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**Applied
Ethology**

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President's Piece

Dear ISAE members,

It was an honour to take over from Susanne Waiblinger as ISAE President at our virtual AGM in August. I would like to take this opportunity to thank the three outgoing ISAE Council members (Bas Rodenburg, Marisa Erasmus and Irene Camerlink) and welcome three new ones to the team (Janice Siegford, Carly O'Malley and Kris Descovich - it's actually a welcome back to the team for Janice and Kris). The ISAE Council is very much a team effort, and I'm delighted to be part of such a great team.

The coronavirus pandemic has impacted all of our lives to varying degrees over the last couple of years, and this includes our society's meetings. This year (2021) we held our first virtual congress, and overall, I believe it was a great success. However, some things worked better than others, and many of us are looking forward to getting back to our 'normal' face-to-face meetings. So as COVID-19 loosens its grip, we can start to plan to get back to normal, and we are hoping our 2022 congress will be face-to-face in Ohrid, North Macedonia (to be confirmed early next year). But we should take this opportunity to pause and reflect with the aim to 'build back better'. Our virtual congress had two big advantages over a face-to-face meeting: the fact people didn't need to fly to participate made it a lot more **inclusive** and far more **environmentally friendly**. We have a new Equity, Diversity, Inclusion, and Accessibility (EDIA) committee (they get a separate welcome and introduction on pages 17/18), and they are already looking at ways to make our future congresses more inclusive.

Since our last Newsletter, the Intergovernmental Panel on Climate Change have declared a 'Code Red' on climate change and whilst some progress was made at COP26, it still looks like global warming will exceed 1.5°C. However, even before these events, it was becoming increasingly apparent that there is a rather large elephant in our congress hall: the environmental cost of our face-to-face meetings. This is a particular challenge for our society as we are truly international and so flying is often the only option for many congress delegates. But as you are probably already aware, flying has a disproportionately high carbon footprint per passenger kilometre compared to the train, a coach or passenger ferry. For example, according to the UK Department for Business, Energy & Industrial Strategy, a short-haul flight produces over 34 times more CO₂e per passenger km than international rail.

Our next two international congresses are both due to be held in Europe (North Macedonia in 2022 and Estonia in 2023), and for the half of our members that are based outside Europe, you will probably still need to fly if you wish to attend in person. We are however planning to offer 'virtual' attendance opportunities as well, so you might opt for that approach instead. But for the half of our members that are based in Europe I have a challenge for you: if you plan to attend either one or both of our next two congresses in person, **can you do so without flying?** No doubt quite a few of you already take this 'no-fly' approach, in which case I applaud

you for leading the way. But for the people who still rely on flying for intra-European travel, the no-fly option will seem daunting as it almost certainly requires more planning, takes longer and probably costs more. Whilst the society can't help with the latter two, we will be including details of 'no-fly' travel options on future congress websites to help you plan trains, coaches and ferries. Hopefully we can meet face-to-face for our 2022 congress in Ohrid, North Macedonia, and as President I really should be there! However, rather than the convenience of a 3hr Wizz Air flight from London direct to Ohrid, I'm planning to take a more leisurely journey. First a train to London, then the Eurostar for a late lunch in Paris before taking a TGV for an overnight stop in Basel. The next day, after changing trains in Milan, it's down Italy's Adriatic coast to Bari for dinner. From there an overnight ferry to Durrës in Albania, where there will be time in the morning to explore the Roman-era amphitheatre before a 3.5hr shuttle bus ride to Ohrid. Although this journey will take three days instead of one, I'm already looking forward to what I hope will be a memorable 'Great Railway Journey' taking in a variety of European cultural delights on the way. Returning by the same route will result in a total estimated emissions savings (train vs plane) of over 530kg CO₂e (96 vs 628kg CO₂e). That's broadly equivalent to the emissions savings from 2.5 years' worth of recycling, or, for meat and dairy consumers, going vegan for over six months. I hope this greener 'slow travel' itinerary might inspire a few Euro-fliers to consider the train!

Mark Rutter / *President of the ISAE (2021-2023)*

In memoriam: Prof. Piet Wiepkema

1928-2021



Picture: European Symposium on Poultry Welfare, 1985

Gratefully provided by Mike Appleby.

It is with deep sadness that I received the message informing about the passing away of my tutor Professor Piet Wiepkema. Piet became professor of ethology at Wageningen University in 1979, around the same time as I finished my studies at the same university. I got a position at the Poultry Research Centre 'Het Spelderholt' and, as was usual at that time, worked on my PhD 'on the side' of my every-day job. In that context, I met Piet for the first time and asked him if he could be my supervisor. He agreed and we had many long meetings and intensive discussions over a period of 10 years (I defended my thesis in 1989). We worked at two topics at the same time: sleep in poultry and feather pecking (in the end the latter topic became my thesis). From these meetings I remember most that Piet always first complemented me on the good parts in my reasoning or draft paper but quite soon started to discuss the weaker points. In doing that he, very pedagogically, asked me to explain what I meant, how I reasoned and in that way made me improve myself. I enjoyed these discussions!

During the years we had several other collaborations and Piet always gave important input to improve the scientific quality. I miss his friendly and modest guidance.

Harry Blokhuis

At the age of 93 Em. Prof. Piet Wiepkema, an Honorary Fellow of the ISAE, passed away on December 13, 2021. Prof. Wiepkema moved from Groningen to Wageningen in 1979 and led a successful ethology group there until 1993, when he retired. At that time, he already predicted that sustainable farming requires a reduction in scale. 'The longer we wait with that, the harder it will be', he said in 1993. The reduction of intensive livestock farming is still a hot topic in current Dutch politics.

Prof Wiepkema knew that fast growing broilers were physically retarded, and broiler breeders were behaving as if they hadn't eaten for a week. 'Totally unacceptable', he said.

Prof. Wiepkema focused on the effects of stress on animals. His homeostatic Istwert-Sollwert model of animal welfare, derived from Von Uexkuhl, was well-known. It was published in his contribution to the book 'Biology of stress in farm animals: An integrative approach' (Wiepkema and Van Adrichem (eds), 1986). Animals, Wiepkema wrote, have evolved cognitive-emotional control mechanism to deal with a variable environment. That was the basis for the idea that current farming is rearing animals in environments that widely differ from the environments in which they have evolved. The discrepancy between how the animal perceives its environment (the Istwert) and the norm (the Sollwert) is what activates behavioural and physiological responses, including stress.

Stereotyped behaviour, like bar biting in sows, he regarded as a welfare scar. It releases endorphins that reinforce the behaviour as if the animal were suffering from a drug addiction.

Wiepkema hoped his successor would get around to actually reducing stress in animals. Unfortunately, that hope never materialised.

Marc Bracke

Updates from your ISAE Council

Council Position Vacancies

Dear ISAE Members,

In 2022, four council positions will be open, including Membership Secretary, Assistant Communications Officer, Procedural Advisor, and Ethics Officer. Please read the descriptions of the positions below and consider submitting an application.

1. **Membership Secretary.** The Membership Secretary duties include managing membership to ISAE, including bringing new applications to the council for voting, updating regional managers about new members, maintaining the online membership database, and ensuring members are subscribed to *Applied Animal Behaviour Science*. The Membership Secretary serves a 4-year term.

2. **Assistant Communications Officer.** The Assistant Communications Officer manages the ISAE social media accounts, summarizes engagement with the social media accounts, and assists the Communications Officer as needed. The Assistant Communications Officer serves a 4-year term.

3. **Procedural Advisor.** The Procedural Advisor is responsible for ensuring ISAE meetings and procedural matters (including Constitutional amendments and data protection) are conducted in accordance with the ISAE Constitution and Guidelines. The Procedural Advisor serves a 4-year term.

4. **Ethics Officer.** The Ethics Officer duties include consulting and advising the council during meetings, chairing the Ethics Committee, and reviewing and updating the ISAE Ethical Guidelines as needed. The Ethics Officer serves a 4-year term.

5. **Assistant Development Officer.** The Assistant Development Officer oversees business related to the Developing Country Congress Attendance Fund, assists the Development Officer and contributes to regional development as needed. The Assistant Development Officer serves a 2-year term.

If you are interested in serving on the ISAE Council, please submit your application materials to me (Carly, comalley15@gmail.com), including 1) a paragraph outlining your interest in the position and relevant skills, and 2) your 2-page CV to be shared with ISAE Members no later than **Monday, 22 August**.

Carly O'Malley / Secretary of the ISAE (2021-2025)

Communications

ISAE Resources for Researchers. We would love to see the resources page on our webpage (link) grow – please drop us an email with tools that prove to be helpful to organize your projects, software that you use for data analysis, and Open Science resources that you would like to share.



Applying Ethology Webinars. We are continuing to maintain the *Applying Ethology Webinars* on the **Animal Welfare Slack Workspace**. Since our launch in 2020, 37 (early career) scientists have shared their research (check out our YouTube channel - link below). If you would like to give a presentation, please fill out this form: <https://tinyurl.com/applyingethologyspeaker>

The **Animal Welfare Slack Workspace** has grown to over 800 members! On the workspace, you have access to our *Applying Ethology Webinars*, job postings, recent papers, and methodology questions. The Slack space is open to everyone, regardless of ISAE affiliation. Please email Christian Nawroth or Jen-Yun Chou to gain admittance.

Once you join the **Animal Welfare Slack Workspace**, please join the channels (such as #webinar) you find interesting. The #webinar channel has important information such as speaker biographies and the calendar 'pinned' at the top.

For your convenience:

- Calendar of upcoming talks: <https://tinyurl.com/applyingethologycalendar>
- Speaker list and instructions: <https://tinyurl.com/applyingethologywebinar>
- YouTube channel: <https://www.youtube.com/channel/UCe6fHV211isHwiSgGV50Lqw>

Share Your News! If you have job or graduate student positions to advertise, conferences/webinars/courses, ethology news items, survey requests, or Open Access papers or temporary free-access author links, send the details to info@applied-ethology.org. Include a photo of your study species or test design for Open Access articles, if possible. We also encourage you to send us short videos, gifs or visual abstracts of your work. If you have **Twitter**, include your handle so we can tag you! Please be aware that all news items - including job positions - may have up to a 1-2-week delay in posting to social media so send them well in advance of position close.

Calendar coming soon! The ISAE webpage will soon offer a calendar option – a handy tool to check for upcoming events – but also for organising your own events!

Christian and Megan look forward to interacting with you online and hope to see you in person again soon!

Christian Nawroth / *Communications Officer of the ISAE (2020-2024)*
Megan LaFollette / *Assistant Communications Officer of the ISAE (2020-2024)*

Editors

Special issues. The Special Issue for the 2021 conference, themed ‘**Developing animal behaviour and welfare: Real solutions for real problems**’ will be accepting manuscripts up to the deadline of December 31. Guest editors for this issue include Dr Dana Campbell, Dr Kris Descovich, Dr Madan Lal Kamboj, and Dr Vijay Pal Singh. If you missed this deadline and have a manuscript almost ready, please contact Dana Campbell (dana.campbell@csiro.au) to discuss options for an extension. Information on the Special Issue is available under ‘Call for papers’ at the AABS website (<https://www.journals.elsevier.com/applied-animal-behaviour-science/call-for-papers>). We are currently processing several manuscripts submitted to the Special Issue and once complete these articles will be listed on the ISAE website and freely available to readers.

Any readers wishing to look through the past ISAE Special Issues can find them located together in the Article Selections <https://www.journals.elsevier.com/applied-animal-behaviour-science/article-selections/isae-special-issues>

Help with English scheme. The International Society for Applied Ethology (ISAE) has an English grammar and language editing service available to help [members](#) prepare manuscripts for publication, irrespective of the journal choice. Since July, we have received 3 manuscripts for correction and great support of volunteers who made the corrections.

ISAE members should send requests for manuscript editing assistance to: the ISAE Junior Editor, Dr Kris Descovich at k.descovich1@uq.edu.au. Please include the manuscript title, contact information, key words, and a copy of the abstract. Your manuscript will be edited by an ISAE member who has volunteered to help you with the English of your paper. It may take up to 4 weeks before you receive the revisions as it is based on volunteers. The volunteer should be acknowledged in your paper but will not expect to be included as an author. Individual members can use the editing service to request up to 5 manuscripts per calendar year. If you are an ISAE member interested in serving as a volunteer for this program, please contact Kris for more information.

Dana Campbell and Kris Descovich / *Senior and Junior Editors of the ISAE (2021-2023)*

Students

2021 ISAE Virtual Congress Event. Due to the COVID-19 pandemic, the 2021 ISAE Congress in Bangalore, India was held virtually. To encourage networking, we adapted and hosted *Eating with Ethologists* as an online event at two different hours to accommodate as many time zones as possible. Before Congress, we were fortunate to have 45 professors, postdocs, and industry scientists volunteer to participate. Using this list of scientists, a total of 50 students registered and identified their top three scientists to meet. We created student-scientist groups based on students' top preferences, pairing no more than three students per scientist. A total of 24 scientists were matched with the 50 students for an informal discussion. Thank you to Bas Rodenburg, Susanne Waiblinger, and Jen-Yun Chou for your support as we planned this event. It was a pleasure to work with you all!

Welcome to our new Student Representative for 2022-2023. Thank you to the three excellent candidates who applied to be the next Student Representative, and everyone who took time to vote in October and November. Warm welcome to Saskia Kliphuis who was elected to serve as the new ISAE Student Representative from 2022 - 2023! Saskia is a PhD candidate at Utrecht University studying early life innovations to improve welfare of laying hens in organic farming systems. We are excited to welcome Saskia to the ISAE Council!

Thank you to Laura. On behalf of the student membership of ISAE, I would like to thank Laura for her service to the organization. She has been a student representative for three Congresses, two of which have been held online - no easy feat to organize! During her time as student representative, Laura has helped organize networking events including graduate student mixers, *Eating with Ethologists*, and *Table Topics*. Additionally, Laura was a founding member of *Applying Ethology*, an online webinar series that connects applied ethologists from all over the world to discuss animal behavior and welfare science. Laura has been an exemplary ISAE representative and she will be dearly missed on the ISAE Council.

Student Resources. Consider checking out the Education and Resources section on the ISAE website! There is information about webinars, graduate study, time management, teaching, and more!

Laura Whalin and Rachel Park / Student Representatives of the ISAE (2019-2021; 2020-2022)

Membership

Thank you to everyone for renewing their ISAE membership. We currently have 506 ISAE members, which is down on the 649 members we had in June, as I have now removed all members that did not renew their membership. Details of members in each region and membership type can be found below:

Region	Members	Membership type	% of members
Australasia/Africa	50	Full	75
Benelux	36	Honorary	2
Canada	59	Retired	3
East Asia	18	Student	20
East Central Europe	13		
Latin America	30		
Mediterranean	29		
Nordic	57		
UK/Ireland	66		
USA	102		
West Central Europe	46		
TOTAL	506		

Gemma Charlton / Membership Secretary of the ISAE (2018-2022)

Finances

Treasurer's End-of-Year Report.

The report contains the annual summary for the period **January 1st to Nov 30th 2021**. The table now includes our Euro account activity. The account was started last year to reduce the impact of Brexit when paying for services or council members using the Euro. The discrepancies in the transfers in and out amounts reflect adjustments for exchange rate differences.

The accounts are very healthy, which reflects the limited financial activity in the last 18 months as a result of COVID-19. It also reflects the receipt of Purina sponsorship for scholarships to the annual conference (£10,668) and the income from the virtual congress (ISAE2021 - £24,283 + €1780). The Purina scholarships paid the registration fees for successful candidates. We also received a partial refund from the down payment provided for the cancelled ISAE2020 congress in India. The largest outgoing expense comes under 'Other' and refers to payment to ExOrdo to host our ISAE2021 virtual congress (\$10,450) and partial payment for expenses relating to ISAE2022 (\$5,000), as well as charges from STRIPE as part of the online payment system (£2,123). Other reasonably significant expenses were to Elsevier for Applied Animal Behaviour Science memberships and Wageningen for cancellation of publication services for the 2020 congress. Our

accounts for 2020 were prepared for the Office of the Scottish Charity Regulator (OSCR) and inspected and approved by the independent examiner ahead of our submission.

ISAE Accounts for period Jan 1st to Nov 30th 2021

Statement of Revenue and Expenses

Revenue:	GBP accounts	Euro account
Congress Income (ISAE2021)	24,283	1780
Membership subs	20,662	0.00
Net Interest	5.34	0.00
Payment returns	0.00	0.00
Returns from regions	4,980	0.00
Scholarship funds from sponsors	10,668	0.00
Other	0.00	0.00
Transfers in	62,000	23,395
Total Revenue	£ 122,598	€25,176
Expenses:		
Bank Charges	1,809	67.72
Conference Attendance Award	0.00	0.00
Conference Attendance Fund	0.00	0.00
Council Member Costs	230	0.00
Elsevier AABS	0.00	2,436
Membership services - Intergage	3,320	0.00
Regional Payments	0.00	0.00
SAGEPay	354	0.00
Scholarship funds awarded	0.00	0.00
Subs returns	0.00	0.00
Wageningen Press	0.00	2,250
Other	2,123	15,450
Transfers out	82,500	0.00
Total Expenses	£90,336	€20,204
Excess of Revenue over expenses	£32,261	€4,971
Beg Fund Balances	£55,211	€2,073
End Fund Balances	£110,423	€7,044

Emma Baxter / Treasurer of the ISAE (2017-2021)

ISAE Award Updates

In 2021, we received excellent nominations for the ISAE Awards. Thanks to everyone who participated in the called, also big thanks to the people who agreed to be part of the ISAE award committees. I would like to take the opportunity to invite members to take advantage of the awards and start to consider your nominations for 2022. Do not forget to get in touch if you are interested to be part of the 2022 ISAE award committees and remember that we are always open to suggestions on how to promote, improve or to add new ISAE awards.

If you missed the ISAE 2021 International Conference, let me introduce you the 2021 ISAE awardees:

Professor Christine Nicol received ISAE Honorary Fellowship in 2021

Biography of Professor Christine Nicol, written by Professor Mike Mendl



Professor Christine Nicol is, without doubt, a 'person of eminence in the field of the aims of the ISAE'. Over the three decades since completing her PhD, she has made outstanding contributions to research, teaching and application of research findings in animal welfare science. She also built a leading animal welfare research group at Bristol University, and has mentored over 25 PhD students and numerous research assistants and associates, many of whom have gone on to academic careers or animal-welfare related positions around the world, carrying her influence on the field far and wide.

Christine's work on the behaviour and welfare of chickens has helped to improve the lives of millions of birds. A seminal paper published in 1987 (1) provided evidence that hens do not acclimatise to restricted space, making a fundamental contribution to the case that battery cages could not satisfy their behavioural needs. Subsequent research on furnished cages demonstrated that nesting and perching areas could be well-used by the birds, and showed other welfare benefits (e.g. 2). Studies of the welfare of hens in non-cage systems identified management risk factors for problems such as injurious pecking and bone fractures, and investigated the impact of changes in stocking density and group size on bird welfare (e.g. 3). Findings from Christine's work helped to influence the UK government to sign up to the battery cage ban in January 2012 under the EU directive 1999/74/EC.

Christine has published important work in many other areas including the study of abnormal behaviour (e.g. 4), the development of novel and better indicators of animal welfare (e.g. 5), and cognitive and social learning capacities of chickens, horses and other farm animal species (e.g. 6). Her output has been prolific and influential – she has so far published over 190 papers in peer-reviewed journals and these have been cited 6502 times with an h-index of 48 (Scopus: 24/5/19).

On top of all this, she has managed to find time to write a textbook on her second favourite animal, the chicken (7) – horses come first!

Christine's contributions to animal welfare extend beyond research. Alongside her training of PhD students, she has taught many undergraduates including veterinary students, some of whom have been influenced by her teaching to change their original career aims and become prominent animal welfare researchers themselves. Through this educational work she has built a legacy of motivated and talented animal welfare scientists to populate the next generation of research leaders. She has also sat on many national and international committees advising on animal welfare research, funding, and policy, and has been a member of UK research council grant and strategy panels.

Christine's outstanding contributions have been recognised by many awards including the Prince Laurent Foundation Prize (2001 with Paul McGreevy), UFAW Medal for Outstanding Contribution to Animal Welfare Science (2012), European Association for Animal Production (EAAP) A.M. Leroy Fellowship Award (2016), British Veterinary Association (BVA) 50th Wooldridge Memorial Medal (2016), and invitations to give the ISAE Wood-Gush Memorial lecture (2016) and the ASAB Niko Tinbergen lecture (2017). Being made an Honorary Fellow of the ISAE is a fitting and prestigious addition to this list.

More information about Prof. Chistine Nicol work can be found [here](#).

Cited references

1. Nicol 1987. Behavioural responses of laying hens following a period of spatial restriction. *Animal Behaviour* 35, 1709-1719.
2. Appleby, Walker, Nicol, Lindberg, Friere, Hughes & Elson 2002. Development of furnished cages for laying hens. *British Poultry Science* 43, 489-500.
3. Green, Lewis, Kimpton & Nicol 2000. Cross-sectional study of the prevalence of feather pecking in laying hens in alternative systems and its associations with management and disease. *Veterinary Record* 147, 233-238.
4. McGreevy, French, Cripps, Green & Nicol 1995. Management factors associated with stereotypic and redirected behaviour in the thoroughbred horse. *Equine Veterinary Journal* 27, 86-91.
5. Nicol, Caplen, Edgar & Browne 2009. Associations between welfare indicators and environmental choice in laying hens. *Animal Behaviour* 78, 413-424.
6. Nicol & Pope 1996. The maternal feeding display of domestic hens is sensitive to perceived chick error. *Animal Behaviour* 52, 767-774.
7. Nicol 2015. *The Behavioural Biology of Chickens*. CABI: Wallingford.

ISAE Creativity Award



Prof. Daniel Weary

Animal Welfare Program
NSERC Industrial Research Chair in Animal Welfare
Faculty of Land and Food Systems
University of British Columbia

The recipient of the 2021 ISAE Creativity Award was Professor Daniel M. Weary. Dan's research represents a highly creative and successful attempt to assess and improve the welfare of farm and laboratory animals. He has published more than 300-refereed articles, and these have been cited almost 30,000 times, making Dan the most highly cited author in both animal welfare and applied animal behavior.

Dan is perhaps best known for his work on the development of novel methods for assessing pain and other negative affective states. This includes his pioneering empirical and theoretical work on the use of vocalizations as a reliable indicator of need, and the development and application of a range of behavioral, cognitive and motivational testing methods to assess pain and other negative affects. A number of his conceptual and methodological contributions are summarized in his paper entitled "Behavioural evidence of felt emotions: approaches, inferences and refinements."

It is one thing to detect negative affect, but quite another to tackle the thorny issue of how such affective states ultimately contribute to a diminished quality of life. Dan has provided the conceptual groundwork for how negative affect can lead to 'suffering' (the root of many public concerns about welfare), his work on the effects of providing animals agency, and his more recent theoretical work on Bayesian conceptions of animal welfare. Some of his conceptual work on animal welfare is summarized in the paper "Understanding the multiple conceptions of animal welfare."

Many welfare issues are the result of poor housing and management practices. Dan's work in this area has been characterized by his innovative approach to design, and the rich variety of outcomes addressed ranging from practical measures related to health and production through to novel predictions related to cognitive performance and affect. These features are illustrated in his work on housing for lactating sows, laboratory rodents and dairy cows and calves, as summarized for example in his paper "Understanding weaning distress".

Dan has been a pioneer in the use of behaviour (including especially automated measures) for the early detection and prediction of disease in animals (e.g., "Using behavior to predict and identify ill health in animals"). This work has focused on the use of changes in social behaviour

as early indicators of disease and has provided a basis for the rapid growth in research and development of commercially available equipment and algorithms for automated health assessments on farms.

Finally, Dan's work is among the first to combine experimental, quantitative work and qualitative methods including interviews, focus groups and online town halls to understand perspectives of animal caregivers and the public with regards to animal care (e.g., "Public concerns about dairy-cow welfare: how should the industry respond"). This work has motivated new research better targeted at perceived constraints and illustrates a new trend towards interdisciplinary research to address societal concerns. One recent example of Dan's innovative approach in this area is his new scientific research using facial expressions of human participants as an objective measure of their responses to procedures used on farm animals.

More information about Professor Dan Weary work can be found [here](#).

Selected relevant publications:

1. Weary, D.M., P. Droege, and V.A. Braithwaite. 2017. Behavioural evidence of felt emotions: approaches, inferences and refinements. *Adv. Stud. Behav.* 49:27-48.
2. Weary, D.M., J.A. Robbins. 2019. Understanding the multiple conceptions of animal welfare. *Anim. Welfare* 28:33-40.
3. Weary, D.M., Jasper, J., Hötzel, M. 2008. Understanding weaning distress. *Appl. Anim. Behav. Sci.* 110: 24-41.
4. Weary, D.M., J.M. Huzzey, and von Keyserlingk. 2009. Board Invited Review: Using behavior to predict and identify ill health in animals. *J. Anim. Sci.* 87:770-777.
5. Weary, D.M., and M.A.G. von Keyserlingk. 2017. Public concerns about dairy-cow welfare: how should the industry respond? *Anim. Prod. Sci.* 57:1201-1209.

ISAE New Investigator Award

In 2021, the New Investigator Award committee received nominations from candidates that completed their PhD studies less than 6 years ago, this was to accommodate that no nominations were accepted in 2020 due to the circumstances.

This year New Investigator Award was given to Dr Christian Nawroth. The award committee found that Dr Nawroth represented ethology not only through his work but also bringing attention to the field through his work in science communication, making him a more rounded scientist.

Christian's work focuses on how farm animals perceive and interact with their physical and social environment. To answer these



questions, he uses a highly interdisciplinary approach covering fields such as animal behaviour, comparative psychology, and animal welfare science.

His track-record indicates remarkable productivity, including 35 peer-reviewed paper to date. Much of this work is very recent but it is already well cited, evidence of his contribution to the field of farm animal cognition. His highly cited publications on the cognitive capacities of farm animals have helped motivate interest and new work on the use of psychological concepts in an animal-centred approach to improve husbandry and handling practices of farm animals. Notably, he was one of the first to show that pigs can use human-given cues, such as a pointing gesture, to locate food and that goats show human-directed behaviour when confronted with an unsolvable problem – with both topics been extensively studied in the light of how domestication impacted on animal behaviour and cognition in canids but have so far been rather neglected in other domestic species, such as farm animals. He also successfully applies a comparative approach in his research (e.g., by demonstrating that goats and sheep differ in certain cognitive capacities that are likely linked to their feeding ecology). He recently has summarised the current state of research in the field of farm animal cognition in a highly cited review paper.

In addition to his impressive record of research, Christian has an exemplary record of service to the field, serving on the Editorial Board of Animal Behavior and Cognition, Archives Animal Breeding, Frontiers in Psychology and Frontiers in Veterinary Science, and acting as co-editor of two highly topical Frontiers Research Topics (Farm Animal Cognition and Human-Animal Interactions). Christian also has an excellent record of service within ISAE, acting as Membership Secretary and Communications Officer. He is also an accomplished and innovative scientific communicator, as shown by his professional use of social media (including Twitter and other platforms, including his own blog), helping translate applied ethology research for the public. In addition to this public communication, he has helped to lead innovative efforts to improve communication within our academic society, as co-founder of the Slack workspace “Animal Welfare” with more than 700 members, and as co-organiser of the bi-weekly “Applying Ethology” webinar.

In the words of Prof. Daniel Weary and Dr Anna Olson: “we are most impressed with Christian’s rapidly developing record of innovative and interdisciplinary research, combined with his excellent track record of scientific achievements and community service”.

For more information about Dr Christian Nawroth work, please click [here](#).

Giuliana Miguel / Assistant Secretary of the ISAE (2019-2023)

Congress Updates

54th Congress, online, 2021

Due to the ongoing pandemic, we had to change to a full online congress instead of meeting in Bangalore, India, as was planned originally for 2020. However, thanks to the local Indian organizers and colleagues, Indian atmosphere was transported into our homes and offices via a beautiful Indian song during the opening, and Indian dance video during the closing ceremony, as well as by our Indian colleagues chairing sessions and presenting their research. In the opening we learned about the long tradition of considering animal welfare in India from Abdul Rahman, the chair of the local organising committee. The Wood-Gush Memorial lecture brought us virtually in the middle of the Indian jungle when listening and seeing the great talk of Ullas Karanth on tiger conservation. This was the prelude to a total of 106 oral presentations, 134 posters and 6 workshops under the main theme 'Developing animal behaviour and welfare: Real solutions for real problems'. A total of 400 participants were registered coming from 43 countries – which was reflected in the presentations spanning research from all our regions around the globe. And this huge number of presentations went quite smoothly, with only few technical problems.

Thank you to the organisers and stage managers making this congress a pleasurable and interesting experience. Special thank you also to our Indian colleagues that had worked so hard for preparing a congress in India. It would have been great to meet you all there! For this time, fortune was not with us, but next time, I am optimistic. Yes, we start planning for a 'next time' congress in India in the not so far future.

Future Congresses

55th Congress, Ohrid, North Macedonia, 2022



The next congress will take place from **4th – 8th September**. We are optimistic that it will indeed be an in-person meeting in Ohrid, but the final decision will be made in January. The main theme

of the congress 'Animal behaviour and beyond' and abstract submission will be open from 1st February to 15th of March.

As usual, there will be plenty of high-quality research presented, but I am sure, more than ever, everybody will enjoy the social events of a physical meeting including presentations to a live audience, drinking together during coffee breaks and for after-hours beers, enjoying the culture and nature of North Macedonia, and let's not forget the dinner and dancing. The organisers are preparing a fantastic program! Thus, travelling to Ohrid will be worth the effort – as long as it may take by whatever means of transport (see Mark's suggestion in the President's Piece). Nevertheless, to be more inclusive and offer participation for those who cannot or do not want to travel to the meeting, the meeting will be a **hybrid format**, offering the choice of full online-participation, where you can not only follow the meeting but participate in the discussion and present your research. Let's hope we can meet in Ohrid next year in one way or the other. Please visit the website www.isae2022.com for more information on the congress and the wonderful venue.

2023 and beyond

In 2023 we have another exiting venue to go to. The 56th Congress will take place in Tallin, Estonia in August 2023. The exact dates will be determined soon.

From **2024 onwards YOU have the chance to organise** one of the next ISAE congresses! Ok, it is work, but it is very rewarding as well. While we do have some expression of interest, nothing is fixed yet and it is good to consider it some years in advance. If you might be interested in hosting an ISAE congress in the future, just contact me (Susanne.Waiblinger@vetmeduni.ac.at) and I can give you more information.

Congress Attendance Fund

I would like to remind you that the ISAE has established a Congress Attendance Fund (CAF) to support the attendance of ISAE members at the annual congress. The amount of the fund will be no less than GBP 2000 and will be allocated to needy ISAE members to cover the Congress registration fee and potentially contribute to accommodation (but usually not travel expenses).

To be eligible, the applicant must be a member of the ISAE. The applicant must have submitted an abstract, and money will only be allocated if their presentation is accepted. Applications for funding will be reviewed by the CAF Committee and will be prioritized on the basis of financial need and quality of the abstract. Researchers and students from developing countries are especially encouraged to apply for this support. Please note that support from the CAF to any one person is limited to once in any 5-year period – if you have received funding in the last 5 years, please do not apply.

The application must contain all of the following information:

1. Name of applicant
2. Postal and email address (or fax number)
3. The year the applicant became a member of the ISAE
4. Status of applicant (e.g., student, active researcher, unemployed researcher, etc.)
5. A full justification explaining why the applicant should be given an award. There is no fixed format for this justification, as reasons will vary between applicants, but if no justification is given, the application will not be considered.
6. A budget for attending the Congress, including a statement of which part(s) is requested from ISAE and whether other funding is available to cover parts not funded by ISAE

The application itself must not be more than one A4 page. It must be accompanied by a short CV, including a list of publications and/or presentations by the applicant (including local and regional meetings) and a copy of the abstract submitted for the Congress.

Applications are due 15 March 2022 and should be sent to Susanne Waiblinger (Susanne.Waiblinger@vetmeduni.ac.at). Successful applicants will be notified immediately following acceptance of Congress abstracts. For more information, see the [Procedural Guidelines](#) on the ISAE website.

Susanne Waiblinger / Senior Vice President of the ISAE (2021-2023)

ISAE EDIA Committee Update

Following confirmation of the new standing committee of ISAE at the August AGM, members have already met twice to begin work on the list of tasks proposed by the ISAE Equity, Diversity, Inclusion, and Accessibility Taskforce, including but not limited to advising ISAE Council on ways to promote diversity and support equity and inclusiveness within the society, and bringing to the attention of ISAE members relevant literature and information related to equity, diversity, inclusiveness, and accessibility. The committee unanimously agreed to update the title of the group to include accessibility thus ensuring consideration of visible and invisible barriers members may experience in terms of accessing the society, both virtually and physically. We are looking forward to working on the first priority which is to develop an EDIA mission statement and guidelines for the ISAE with the aim of presenting drafts to council by the summer of 2022. The committee is composed of diverse membership with a short introduction to each member appearing below: https://www.applied-ethology.org/Committees_and_Experts.html

Dr. May Fujiwara is a postdoctoral research fellow at the Global Academy of Agriculture and Food Security at the University of Edinburgh (UK) and has been involved in the field of animal behaviour and welfare research for almost ten years in both the UK and Canada.

Dr. Alan McElligott is Associate Professor of Animal Behaviour and Welfare at the Jockey Club College of Veterinary Medicine and Life Sciences (City University of Hong Kong) and has contributed towards achievement of a silver Athena Swan (Equality) charter mark at Queen Mary University of London, delivered a talk on equality in science at the 2015 Brazilian Ethology Congress, volunteers for Diversity Role Models (UK charity), and is currently also a member of the EDIA committee for the Association for the Study of Animal Behaviour.

Dr. Arlene Garcia-Marquez is Assistant Professor of Behaviour and Welfare at the Texas Tech University School of Veterinary Medicine (US), who is a currently President Elect for the Latino Hispanic Faculty and Staff Committee at Texas Tech University, and a committee member of the American Society of Animal Science (ASAS) Diversity, Inclusion, and Equity Committee and the Cultural Competency Committee and the TTU School of Veterinary Medicine.

Dr Oluwaseun Serah Iyasere is a specialist in Animal Behaviour and Welfare and a Senior Lecturer in the Department of Animal Physiology at the Federal University of Agriculture, (Nigeria). She belongs to several professional bodies both at international and local levels including Universities Federation for Animal Welfare, International Society for Applied Ethology, Animal Welfare Research Network (UK) and World's Poultry Science Association (Nigerian Branch) and holds a number of roles including joint regional secretary of the Australasian-Africa ISAE region and the first secretary of the newly formed Africa and West Asia region.

Dr. Vijay Pal Singh is Assistant Professor at the CSIR-Institute of Genomics & Integrative Biology at the Academy of Scientific and Innovative Research in India and has 23 years of experience in Laboratory Animal Welfare and Science. Amongst many achievements he was presented the prestigious Global Animal Welfare Award Bronze Medal by the World Veterinary Association, and is a Member Expert on World Veterinary Associations Special Focus Group in animal welfare, is the regional Secretary of ISAE, a technical expert World Health Organisation, and a regional resource for the World Organisation for Animal Health (OIE).

Linda Greening is a senior lecturer and Head of Inclusivity at Hartpury University. With 15 years of teaching and research experience in the field of animal behaviour and welfare, her current focus is on equine nocturnal behaviour. She is a member of the International Society for Applied Ethology, Animal Welfare Research Network (UK), and the International Society for Equitation Science. She has spoken at a number of national and international events about diversity and inclusivity, specifically within the land-based sector, and currently also chairs a committee of thirteen UK Higher Education providers working on a collaborative community facing outreach project, as well as both the Race Equity and Inclusive Teaching and Learning Task Groups at Hartpury.

Linda Greening / *Chair of ISAE EDI Committee (2021-2027)*

Development

In March 2021, we launched the call for the third Developing Countries Congress Attendance Fellowship (DCCAF), for qualified applicants from developing countries to attend the Annual Congresses of the International Society for Applied Ethology in 2021. We received 43 applications. The evaluation of the applications was made by 11 invited reviewers, in addition to the Development and Assistant Development officers. Due to the virtual format of this year's Congress and the high quality of the applications, we decided to award more DCCAF candidates than in the previous in-person congresses. Thirty-six successful candidates were selected as this year's DCCAF. They were from Argentina, Bangladesh, Brazil, Colombia, India, Iran, Italy (working in Estonia), Kenya, Malaysia, Nigeria, South Africa, Taiwan, Uganda and Zimbabwe.

In order to support scientists from/working in developing regions to attend the Congress, participate in stimulating discussions in applied ethology, and promote diversity and inclusiveness, we also provided the opportunity for other 3 eligible DCCAF applicants to opt-in to receive full financial support to register for the Congress.

As part of the award, we organized a two-day pre-congress workshop, virtual farm tours and other activities for our DCCAF awardees. The workshop was made via Zoom, and the talks covered topics including: introduction to animal welfare; study of applied animal behavior and animal welfare; animal health and animal welfare; sustainability and one welfare; and focus on South Asia: what are the topics under the spotlight. At the end of each talk, there was a breakout room activity, where DCCAF awardees discussed in small groups questions related to the topic of the talk, and then they were rejoined with the speaker and shared their answers with all group.

In order to allow the participants to be in contact with the organizers, speakers, and also ISAE council members at any time, we also created a Discord Channel with sub-channels for different topics. We dedicated specific channels where they had access to different virtual farm tours. Two of them were made especially for this project, so they were able to know a dairy farm production system in India, and a pig research unit in Vienna.

At the end of the congress, we distributed a survey to understand the impact of this activity on the awardees. In total we received 27 responses whose countries of residence corresponded to the proportion of distributions among the awardees. Seventeen (out of 18) respondents who are not currently an ISAE member would consider applying for ISAE membership after participating in this year's DCCAF activities and ISAE congress. All respondents gave a positive overall rating to the experience of their ISAE participation during the congress this year. The majority of the awardees expressed that the OPP award enables them to attend the ISAE events (23 out of 27, 85.2%), this year's OPP funding was adequate (21 out of 27, 77.8%), and the application process was reasonable (26 out of 27, 96.3%). All respondents unanimously agreed that their understanding of farm animal welfare was improved after the ISAE event, the OPP award is essential to improve farm animal welfare awareness in my region, they would be interested in

applying for future OPP awards, and they would use the information gained in their future work. Most of them have made some new contacts over this year's event, but still some feel not so strongly. Ten respondents felt the lack of social interactions in virtual meetings was the biggest drawback and look forward to the opportunity to have in-person meetings in the future. Other suggestions include providing subtitles in talks to help with language barriers, internet connection issues and the ease-to-use of the online platform used. Almost all awardees participated to some extent the pre-congress workshop especially designed for them, and most of them found it useful (23 out of 27, 88.5%). Many respondents said they liked the contents and the interactive elements of the discussion, but still some found it difficult to talk under this virtual setting and due to the time we had, we couldn't allow everyone said more about what they work on to let them know each other better. In terms of the ISAE congress itself, all respondents found the quality up to a very high standard, the other delegates were welcoming and friendly, and themselves very willing to recommend attending an ISAE conference to a colleague. The Discord forum was used by 18 out of 27 respondents (66.7%) and 17 of them found it useful. Some expressed the difficulty in navigating the platform, use of too much data allowance they have, and too many platforms in general during the congress so hard to keep track. Seventeen respondents said they watched one or both virtual farm videos and found them interesting. Few felt the lengths were too long, and it would be better to have subtitles, or they would still prefer the in-person farm tours.

In addition to the 2021 DCCAF, the Open Philanthropy Project (OPP) funding allowed us to support the online platform transmission and a registration waiver to 50 graduate and undergraduate students from Argentina, Brazil, Colombia Mexico and Uruguay to participate in the 38th Annual Ethology Meeting (EAE), and the III Meeting of Behavioural Biology of the Southern Cone (RBC) that was held online from 11th to 13th of November, 2021. The meeting was organized by the Brazilian Society of Ethology (Sbet), in Brazil.

We would like to thank OPP for the funding, the reviewers who helped us evaluate the applications, all the speakers for giving us great talks in the pre-congress workshop, and the people who helped us during the pre-congress workshop (country liaisons and the communicator officer of ISAE) and with making the videos for the virtual farm tours. We are happy to have received generally positive responses from the 2021 DCCAF awardees and also thankful for their feedback to help us improve the future activities. We look forward to organizing hybrid/in-person DCCAF activities for the 2022 ISAE congress in Ohrid, North Macedonia, so that we can have more interaction and engagement from our DCCAF awardees!

Maria Camila Ceballos / Development Officer of the ISAE (2020-2024)
Jen-Yun Chou / Assistant Development Officer of the ISAE (2020-2022)

Regional Updates

Planned changes to the ISAE Regions

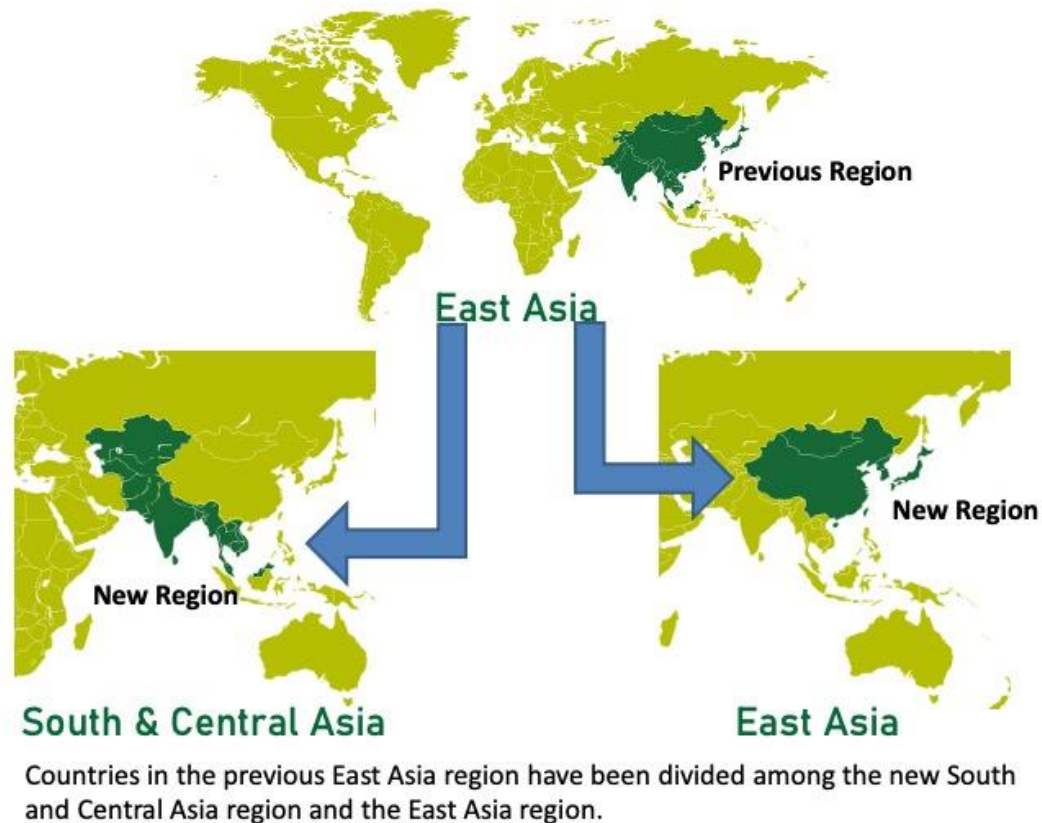
ISAE regions experienced a bit of an overhaul in 2021 to accommodate growing interest in applied ethology in several areas of the world and to better represent diverse geographic regions.

The Australasia-Africa region has been divided into two new regions to better represent the growing membership and three continents formerly encompassed within a single region. The new Africa and West Asia region covers the African continent and extends through the Arabian Peninsula to Turkey. The new Oceania region includes Australia, New Zealand, Melanesia, Micronesia, and a bit of South-eastern Asia. Dr. Oluwaseun Iyasere is the regional secretary for Africa and West Asia, and Dr. Danila Marini is the regional secretary for Oceania.



Countries in the previous Australasia-Africa region have been divided among the new Africa and West Asia region and the Oceania region. Turkey has also been added to the Africa region.

The East Asia region has been divided into two regions: 1) South and Central Asia and 2) East Asia. Dr. Sumita Sugnaseelan (Malaysia) and Dr. Vijay Pal Singh (India) are the recently elected regional secretaries for the new South and Central Asia Region. Welcome, Sumita and Vijay! Dr. Shigeru Ninomiya remains in his post as the regional secretary for the East Asia Region, but an election is underway! Please stay tuned to learn who is elected.



The Mediterranean and Eastern Central Europe Regions were rearranged into Southwest Europe and East and South Europe regions to more logically group countries together. Turkey has joined the Africa and West Asia region. Dr. Emma Fabrega and Dr. Daniela Alberghini are the regional secretaries for the Southwest Europe region, and Dr. Radka Šárová is the regional secretary for the East and South Europe region, which is the region hosting our 2022 international congress.

Janice Siegford / Junior Vice-President of the ISAE (2021-2023)

Australasia-Africa.

The Australasia-Africa region has a new website (austafricaisae.wixsite.com/website). Please visit the site for information about the region and to keep up to date on regional news.

The regional conference was held virtually 1-2 December, 2021. The theme of the conference was: Bridging the gap between research and application. There were many great talks! The list of talks and speakers can be viewed at the following link (<https://austafricaisae.wixsite.com/website/news>).

Oluwaseun Iyasere / *Regional Secretary for Australasia-Africa*

East Asia.

An online meeting of the Japanese Society for Animal Behaviour and Management and one symposium on animal welfare was held on September 9-10, 2021. Most Japanese ISAE members joined this meeting. Nominations from candidates interested in becoming a new East Asia regional secretary were recently solicited, and one qualified candidate has been nominated. Members have been asked to provide the outgoing secretary, Dr. Shigeru Ninomiya (nino38@gifu-u.ac.jp) with their assessment of the nominee's suitability.

Shigeru Ninomiya / *Regional Secretary for East Asia*

Latin America.

From the 11th to 13th of November, ISAE supported the 38th Encontro Anual de Etologia/38th Annual Ethology Meeting (EAE), that in 2021 consisted of a joint meeting with the III Reunião de Biologia do Comportamento do Cone Sul/III Meeting of Behavioural Biology of the Southern Cone (RBC), promoted by the Sociedade Brasileira de Etologia/Brazilian Society of Ethology (Sbet). The 2021 online event had as its theme Ethology in a world in transformation. The event hosted 470 participants from Brazil, Argentina, Uruguay, Chile, Colombia, Spain, Mexico, Panama and Paraguay as well as speakers from other different parts of the globe. The ISAE President Dr. Mark Rutter gave the first plenary talk and spoke about the past, present and future of automatic recording of domestic ruminant behaviour. The Brazilian Latin America Regional Secretary, Dr. Maria Jose Hötzel addressed weaning in calves in a joint Symposium with participants from Uruguay, Brazil and Mexico. ISAE's partnership (through ISAE Development) with Sbet, EAE and the Open Philanthropy Project (OPP) provided sponsorship for the transmission of the online platform as well as 50 subscriptions for undergraduate and graduate students to attend. The 39th EAE will be hosted in Curitiba, PR, Brazil in 2022 and the theme will be Ethology in Dialogue with Society. Stay tuned for future announcements!

Maria Jose Hötzel and Ariel Tarazona / *Regional Secretaries for Latin America*

Southwest Europe.

The Southwest Europe region will hold a zoom meeting where all members are invited to discuss planning for a future Regional Meeting. This planning meeting will occur either right before or after the Christmas holiday, depending on member availability. The Southwest Europe Regional Meeting would be scheduled for early July 2022 and hosted by the Universitat Autònoma de Barcelona (Spain), in a hybrid format. The regional meeting is planned to be held as a joint meeting with the CIBA Network (Red Científica de Bienestar Animal, Spain).

Emma Fàbrega and Daniela Alberghina / *Regional Secretaries for Southwest Europe*

West Central Europe.

This year's 53rd International Congress on Applied Ethology organised by the German Veterinary Society was held online on November 25th-26th 2021. The keynote lecture addressed behavioural and health aspects of keel bone fractures in laying hens.

In the time slot for PhD students organised by the regional ISAE that has been part of the conference for a number of years, a total of eight PhD students gave two and a half minute presentations on their projects, informing congress participants about newly started and ongoing projects.

During the congress, we also met for a virtual annual general meeting of the West Central Europe ISAE Region.

Antonia Patt / *Regional Secretary for West Central Europe*

UK and Ireland.

We are delighted to inform you that the UK & Ireland Regional Meeting 2022 will be taking place in Edinburgh (at the Edinburgh Training and Conference Venue) on 30 June. We are honoured to have Prof. Francoise Wemelsfelder joining us as a keynote speaker. In addition to the ISAE conference we will be co-hosting a UFAW/ISAE workshop on the topic "Improving Study Design in Animal Welfare Research", led by Prof. Melissa Bateson. This will be on the afternoon of 29th June, and for ISAE meeting attendees will incur an additional cost of approx. £40. If anyone would like to volunteer to help with conference organisation or reviewing abstracts please email Ellen and Keelin on ewilliams@harper-adams.ac.uk and Keelin.ODriscoll@teagasc.ie. Registration and abstract submission details will follow soon so keep an eye on your inboxes!

Keelin O'Driscoll and Ellen Williams / *Regional Secretaries for UK and Ireland*

USA & Canada.

14th North American Regional Meeting of ISAE

We are pleased to announce the abstract submission for the 14th North American Regional Meeting of ISAE is open! The meeting will take place April 29-30, 2022 at UC Davis. This regional meeting will be in-person, with an option for virtual viewing of oral presentations via Zoom (reduced registration fee). All attendees must be fully vaccinated, wear masks while indoors, and complete a daily symptom survey as campus visitors. This meeting will adhere to the COVID safety guidelines for visitors to UC Davis (<https://campusready.ucdavis.edu/visitors>). This is a great opportunity for our undergraduate and graduate students in North America to present their research and network with fellow scholars of applied animal behavior. Registration will include attending all poster and oral presentations, lunches and coffee breaks, a banquet dinner Friday evening, and a reception Saturday afternoon. We look forward to enjoying spring in California with you all! Questions about the meeting can be sent to the US regional secretary, Tina Horback (kmhorback@ucdavis.edu).

Abstracts can be submitted to ISAENA2022@gmail.com and will be due January 14, 2022 (see attachment). Presenters will be notified of decisions by February 14, 2022. All presenters must register by the early-bird deadline of March 4, 2022. Registration links, lodging information, and instructions for oral and poster presentations will be posted to the conference website (<http://animalwelfare.ucdavis.edu/14th-na-isae.html>).

Kristina Horback / Regional Secretary for USA

Other News

EU Platform on Animal Welfare

As mentioned in the Newsletter 58 from July 2021, the EU Animal Welfare Platform has a new mandate for four years and a new composition. On November 9th the Platform met in the new composition. ISAE unfortunately was not allowed to apply again as a member, given that we are UK-based. Fortunately, several EU-based ISAE members were selected as Platform members for the ten available seats for independent experts. This means that ISAE will remain informed regarding the Platform's activities.

New working groups have been proposed and they will be formed at the beginning of 2022. The new working groups are calves and dairy cows, poultry, pigs, slaughter, transport and labelling II. These groups will contribute to the revision of the EU welfare legislation and the process will be streamlined with the fitness check and the EFSA reports.

Apart from the working groups established by the commission, voluntary working groups can be proposed by the members of the platform. Several of the voluntary working groups from the previous mandate will continue their activities. New topics for voluntary working groups can be

World Congress on Genetics Applied to Livestock Production (WCGALP)

The World Congress on Genetics Applied to Livestock Production (WCGALP), to be held in July 2022 in Rotterdam, the Netherlands, will organise a session animal breeding and animal welfare, entitled “Contributions of animal breeding to animal welfare”. Paper submission is open and closes on 12 January 2022 (<https://wcalp.com/call-for-papers>). We would like to invite you to consider submitting your papers to this session. We welcome papers on the following topics:

What can animal breeders and welfare researchers learn from each other?

- Emerging evidence about candidate traits for welfare problems e.g. piling behaviour in hens
- Emerging evidence about candidate traits for welfare solutions e.g. improved resilience of animals in novel housing systems
- Breeders’ perspectives on animal welfare

Opportunities in animal breeding to remove the need for invasive procedures (or husbandry practices)

- Examples include removing the need for tail docking, dehorning, beak trimming or mulesing
- By selecting directly for physical conformation that mirrors the effect of procedure e.g. blunter beaks, no horns
- By selecting for behaviour/physiology that reduces need for procedure e.g. reduced tendency to peck, greater resistance to fly strike

Improving the welfare of animals (including fish) kept in cage-free systems

- Selecting animals that form positive social relations (e.g. stable affiliations, tolerant social responses, social buffering)
- Selecting animals (including fish) that show resilient responses to complex social challenges including varying group sizes, mixing and differences in housing systems
- Selecting animals that make good use of positive resources (e.g. outdoor range use)

Opportunities for genetic improvement of animal welfare from new phenotypes

- Individual activity monitoring as a tool to breed for better health and welfare
- Automatic tracking of specific behaviours with positive or negative welfare consequences (examples: tail biting, aggression, feather pecking, smothering, foraging, exploration, dustbathing)
- Preferably approaches where there is a clear link with breeding (genetic parameters have been estimated, considering welfare in breeding goals, indirect genetic effects models)

Please contact Prof. Christine Nicol (Royal Veterinary College), Prof. Susanne Hermesch (Univ of New England), or Prof. T. Bas Rodenburg (Utrecht Univ & Wageningen Univ) if you have further questions.

Animal Welfare Judging and Assessment Contest

The 21st Annual American Veterinary Medical Association (AVMA) Animal Welfare Judging and Assessment Contest (AWJAC) was held virtually from November 19-21, 2021. A record number of participants joined to assess scenarios for boar studs, cats in a research setting, and pet psittacines. There were 269 participants from 28 universities and 8 countries. There were divisions for undergraduates, graduate students, and veterinary students, as well as veterinary technicians and AVMA member veterinarians and international veterinarians.

As part of the competition, participants prepare for months, reviewing literature related to the scenario species and practicing critical thinking and communication skills. At the contest, participants review the scenarios and have a short amount of time to prepare their reasons that must include their overall assessment of the facilities presented in the scenarios, their top welfare concerns while making their assessments, grants for each facility on what they did well on, recommendations for improvements, and must include citations to support their assessment. The individual presentations must be no more than 3 minutes and team presentations must be between 8-10 minutes in length.

As a past competitor and coach, I can attest that it is a challenging but very rewarding experiencing. This year I was able to participate as a judge, which was much less stressful, but just as fun. All the participants did a wonderful job and it was great seeing so many people so enthusiastic about welfare assessment.

To see the list of winners, visit the [AWJAC press release](#).

To learn more about the Animal Welfare Assessment Contest, visit [AWJAC.org](#).

Carly O'Malley / Secretary of the ISAE (2021-2025)

Elsevier Award Subscriptions – Call for Applications

Some of our members may not have access to our Society's journal *Applied Animal Behaviour Science* (AABS) either via an employer's subscription nor by paying for an the individual subscription, even with reduced rates for members. This may be especially true for members in [low to middle income countries](#). To support access to AABS for these members, Elsevier is offering up to **ten free online subscriptions to AABS** for one year, which will be awarded by the ISAE council. If you are interested in receiving a free one-year subscription to AABS, please send a short application (including your name, address, the year you became a member and a short statement of why you should be awarded) to info@applied.ethology.org by 24th January 2022.

2021 AAALAC International Annual Report – Abbreviated Text

From the Chief Executive Officer

Leaning Forward

*“The horizon leans forward, offering you space to place new steps of change.”
—Maya Angelou, “On the Pulse of Morning”*

Last fall I reported to you that AAALAC International (AAALAC) focused on turning diverse challenges resulting from the COVID-19 pandemic into opportunities for our organization. I described the significant pivot in the conduct of AAALAC’s operations, utilizing innovation, communication and collaboration to ensure fulfillment of our mission continued at the same level of excellence. Since that time, the horizon has “leaned forward” offering spaces to “place new steps of change,” as Maya Angelou has written. AAALAC has used this unprecedented time to review the processes that have served the organization well for many years, those that were implemented during the height of the pandemic and may merit retention, as well as potential new processes that foster adaptation to our constantly evolving animal research environment. Thus, while our core purpose of promoting the welfare and responsible care and use of research animals worldwide remains unchanged, AAALAC continues to evolve to meet the demands of our changing environment.

The Council on Accreditation and Council Member Emeriti, supported by the ad hoc Consultants/Specialists, have been *truly remarkable* in their ongoing conduct of animal care and use program assessments on behalf of AAALAC. They have accomplished this under continually changing circumstances, manifesting true professionalism and compassion the entire time. Very evident is their commitment to the animals used in science as well as the institutions participating in the accreditation program. Likewise, AAALAC’s accredited programs have been innovative and flexible to accommodate on-site assessments and, on many occasions, virtual meetings with the AAALAC representatives. These reciprocal adjustments have resulted in the maintenance of high-quality reviews during unprecedented times.

Moving Forward Strategically

As AAALAC leans forward toward the next horizon, framing actions and approaches through strategic planning becomes more critical. In February 2021 the Board of Directors, at the recommendation of AAALAC’s Planning Committee, determined that the 2014 strategic plan was complete, thereby opening up consideration of initiating a new strategic planning process. To that end, a Request for Proposal for strategic planning facilitators was developed and issued. Numerous proposals were received and reviewed by the Planning Committee. The facilitator selected by the Board of Directors will be provided the data resulting from the 2020 survey EurekaFacts conducted on AAALAC’s behalf. In addition, in July 2021 a “Forward Thinking” survey was distributed to the Council on Accreditation and Council Emeriti seeking input on how the accreditation program’s procedures might be enhanced to address the changing environment in which AAALAC’s site visitors function. The results of this survey will also be used to inform the

upcoming strategic planning process. AAALAC's previous Strategic Plans have led to new initiatives and have been impactful on the scope and direction of our activities and processes. No doubt the next strategic plan will establish a framework that fosters success and positively shapes AAALAC's future.

Governance and Trusteeship

Board Chair, Dr. Robert H. Weichbrod, convened two ad hoc committees to address topics that emerged from the Board Retreat held in December 2020: the "Governance and Stewardship Committee," and the "Board of Directors Roles and Responsibility Committee." AAALAC has been operating under its new governance system for five years, and the role of the Board of Directors has been evolving since that time. Thus, an assessment of the Board's composition, roles, and responsibilities was timely. The review by these two committees clearly underscored that the necessary expertise to govern AAALAC is abundantly available from the Member Organization Delegates who are elected to serve on the Board. In addition, the committees developed several new tools and processes to add clarity to the roles of members of the Board, assist in identifying future Board members, and further enhance Board performance.

AAALAC International Operations

The seamless and successful shift to a full-time telework platform for the staff based in the Executive Office during 2020 led to a more permanent adoption of a hybrid work schedule (telework and in-person) when the office reopened in early June 2021. As AAALAC "leans forward" into the continuing growth and complexity of our global operations, the need to augment staffing became increasingly evident. I am pleased to convey that AAALAC International has added the position of Chief Financial Officer, filled by Mr. Dustin Mulhollen. In addition, AAALAC welcomed Ms. Deborah Gohegan as Assistant Director, joining Ms. Sandy Dexter in that role, and Ms. Darlene Brown became Director of Special Projects. These strategic staffing actions position AAALAC to better serve our constituents and to better leverage future opportunities.

Expanding the horizon

AAALAC International shares with the agricultural animal science community an interest in the welfare of animals used in agricultural research, and has long considered accreditation of institutions conducting agricultural animal research an essential component of its mission. The Council on Accreditation has initiated several new activities to augment AAALAC's connection to agricultural animal research. These include consideration of Reference Resources appropriate for a production environment, enhancing communication with farm managers, adding expertise to both the Council and ad hoc Consultant/Specialist roster (and exploring the possibility of an agricultural animal specific Council Section), and enhancing training of Council and ad hoc Consultants/Specialists. Additionally, the Council on Accreditation is considering the adoption of the fourth edition of the *Guide for the Care and Use of Agricultural Animals in Research and Teaching (Ag Guide, FASS 2020)*.

AAALAC is honored to welcome four new Member Organizations and their Delegates. They are the Chinese-Taipei Society of Laboratory Animal Science (CSLAS), the Federation of South American Societies for Laboratory Animal Science (FESSACAL), the Federation of Hispanic North American, Central American and Caribbean Societies and Associations for Laboratory Animal Science (FeSAHANCCCAL), and the Laboratory Animal Scientists' Association (LASA) India. We look forward to the expansion of AAALAC's horizon through the perspectives and input these organizations will bring to our mission.

Elsewhere in this annual report you will read about "new steps of change," AAALAC's engagement with colleagues throughout the world, the first accredited institution in Colombia, consideration of scientific reproducibility in the accreditation process, and other milestones achieved in the last year. All of these accomplishments would not have been possible, particularly during such challenging times, without the generosity of our many volunteers and the talented AAALAC International staff. My appreciation to all of them is sincere and profound.

Kathryn Bayne, M.S., Ph.D., D.V.M., DACLAM, DACAW, CAAB
Chief Executive Officer

More than 1,050 programs in 50 countries participate in the AAALAC International accreditation program

Since last year's Annual Meeting 40 new applicants have been awarded accreditation. Twenty-seven of these new institutions are located in countries other than the United States.

Council on Accreditation Update

The Council on Accreditation continues to implement the accreditation program in a skillful and thoughtful manner across diverse regulatory and cultural environments with due regard for ensuring consistency in the assessments of animal care and use programs. Since the 2020 Annual Meeting of AAALAC's Member Organization Delegates, the Council conducted 273 site visits in 16 countries. Council is currently comprised of 73 members from 16 countries, and Council members are assisted in conducting site visits by 404 individuals from 35 countries who serve as ad hoc Consultants/Specialists or are former members of the Council.

While the COVID-19 pandemic continued to present significant challenges, the Council on Accreditation and Council Emeritus members, assisted by the ad hoc members, successfully performed hundreds of site visits throughout the world. The health and safety of these talented individuals remained a priority, and the continued use of videoconferencing for select aspects of the site visit permitted meaningful discussions to take place. Importantly, the on-site assessment of accredited programs ensured a thorough review, and information from these facility walk-throughs, coupled with the virtual discussions has become a routine method for site visits.

Additional highlights include:

- A Council Committee is currently reviewing the lessons learned from site visits conducted during the pandemic and will be providing recommendations to optimize the site visit process going forward.
- The Committee on Scientific Reproducibility has developed an FAQ on scientific rigor and experimental reproducibility.
- The 6th Edition of the *Biosafety in Microbiological and Biomedical Laboratories* (BMBL) has been adopted as an AAALAC International Reference Resource, replacing the 5th Edition.
- The North American Council Section welcomed three new members; the European Council Section welcomed one new member; and the Pacific Rim Council Section welcomed three new members.
- Three Council members have been selected to serve on the Institute for Laboratory Animal Research's (ILAR) standing committee to advise on updating the *Guide for the Care and Use of Laboratory Animals*, an AAALAC primary standard.

AAALAC International in the Pacific Rim

AAALAC International accreditation is well accepted as a symbol of quality in the Pacific Rim region. Currently, there are 221 accredited institutions located in 12 Pacific Rim countries.

While COVID-19 travel restrictions continue to impact accreditation activities, a total of 57 site visits were conducted. Three new Council members were added to the Pacific Rim. Council Section, broadening the geographic diversity and language abilities of Council. The increase in membership will help address the expanding workload shouldered by these dedicated volunteers.

AAALAC International in Europe

The 2021 AAALAC International European Conference, entitled "Programme Challenges, Expectations & Innovations," was conducted virtually in June and holds the distinction of being the most-attended AAALAC event to date, with more than 1,200 registrants from 58 countries, and an average attendance of 700 participants. The feedback was very positive, evidenced by the many comments received after the event.

Accreditation activities have continued in spite of the pandemic. The hybrid site visit procedure has now been used many times, has proven to be a very effective means of conducting site visits, and has been appreciated by the institutions. Six new programs have obtained accreditation in Europe in the past year. The total number of European accredited programs remains 117 in 20 countries including Israel, despite some site closures and corporate restructuring. A majority of accredited programs are pharmaceutical companies and contract research organizations, but growth is also observed in academia, breeders, and public institutions.

AAALAC International in Latin America Welcomes Colombia

AAALAC was very pleased to welcome a newly accredited program in Colombia, the first in this country. It is important to note that this program is an academic institution, another example of

high-quality animal care in South America. The number of accredited programs in Latin America are: four in Brazil, and one each in Barbados, Chile, Costa Rica, Federation of St. Kitts & Nevis, Mexico, Peru and Colombia. AAALAC was also well represented at Expobioterios Virtual, a meeting attended by professionals from all Latin American countries, the United States, and some European countries.

AAALAC International in Africa and the Middle East

Site visits in Africa and the Middle East were postponed due to travel restrictions and the number and distribution of accredited programs in the area remains the same, with five accredited programs in Mauritius (nonhuman primate breeders), three in Israel, two in Egypt, two in Turkey and one each in Kenya, South Africa, and the United Arab Emirates. Other interested institutions have been in contact with AAALAC, especially in the Middle East, where there is a growing interest due to the development of new research projects.

After a long process, the *Guide for the Care and Use of Laboratory Animals* has been translated into Arabic and the document will be made available to the regional community.

Financial Report

AAALAC International hired Chief Financial Officer, Mr. Dustin Mulhollen in April. This addition to the Finance Department has grown AAALAC's ability to evaluate financial and business indicators, interpret meaningful themes from quantitative and qualitative data, and translate the data into actionable information. Despite recent economic volatility, AAALAC International remains financially stable and positioned for future growth.

Education and Outreach

AAALAC International's Education and Outreach activities continue to keep pace with the ever changing horizon. Along with the first virtual AAALAC International European Conference, an additional 30 presentations were given in 10 countries, either in-person or virtually. Six new or revised presentations were added to the AAALAC International public website and five to the newly updated Unit Login section for accredited programs. The Education menu has become one of the most accessed areas of AAALAC's public website. Since April 2020, visits to the training materials on the public website increased 82% compared to a similar time period pre-pandemic.

Our mission of enhancing the quality of research, teaching, testing and production by promoting humane and responsible animal care and use remains strong.

Program Status Evaluations (PSE)

The PSE is a service offered by AAALAC International (AAALAC) to companies, universities, hospitals and other research facilities around the world who have never participated in the

accreditation program. It is similar to an AAALAC site visit in that it is a completely confidential peer review that helps assess the quality of all aspects of an animal care and use program. The objectives of the PSE service are twofold. First, the PSE assists the institution in determining if the animal care and use program meets AAALAC standards by identifying strengths and weaknesses and suggesting ways to improve or correct program deficiencies. Second, the PSE familiarizes the institution with the AAALAC accreditation process and encourages the institution to participate. Since the inception of the service in 1997, 57 PSEs have been conducted in 13 countries. More information is available at <https://www.aaalac.org/pre-accreditation-evaluations/the-pse-program/>.

2021 Award Winners

GLOBAL 3RS WINNER

In partnership with the International Consortium of Innovation & Quality in Pharmaceutical Development (IQ Consortium), AAALAC International was honored to confer the 2020 Global 3Rs Award on one recipient and one honorable mention. The IQ Consortium/AAALAC International Global 3Rs Awards program recognizes significant innovative contributions toward the 3Rs of animal research to advance ethical science by researchers in academia or industry in any area of biology. Up to four global awards (North America, Europe, Pacific Rim, and the Rest of the World) of \$5,000 each may be presented each year. Please join us in congratulating...

Maria Karlgren, Ph.D.

"A CRISPR-Cas9 Generated MDCK Cell Line Expressing Human MDR1 without Endogenous Canine MDR1 (cABCB1): An Improved Tool for Drug Efflux Studies, *Journal of Pharmaceutical Sciences*, 2017. Department of Pharmacy, Uppsala University, Uppsala, Sweden.

Honorable Mention

Sara Gago, Ph.D.

"Lung colonization by *Aspergillus fumigatus* is controlled by ZNF77," *Nature Communications*, 2018. This publication identified ZNF77 as a key controller of *Aspergillus* colonization and suggest its utility as a risk-marker for patient stratification. School of Biological Sciences, Faculty of Biology, Medicine and Health, The University of Manchester, United Kingdom.

AAALAC INTERNATIONAL DELEGATE SERVICE AWARD WINNERS

The Delegate Service Award is a new and important awards program that recognizes individuals who have made long-standing and impactful contributions to AAALAC International through dedicated service as a Member Organization Delegate. Their contributions have promoted AAALAC International's accreditation mission and demonstrated a strong and abiding

commitment to advocating high-quality research animal welfare. On the strengths of the nominations received, please join us in congratulating these recipients of the 2021 AAALAC International Delegate Service Award:

**Nancy Ator
Gretchen Myers Hill
Gail Thompson**

AAALAC INTERNATIONAL BENNETT J. COHEN AWARD

Named in honor of the late Bennett J. Cohen, the AAALAC International Bennett J. Cohen Award recognizes outstanding individuals who have, through their exceptional service and significant contributions to AAALAC International, demonstrated a strong and abiding commitment to advancing science through promotion of the highest standards of laboratory animal care in research, testing, and education. Please join us in congratulating these recipients of the 2021 AAALAC International Bennett J. Cohen Award:

**James G. Fox
Hilton J. Klein**

THE AAALAC INTERNATIONAL CHAIR AWARD

Presented each year, the AAALAC International Chair Award recognizes those who have served as Chair of AAALAC's Board of Directors. Please join us in thanking Dr. Weichbrod for his service!

Robert H. Weichbrod

For more information on the Global 3Rs Awards please visit:

<https://www.aaalac.org/awards/global-3rs-awards/>

For more information on the AAALAC Cohen Award please visit:

<https://www.aaalac.org/awards/cohen-award-winners/>

For more information on the AAALAC Fellowship Award (to resume in 2022):

www.aaalac.org/awards/fellowship-award/

Report provided by ISAE AAALAC Delegate: Brianna Gaskill, Ph.D.

Employment and Education Opportunities

Some current [employment and education opportunities](#) related to applied ethology include:

- Lecturer, UK (deadline January 3)
- Research Technician (2x), Canada
- Researcher, Spain (deadline January 13)
- Behavior Specialist, USA
- Research Fellow, USA
- Training Liaison, USA
- Postdoc, USA
- Several positions, USA
- SciComm Officer, UK
- PhD position, Ireland (deadline January 21)
- MSc position, Canada

For details on how to apply and for the most up-to-date information on employment and education opportunities, visit the [ISAE website](#) and follow us on social media:

- **Facebook:** www.facebook.com/appliedethology
- **Twitter:** [@appliedethology](https://twitter.com/appliedethology)

To advertise a position: send the job title, location, contact email address, application deadline, and a URL and/or a pdf flyer to info@applied-ethology.org. Listings are updated bi-weekly and will be removed 3 months after the posting date if no closing date is given.

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