taught in the program.

Principal Conclusions and Implications for Field: Findings suggest that integrating therapy dogs into SEL can provide unique advantages and improve children's moods and engagement, especially for children who otherwise may disengage from traditional educational approaches.

117 Randomized controlled trial examining effects of varying levels of Human Canine Interaction on college students' diurnal cortisol.

Associate Professor Patricia Pendry¹, Alexa Carr¹, Jaymie VandaGriff¹, Director Nancy Gee²

¹Washington State University, Pullman, WA, USA. ²Center for Human -Animal Interaction, School of Medicine, Virginia Commonwealth University, Richmond, VA, USA

Introduction: Growing prevalence of mental health disorders among college students compromises their academic success. Increasing rates of academic stress and lack of stress management skills are thought to underlie this problem. Implementation of Animal Visitation Programs (AVPs) on university campuses is increasing as a tool to foster stress management skills despite limited information about their impact on students' academic success, overall stress, and mental health.

Methodology: We conducted a RCT (N=309), to examine effects of a 4-week college-based stress prevention program featuring varying levels of Human Animal Interaction (HAI) with registered therapy dogs and academic stress management (ASM) content presentations. Students were assigned to 1) Academic Stress Management (ASM) *content* presentations (0% HAI), 2) Human Animal Interaction only (HAI-O) (100% HAI), or 3) HAI-Enhanced condition (HAI-E) featuring equal combination of *ASM content* and HAI (50% HAI). At baseline and post-test, over 2 consecutive days, participants provided six samples of salivary cortisol (wakeup, afternoon, bedtime), from which diurnal cortisol parameters were calculated (Area Under the Curve, AUC; slope) using the polygon method. They also reported sampling time, food and caffeine intake, steroid-based medication, and sleep times.

Main results: Controlling for attendance and slope of diurnal cortisol pattern, multivariate regression analyses ($R^2 = .395$) showed that students assigned to the HAI-E condition experienced 12.44% lower average cortisol levels per waking hour (AUC) at posttest ($\beta = -.164$; $p = .013$) compared to the reference condition (ASM). Results showed that lower AUC levels were likely a result of HAI-E students' lower bedtime cortisol ($\beta = -.137$; $p = .049$).

Conclusions and Implications: Participation in a university-based AVP that combines exposure to stress management content with HAI is more effective in lowering students' cortisol levels compared to providing stress management content presentations only.

Presentation type Oral flash pre-recorded

136 Cat on Campus? The Pros and Cons of Bringing an Employee-Owned Cat to University in Light of Human Well-Being and Animal Welfare

Dr Joni Delanoeyje^{1,2}, Prof. Christel Palmyre Henri Moons³, MSc. Els Helena Karel Anna Peeters⁴

¹FEB KU Leuven, Campus Antwerp, Antwerp, Belgium. ²Research Group Sustainable Development, HIVA Research Institute for Work and Society, KU Leuven, Leuven, Belgium. ³Ethology and Animal Welfare Research Group, Department of Nutrition, Genetics and Ethology, Faculty of Veterinary Medicine, Ghent University, Merelbeke, Belgium. ⁴SALTO Research Group Agro- and Biotechnology, Odisee University College, Sint-Niklaas, Belgium

Campus cats, i.e. cats who spend time on campus and interact with students and personnel, are gaining attention over the world. At least twenty-one campus cats have been identified to date. These include freely roaming cats - either stray cats or owned cats living nearby - who deliberately spend time on campus. The effects of these cats on students and personnel are anecdotally documented and seem to align with hypothesized effects of human-animal interaction, such as facilitated interaction between students or employees, positive physical human-cat contact, stress-relieving breaks and improved atmosphere.

One particular campus cat is, to our knowledge, the first one worldwide that was intentionally introduced onto campus by his owner - a campus employee - to improve student moral and campus atmosphere. Contrary to other campus cats, this cat does not roam around freely, but is always accompanied by his owner. Based on findings from business economics about beneficial effects of owner-accompanying office dogs for employee well-being and work atmosphere, bringing a cat to campus served as a pilot experiment to study the equivalence of a campus cat. Surveys, qualitative behavior analysis, cortisol analysis and smart device (i.e. smartwatch and smartcollar) data analysis are used to study effects on humans and cat.

Important questions about the potential drawbacks of an owner-accompanying campus cat should be asked. From a human well-being perspective, the presence of a campus cat may cause problems due to cat allergies - which are twice as common as and often more severe than dog allergies - or phobias. From an animal welfare perspective, repeated territory relocation and frequent interaction with humans may cause stress. From both perspectives, lack of choice, of predictability and of need fulfillment - important stressors - may occur. Given the rising popularity of campus cats, it is crucial that both pros and cons for humans and cats are discussed.

164 Randomized Trial Examining Effects of Animal Assisted Intervention and Stress Related Symptoms on College Students' Learning and Study Skills

Associate Professor Patricia Pendry¹, [Alexa Carr](#)¹, Director Nancy Gee²

¹Washington State University, Pullman, WA, USA. ²Center for Human -Animal Interaction, School of Medicine, Virginia Commonwealth University, Richmond, VA,, USA

Introduction: Implementation of University - based Animal Visitation Programs (AVPs) has become an increasingly popular approach aimed at preventing academic stress and failure in at-risk university students despite limited causal evidence about their efficacy to enhance academic skills.

Methodology: We conducted a RCT (N=349), to examine effects of a 4-week university-based stress prevention program featuring varying levels of Human Animal Interaction (HAI) with registered therapy dogs and content presentations focused on academic stress management (ASM). Students were randomly assigned to 1) Academic Stress Management (ASM) *content* presentations only (0% HAI), 2) Human Animal Interaction only (HAI-O) (100% HAI), or 3) HAI-Enhanced condition (HAI-E) featuring equal combination of ASM *content* and HAI (50% HAI). We conducted intention-to-treat (ITT) analyses to examine effects of students' *risk* status (N = 146; higher than average depressive symptoms, anxiety, perceived stress and worry) and treatment condition on students' learning and study strategies (LASSI; Weinstein & Palmer, 2002) at posttest and again follow-up.

Main results: Compared to at-risk students in the ASM condition, results showed significant interactions between condition and risk status demonstrating higher post-test levels of WILL (i.e., anxiety, attitude and motivation) ($B = .582, p = .005$) and SELFREGULATION (i.e., concentration, self-testing, study aids, time management) ($B = .501, p = .031$) for at-risk students who received equal combinations of HAI and content presentations. Moderation effects remained significant 6 weeks later ($B = .626, p = .005; B = .630, p = .007$). At-risk students receiving only HAI (100%), also showed significantly higher levels of WILL at posttest ($B = .481, p = .021$) and follow up ($B = .490, p = .038$).

Conclusions and Implications: Results indicate that organizers of university-based AVPs should consider providing at-risk students with targeted programs with varying levels of HAI and ASM content depending on the academic outcome they seek to enhance.

126 The outcome of a single canine welfare workshop to primary age UK learners varies with proportion receiving free school meals.

Dr Rachel Casey¹, Dr Melissa Upjohn¹, Katharine Anderson¹, Anna Baatz², Hollie Sevenoaks³, Maria Kyle³

¹Canine Behaviour and Research Department, Dogs Trust, London, United Kingdom.

²Manchester City Football Club, Manchester, United Kingdom. ³Campaigns, Community and Education Department, Dogs Trust, UK., London, United Kingdom

Introduction: Socio-economic status (SES) may be a factor in risk of injuries from dogs (Raghavan et al. 2014). Understanding the influence of SES on the efficacy of canine welfare education workshops is therefore important in reducing bite risks.

Methodology: Likert-style questionnaires were used to measure attitudes towards safe behaviour around dogs and responsible ownership in UK learners aged 7-11. Learners participated in either a Dogs Trust ‘Safety’ (S) (n=2319) or ‘Responsible Dog Ownership’ (RDO) workshop (n=2221). Questionnaire scores and percentage of the class receiving free school meals (FSM) (as a proxy for SES) was captured during a controlled trial, where each class was randomly divided into a control group who completed the questionnaire before participating in the workshop; and a treatment group who did so at the end.

Difference in total scores between control and treatment groups were compared within each category of FSM% using t-tests, and post-hoc Cohen’s D effect sizes calculated for each using R (Version 3.4.0; R Core Team, 2017).

Results: Questionnaire score significantly varied between control and treatment groups ($P < 0.001$) in all categories, except for $>61\%$ FSM in the RDO workshop. For Safety workshops, the effect size relating to total questionnaire scores was 0.87, 0.81, 1.00 and 1.08 for classes of 0-20%, 21-40%, 41-60% and 61%+ FSM respectively. In ‘Responsible Dog Ownership’ (RDO) workshops, the effect size was 0.57, 0.73, 0.72 for classes of 0-20%, 21-40% and 41-60% FSM respectively.

Conclusion/Implications: In our study, change in scores between control and treatment groups was significantly influenced by the percentage of learners receiving FSMs. Post hoc effect sizes suggest that this difference may be greater with higher proportions of FSM recipients. Further research is needed to understand which messages are most effective for different groups of learners and how and why they may be perceived differently.

Presentation type Poster

37 Educational effect on awareness of animal welfare of a hands-on course on food and agriculture

Associate professor Yuki Koba¹, Assistant professor Aira Seo², Professor Hajime Tanida²

¹Faculty of Education & Human Sciences, Teikyo University of Science, 2-2-1, Senjusakuragi, Adachi-ku, Tokyo, Japan. ²Graduate School of Integrated Sciences for Life, Hiroshima University, 1-4-4, Kagamiyama, Higashi-Hiroshima, Japan

Introduction. A university farm focusing on recycling-oriented dairy production was appointed the national agricultural education center by the Education Ministry. One of its educational goals is to train students who can contribute to SDGs (Sustainable Development Goals) with a basic knowledge of food and agriculture. This study investigated whether a hands-on course offered by the farm influenced awareness of animal welfare in university students.

Methodology. The four-day residential training course offers students the opportunity to experience how livestock animals are reared. The study targeted 27 pre-school education (PE) students and 29 agricultural (AG) students participating in the 2019 summer course. We gave the students a quiz on basic animal production knowledge and a 5-point Likert questionnaire on awareness of animal welfare before and after the course.

Main Results. The quiz scores significantly (Wilcoxon signed-rank test, PE: $Z=4.5407$, $P<0.0001$, AG: $Z=4.7030$, $P<0.0001$) improved after the course, suggesting that it contributed to agriculture literacy regardless of students' field of study. The questionnaire scores significantly (Wilcoxon signed-rank test, PE: $Z=2.0402-3.2318$, $P=0.0012-0.0413$, AG: $Z=1.9649-2.4990$, $P=0.0125-0.0494$) changed in ten and six items respectively. Before and after the course, PE students were significantly (before: Mann-Whitney $U = 266$, $P=0.0395$, after: Mann-Whitney $U = 238$, $P=0.0118$) more compassionate to animals than were AG students, who had a more positive attitude to the use of animals by humans.

Principal Conclusions and Implications for Field. The course improved the agricultural literacy of the participants but affected awareness of animal welfare of PE and AG students differently.

58 Interaction of a pupil with ASD with a teacher and a trained dog

PhD student Iris Vainio¹, PhD Jaakko Hilppö^{1,2}, PhD Henri Pesonen¹, PhD Elina Kontu^{1,3}

¹University of Helsinki, Helsinki, Finland. ²Northwestern University, Evanston, IL, USA.

³University of Tampere, Tampere, Finland

Introduction: There has been scarce research done on canine assisted education - mostly short intervention studies. The results have been encouraging: animal assisted interventions improve the social skills of pupils with ASD.

Methodology: Our goal was to uncover how a pupil with ASD interacted in three different interaction occasions: 1) with a trained dog, 2) with a teacher when the trained dog was present and 3) with the teacher when the trained dog was not present. We used video data of a special education class in the capital area school in Finland and carried out interaction analysis in Atlas.ti.

Main Findings: When interacting with the dog, the pupil used a lot of nonverbal communication of good quality. The pupil started most of the interaction situations and steered the course of interaction. When interacting with the teacher while the dog was present, the pupil was actively using nonverbal communication of lower quality. The pupil started most of the interaction situations and took part in different kinds of conversations with the teacher. When the dog wasn't present and the pupil was interacting with the teacher, his nonverbal interaction was poor. The amount of the interaction situations was minor and the pupil was passive in interaction.

Principle Conclusions and Implications: When interacting with the dog or when interacting with the teacher while the dog was present, the pupil was more active in interaction and his nonverbal skills were better. The quality of interaction of the pupil was lower when the dog wasn't present. The results of this study are in line with the previous studies though in this study the observed pupil had good verbal skills and good functional ability. Larger samples are needed to clarify if the phenomenon appears with other pupils with ASD as well.

86 The Impact of Animal-Assisted Learning on Emotional Wellbeing and Reading in Children

Mrs Jill Steel

University of Edinburgh, Edinburgh, United Kingdom

Introduction: Animal-Assisted Learning (AAL) interventions are increasing exponentially, despite a paucity of quality research. This study aimed to evaluate how promotion of emotional wellbeing, through canine AAL, may support children's engagement with reading. Dogs can provide emotional support to children by forming a trusting attachment with a non-critical 'friend' who confers unconditional positive regard on the child, confidence may be boosted, and anxiety reduced. By promoting emotional wellbeing through interactions with the dog in a classroom setting children might begin to associate reading with feelings of wellbeing, resulting in increased engagement with reading.

Methodology: An empirical study was conducted in a mainstream Primary 1 classroom (n=25) over a four-week period. An inclusive approach was adopted whereby all children who wanted to interact with the dog were given the opportunity to do so.

Evaluation of the impact of the dog on children's wellbeing and reading included individual interviews, observational data and age-appropriate questionnaires. Three case study children were selected for more in-depth investigation.

Main Findings: Results were remarkably close to previous research. Child interviews and questionnaires revealed overwhelmingly positive outcomes particularly increased feelings of happiness, confidence and enjoyment of reading in the dog's presence. The teacher strongly conveyed that the dog had promoted reading engagement, even when he wasn't there, suggesting a lasting motivational impact. Observations revealed improved listening and behaviour, and class ethos. Whilst gains were evident for all, the greatest improvements were found in the most vulnerable.

Principal Conclusions and Implications: Canine AAL can support emotional wellbeing and in turn promote children's engagement with reading. The main limitation of the study was its short-term nature, and a longer randomised controlled trial with a larger sample, is currently being undertaken by the author. Barriers to AAL include health and safety concerns, and welfare of the dog.

97 Assessment of veterinary student confidence and competence in developing client-patient centered care plans in a community clinic

Erin King, Dr Emily McCobb, Dr Megan Mueller, Dr Gregory Wolfus, Dr Leslie Sharkey

Tufts University, Medford, USA

Introduction: The Tufts at Tech Community Veterinary Clinic (TAT) is a unique model of accessible veterinary care that provides low-cost services for pets within Central Massachusetts' (United States) underserved communities. Additionally, the clinic provides an opportunity for veterinary students to develop primary care skills. In order to help clients who cannot afford needed treatments for their pets, the clinic developed a Patient Care Fund (PCF), which provides each veterinary student \$50 per week to use as they wish to offset patient care costs. This project aims to assess the impact of the PCF as a learning tool that allows students to practice making decisions in real-world scenarios with resource restrictions. This project also assesses student confidence and ability to construct "patient-centered" care plans that take into consideration barriers to veterinary care and One Health principles.

Methodology: Participants for this study are clinical year veterinary students who completed a 3-week rotation at TAT. Students completed a questionnaire at the beginning and end of their community clinic rotation. Data collection is currently ongoing and will conclude in March, 2020.

Main Findings: Preliminary results suggest that 100% ($n=90$) of students who worked in the community clinic encountered clients with financial limitations. Students also reported working with clients experiencing additional limitations to care including transportation to the clinic (80%, $n=72$) and language comprehension (90%, $n=81$). Additionally, 85% ($n=77$) of students agreed/strongly agreed that their

experience in the clinic affected their thoughts about community medicine and 79% ($n=71$) of students agreed/strongly agreed that their experience affected their feelings about underserved clients.

Principle Conclusions and Implications: A community clinic teaching model exposes veterinary students to clients facing barriers to care and impacts student learning. Community-based veterinary clinics may provide an important pedagogical approach to providing veterinary students with training in community-based One Health practices.

151 The Impact of Animal-Assisted Interventions on the Mental Health and Stress of University Students: A Systematic Review

Miss Jillian Bradfield, Professor Joanne Williams

The University of Edinburgh, Edinburgh, United Kingdom

Introduction: University students are a population that experiences higher than normal levels of stress and mental health difficulties. Animal-assisted interventions (AAI) is a relatively new field that has the potential to improve the symptoms and quality of life of these students.

Methodology: A systematic review using MEDLINE, EMBASE, PsychINFO, Web of Science, and the PROQUEST Social Science Premium Collection was conducted, along with a manual search of the cited references of the identified articles. All included articles underwent a quality review.

Main Findings: A total of 444 records from database conception to October 2019 revealed 58 potentially eligible studies, 35 of which met the inclusion and exclusion criteria. However, the popularization of AAI studies is recent: only 9 studies were published before 2014, and over half of the studies (54%) were published since 2017. AAI research is overwhelming being produced in North America, with 19 studies published in the United States of America, followed by 9 studies in Canada. Thirteen studies focused on AAI directly before examinations, while the remainder took place over the rest of the academic year. Only one study specifically recruited students who were experiencing mental health issues, as opposed to the general student population. However, four additional studies screened for depressive and/or anxiety symptomology in students at baseline. All studies, with the exception of two, found significant results regarding reduction in stress, anxiety or depression symptoms.

Principle Conclusions and Implications: Despite the recent increase in studies, the best methodology for reduction in stress and mental health symptomology is still unknown. Future studies should focus on the length of time of the program, the influence of different animals used, and the role of social interaction with other students to determine the best program. Furthermore, the exact mechanisms behind AAI is still unknown and should be researched.

223 Therapy Dog as a Distraction from Work? Evaluation of Noncontingent Access to a Therapy Dog during ABA-Based Academic Sessions in Children with Autism Spectrum Disorder

Dr Alexandra Protopopova¹, Megan Arant¹, Dr Breanna Harris², Dr Jeanne Donaldson³

¹University of British Columbia, Vancouver, Canada. ²Texas Tech University, Lubbock, USA.

³Louisiana State University, Baton Rouge, USA

Introduction: In this study, we assessed a novel integration of Animal Assisted Interventions (AAI) and Applied Behaviour Analysis (ABA) interventions, in which the therapy dog is presented noncontingently but the child is asked to work for a preferred leisure item. This kind of intervention was hypothesized to harness the potential benefits of both AAI and ABA most effectively.

Methodology: In a sequence of two experiments, we utilized an experimental single subject multi-element and reversal designs in which each participant served as his or her own control (n = 9). In Experiment 1, each participant experienced 5 conditions, 4 times each, in a random sequence (20 sessions total). Each session lasted approximately 30 min and included work on an educational task, access to a reinforcer and therapy dog depending on the condition, and salivary cortisol collection. In Experiment 2, the participants experienced 3 conditions in a reversal design (average of 16.5 sessions total). Data on the rate of working on an academic task (Experiment 1 and 2), preference for various leisure items including the therapy dog (Experiment 1 and 2), and changes in salivary cortisol were collected (Experiment 1).

Main Findings: We found that the addition of the dog into the room reduced the participants' rate of academic work, potentially by being a distraction. The data did not support the hypothesis that adding a dog to an academic session reduced physiological stress of the children in our study, as measured by changes in salivary cortisol. We found that for some children with autism spectrum disorder, an interaction with a therapy dog is a preferred leisure activity.

Principle Conclusions and Implications: Education specialists should consider the method of the presentation of the dog within an academic session in order to sustain rather than interrupt work.

224 Teaching One-Health in an HAI Curriculum: Challenges and Benefits.

Dr Gaylene Fassenko

New Mexico State University, Las Cruces, USA

Introduction: The scientific field of Human-Animal Interaction (HAI) is inherently multi-disciplinary. However, those teaching HAI have degrees focussing on either human or non-human animal health and wellness. The goal of the one-health concept is to promote the importance of bringing together experts in disciplines which study human, non-human animal, and environmental health. To date, little information has

been provided regarding how to effectively incorporate the one-health concept into HAI courses/curriculum.

Methodology: This presentation will review the current literature regarding the approach to teaching one-health and HAI in post-secondary education. There is a paucity of published information on teaching one-health and fewer resources regarding teaching one-health in HAI courses or curriculums.

Main Findings: This presentation will focus on an overview of the author's experience in developing courses for an HAI minor over the past 10 years and how the one-health concept fits into the curriculum. The presentation will describe the use of team-based learning and how this pedagogical approach is advantageous in teaching multi-disciplinary topics.

Principle Conclusions and Implications: The HAI discipline has historically been more targeted at studying human-health and wellness. This may be partly due to the availability of research funding that is directed at helping people rather than animals. As such, most people teaching and conducting research in HAI have expertise in human health and wellness fields such as psychology, social work, or nursing. Because of the inherent interdisciplinary aspects of both HAI and the one-health approach great opportunities exist for teaching one-health concepts into HAI curriculum. This may lead to funding agencies reducing their anthropocentric focus and supporting research on the health and well-being of non-human animals that are incorporated into HAI. This may also lead to greater collaboration between researchers studying human health and wellness and scholars with expertise in non-human animals.

56 Effects of dog assisted activity on the self-esteem and depressive symptomatology of 9 to 11 year old elementary students in Greece.

Dr Georgios Kleftras¹, Evangelos Diamantakos², Dr Ioannis Chaniotakis³

¹University of Thessaly, Surrey, Greece. ²Society for Companion Animal Studies, Surrey, United Kingdom. ³Kynos Nous, Athens, Greece

The study took place in an English-speaking elementary school in Greece. The hypothesis predicted that interaction with a dog in a Dog Assisted Activity (DAA) programme would lead to change in self-esteem, and depressive symptomatology in students.

The design used two repeated measures (baseline; and immediately following the DAA programme). The independent variables were the interaction with a trained dog (experimental group, n=19) and the attendance of lectures on dog training (control group, n=26). The dependent variables were their scores at self-esteem and depressive symptomatology at each point of assessment. Each group attended 10 sessions and their scores were measured by two questionnaires (Culture Free Self-Esteem Inventories, Battle 2002; The Children's Depression Inventory manual, Kovacs

1992). The design of the DAA programme gave particular emphasis on ethical, health and safety, and animal welfare issues.

To test for any changes across time, t-tests were conducted for the different samples that were evenly distributed. For the samples which were unevenly distributed Mann-Witney U test were conducted as appropriate. For the comparisons among the same samples t-tests and Wilcoxon tests were conducted according to the relative even or uneven distribution. The analysis of the results showed an increase in self-esteem ($p=.030$) and a decrease in depressive symptomatology ($p=.039$) for the students of the experimental group.

It is worth mentioning that during the initial completion of questionnaires the participants revealed high scores of self-esteem and low scores of depressive symptomatology. However, according to the results of the study, DAA programmes may positively affect and further boost the psychological health of elementary school students who have not been diagnosed with either low self-esteem or depression. The research conclusions suggest that DAA programmes may be beneficial role as a part of a holistic approach targeting in increasing the psychological status and welfare of students into the school environment.

128 Animals in textbook: how Japanese view of life and death is taught in elementary school.

Mr. Ryo Taguchi¹, professor Miki Kakinuma¹, Dr Izuru Nose¹, professor Fukutaro Kobayashi², Dr Takashi Hata³, Dr Hidehiko Yonekawa³, Ms. Yae Sato¹

¹School of Veterinary Medicine, Nippon Veterinary and Life science University, Tokyo, Japan.

²School of Physical Education, Tokyo Women's College of Physical Education, Tokyo, Japan.

³Suginami Veterinary Association, Tokyo, Japan

Introduction: Religious education is prohibited by law in Japanese public schools. Instead, moral education called “*doutoku*” is provided in Textbooks used in Japanese schools authorized by the government and published by eight companies, supplied to 6 million elementary school students (1-6 grades). Teachers are strictly required to use them. The textbooks often contain descriptions about animals. In this study, we analyzed the role of animals in *doutoku* textbook.

Methodology: A total of 48 textbooks for elementary school were analyzed. Animal appearances, type of animal, and the purpose of the lesson were counted. Characterized animals were excluded (i.e. Mickey Mouse).

Main Results: A total of 131 episodes were with an animal/s. First grader textbooks included more stories with animals ($\chi^2=10.541$, $df=5$, $p<.05$). The most popular teaching purpose was to respect life. Dogs were the most common animal species. One of the stories in the respect of life category was about a veterinarian suggesting euthanasia and the owner refused and took care of the dog with much devotion, and

the dog lived happily ever after. Anthropomorphic depictions of animals were found in textbooks of seven of eight companies (91.4% overall share).

Principal Conclusions and Implications for Fields. In the textbooks, people are trying to avoid loss of animal's lives even if the euthanasia was for the purpose of removing pain. This may be different from the western concept of animal welfare, which may be due to Juda-Christianism of basic human-animal relationship and the Buddhism concept of reincarnation. This suggests the influence of exposure to anthropomorphic expressions and descriptions in *dotoku* textbooks. This type of thinking may be related to the Japanese tendency to reject veterinarian's proposal to euthanize pets compared to other Western countries¹).

References: 1) Hizuru SUGITA (2009). Should Pets Suffering From Fatal Diseases Be Euthanized? Japanese Attitudes Toward Euthanasia of Pets as Seen in Data of JGSS-2006. JGSS Research Series

165 The Effect of Dog Assisted Activities and Visitation Programmes on Wellbeing, Mood and Anxiety of University Students

Dr Dasha Grajfoner

Heriot Watt University, Psychology Department, Edinburgh, United Kingdom

Introduction: College and university students are one of non-clinical groups that has recently received a greater amount of attention in the Animal Assisted Intervention literature. Student mental health, resilience, and well-being are key concerns for universities as they impact on student performance and their ability to deal with personal changes: moving away from home, family and pets, and adapting to a new environment. Those life transitions represent considerable stressors and can compromise mental health and performance in young people.

Methodology: A series of six studies, exploring student wellbeing, mood and anxiety, were carried out over a period of one year in partnership with Canine Scotland. In total 400 students completed Warwick-Edinburgh Mental Well-being Scale (WEMBS), the State Trait Anxiety Scale (STAI), and the UWIST Mood Adjective Checklist (UMACL) before and after a 20 minutes long dog assisted activity session, which included unstructured group interaction with a therapy dog and their handler.

Findings: The analyses revealed that dog assisted activity led to significant increases in mood and well-being, as well as a significant reduction in anxiety.

Principal Conclusions and Implications for Field: The results show that even a short 20 minute interaction with a therapy dog can be an effective way to improve student well-being, anxiety and mood, and should therefore become an integrative part of planning and implementing effective intervention strategies in higher education.

Author Index

- Abramson, C., 120
 Aden, J., 64, 70
 Aiello, T., 155
 Ainslie, A., 112
 Akiyama, J., 69
 Allen, B., 149
 Anderson, E., 65
 Anderson, K., 170
 Applebaum, J. W., 62
 Arant, M., 175
 Arrington, A., 58
 Ascione, F., 91
 Aslan, R., 70
 Atherton, W. L., 129
 Baatz, A., 170
 Badman-King, A., 98
 Barber, O., 83
 Bearman-Brown, L., 43
 Bennett, P., 42, 88, 151
 Bennett, R., 112
 Bennett, S., 150
 Bibbo, J., 68
 Binfet, J., 36, 49, 74, 79, 157, 166
 Black, M., 4, 30, 31, 39, 41
 Blankenburg, U., 59
 Blazina, C., 60
 Blieschke, S., 96
 Boek, F., 59
 Bombo Perozzi Gameiro, M., 127
 Bosacki, S., 102, 107
 Bowen, J., 88
 Bowman, A., 140
 Bradfield, J., 174
 Brandes, H., 67
 Brelsford, V., 44, 163
 Brown, A. F., 119
 Brown, C. A., 61
 Buckland, E., 135
 Bunina, A., 64, 70
 Burden, F., 115, 123
 Butcher, A., 149
 Byosiere, S., 139
 Campbell, K., 40
 Carlyle, D., 162
 Carr, A., 167, 169
 Carr, E., 61
 Casey, R., 71, 97, 100, 133, 135, 136, 141, 145, 170
 Cefrorella, C., 94, 126
 Chaniotakis, I., 176
 Chapman, A., 114, 124
 Charles, N., 142
 Chaudhari, A., 153
 Chestnutt, S., 87
 Chin, M., 82, 90, 101, 105, 111
 Christley, R., 92, 97, 100, 136
 Chun, M., 108
 Clancy, C., 117, 118
 Coleman, G., 134
 Contalbrigo, L., 101, 159
 Cook, R., 134
 Cooke, F., 117, 118
 Costa-Goncalves, A., 150
 Da Costa, R. E. P., 135, 141, 145
 Davenport, R., 49
 de Sousa, L., 84, 85
 Del Grande, E., 150
 Delanoije, J., 168
 Devitt, C., 160
 Di Iacovo, F., 159
 Diamantakos, E., 176
 Dildar, S., 63
 Dimolareva, M., 44, 163
 Donaldson, J., 175
 Doodson, P., 43
 Dowell, F., 140
 Dreschel, N., 149
 Durston, T., 97
 Dykes, H., 120
 Edney, J., 78
 Ekakoro, J. E., 56
 Elaine McDonald, S., 91
 Emmett, L., 64, 70
 Enders-Slegers, M., 6
 Eshuis, J., 47
 Esposito, L., 9
 Evans, N., 140
 Farias, S., 127
 Fassenko, G., 175
 Fatjo, J., 88
 Filugelli, L., 101
 Fleming, K., 89
 Flores-Cruz, G., 101, 105, 111
 Flynn, J., 154
 Foraita, M., 151
 Ford, J., 134
 Fox, M., 72, 156
 Fox, R., 142
 Furtado, T., 97
 Furukawa, K., 146
 Gaab, J., 52
 Galardi, M., 101, 159
 Gallard, D., 162
 Ganzabal, G., 126
 Gautam, M., 26
 Gazzano, A., 86, 152
 Gee, N., 163, 167, 169
 Georgiou, F., 75
 Glanville, C., 134
 Glintborg, C., 127
 Goring, P., 37
 Grajfoner, D., 122, 178
 Grandgeorge, M., 88
 Graves Boswell, T., 164
 Gray, C., 99
 Green, F., 36, 74, 157
 Haddy, E., 123
 Hanlon, A., 160
 Hansen, T., 127
 Harris, B., 175
 Harris, L., 97
 Harris, N., 166
 Hartwig, E. K., 44, 55
 Hartwig, E.K., 36
 Harvey, E., 60
 Harvey, N., 71
 Hata, T., 177

- Hawes, S. M., 58
 Hawkins, R., 91
 Hazel, S., 96, 150
 Hediger, K., 51, 52, 57, 59
 Henry, S., 164
 Hiestand, K., 138, 147
 Hill, K., 143
 Hilppö, J., 171
 Hoffman, C., 80
 Holland, K., 100, 136
 Howell, T., 42, 151
 Hoy-Gerlach, J., 56
 Hund-Georgiadis, M., 57
 Hunter, T., 150
 Hurn, S., 98
 Hüsgen, C. J., 66
 Hutchinson, R., 43
 Iqbal, U., 64
 Ireland, J., 113
 Jacobs, N., 47
 Jacobson, K., 6
 James, D., 4, 39
 Janssens, M., 47
 Jensen, C., 48, 68
 Johnson, C., 49
 Jones, E., 135
 Joo, S., 108
 Joo, Y., 109
 Kakinuma, M., 146, 177
 Kane, Y., 114
 Kartal, T., 153
 Kelly, A., 160
 Keogh, L., 160
 Khalid, A., 63
 Kieson, E., 120
 King, E., 65, 173
 Kinsman, R., 141, 145
 Klaps, A., 70
 Kleftaras, G., 176
 Klinkenberg, B., 43
 Kluger, E., 59
 Kluger, G., 59
 Knoll, M., 64
 Knowles, T., 141, 145
 Koba, Y., 144, 171
 Kobayashi, F., 177
 Kontu, E., 171
 Krouzecky, C., 64, 70
 Kubasiewicz, L., 115
 Kuypers, M., 132
 Kyle, M., 170
 LaFollette, M., 51
 Lanning, B., 164
 Lässer, A., 64
 Lataster, J., 47
 Lee, H., 108
 Lercier, M., 158
 Lewis, C., 160
 Lewis, H., 162
 Locher, C., 52
 Lopes-Conceição, L., 46, 84, 85
 Lord, M. S., 141
 Lunet, N., 84, 85
 MacArthur, M., 150
 MacLean, E., 48
 MacLeod, E., 114
 Maggs, H., 112
 Mariti, C., 86, 152
 Marti, R., 57
 Mata Guidi, A., 82, 90
 Matijczak, A., 54, 81, 82, 91
 Matsushima, M., 146
 Maynard, A., 102
 Mazzocca, F., 127
 McBride, A., 36, 83
 McCloughlin, E., 118
 McCobb, E., 173
 McDonald, S. E., 54, 81, 82
 McGowan, C., 113
 Mead, R., 100, 136
 Meints, K., 44, 163
 Melfi, V., 43, 106, 110
 Mendes Ferreira, G., 37, 40, 140
 Meola, C., 129
 Merkouri, A., 53
 Messam, L., 160
 Michaliszyn, L., 35
 Miele, M., 142
 Mills, D., 35
 Mills, Dana., 49
 Mitchell, L., 75
 Montemayor, W., 44
 Moons, C. P. H., 168
 Moore, S., 107
 Morris, K., 58
 Moruzzo, R., 159
 Mroz, M., 165
 Muckle, P., 119
 Mueller, M., 65, 173
 Murphy, J. L., 54, 81, 82
 Murray, J., 135, 141, 145
 Newton, V., 114, 124
 Ng, Z., 38
 Ngoi, H. C., 103
 Nieforth, L. O., 50
 Nielsen, T., 96, 150
 Normando, S., 101
 Nose, I., 146, 177
 O'Connor, K., 91
 Ogata, N., 51
 O'Haire, M., 48, 50, 51, 53, 68
 Ohta, M., 69
 Ojha, M., 56
 Ortiz, O., 123
 Owczarczak-Garstecka, S., 89, 92, 141, 145
 Pachana, N., 75
 Passmore, N., 139
 Paterson, M., 75
 Patterson, M., 164
 Peeters, E. H. K. A., 168
 Peeters, S., 47
 Peleteiro, B., 46, 84, 85
 Pendry, P., 6, 167, 169
 Perkins, E., 113
 Perry, A., 125
 Pesonen, H., 171
 Peters-Scheffer, N. C., 66
 Petignat, M., 57
 Phillips, C., 75
 Pinchbeck, G., 113
 Pon, A., 93
 Proops, L., 83, 123
 Protopopova, A., 175
 Purewal, R., 53
 Rauktis, M. E., 78
 Raw, Z., 115
 Ray, M., 72
 Reed, A., 98
 Reijnders, J., 47
 Rice, T., 98
 Rodrigues, J., 123
 Rodriguez, K., 6, 48, 50, 51, 68, 133
 Roma, R., 107, 116

- Rood, A., 131
 Rose, P., 98
 Rousseau, C. X., 74, 79
 Rowan, A., 94
 Ruple, A., 56
 Sachers, J., 59
 Saghah, S., 165
 Samet, L., 71
 Sampson, H., 106
 Sands, K., 77
 Sato, Y., 177
 Schaudeck, M., 59
 Scheuermann, B., 56
 Schuurman, N., 137
 Segredo, E., 94, 126
 Seo, A., 144, 171
 Sevenoaks, H., 170
 Severo, M., 46, 84, 85
 Sharkey, L., 173
 Shenk, C., 149
 Shih, H., 75
 Shindo, A., 76
 Simons, M., 47
 Sims, V., 82, 90, 101, 105, 111
 Singh, S., 156
 Smith, B., 80
 Smith, H., 142
 Smith, R., 113
 Somogyi, E., 83
 South, C., 165
 Spence, C., 148
 Steel, J., 172
 Stephen, J., 122
 Stetina, B. U., 64, 70
 Sutton, Z., 104
 Suzuki, K., 146
 Taguchi, R., 177
 Tanida, H., 144, 171
 Tardif-Williams, C., 74, 102, 107, 116
 Tasker, S., 141, 145
 Taylor, S., 131
 Teo, C., 93
 Tomlinson, C. A., 54, 81, 82
 Toze, M., 72
 Tui, S., 121, 130
 Tuke, J., 150
 Tulloch, J., 89
 Ueda, Y., 144
 Upjohn, M., 71, 97, 100, 136, 170
 Urry, H., 65
 Vainio, I., 171
 Van Fleet, R., 29
 van Rooy, D., 150
 van Wessen, C., 110
 VandaGriff, J., 167
 Vaterlaws-Whiteside, H., 71
 Vincent, A., 56
 Visser, K., 132
 Vivancos, R., 89
 Wagner, C., 52
 Wang, M., 149
 Wang, Y., 61
 Ward, P., 124
 Warda, T., 61
 Watkins, F., 92
 Watson, T., 115
 Westgarth, C., 53, 89, 92
 Williams, B., 128
 Williams, J., 6, 64, 73, 91, 121, 130, 131, 174
 Williams, N., 27, 28, 46
 Winston, K., 49
 Winton, L., 73
 Wolfus, G., 173
 Woods, A., 28, 29
 Woodward, J. L., 135, 141, 145
 Wynne, C., 4, 6, 25
 Yamamoto, M., 6, 76
 Yang, H., 92
 Yacilla, J., 56
 Yonekawa, H., 177
 Young, J., 104
 Zanella, A., 127
 Zappi, H., 123