

WOAH Collaborative Centre Reports Activities 2023

Activities in 2023

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Centre Information

Title of WOA Collaborating Centre	WOAH Collaborating Centre for Animal Welfare and Bioethical Analysis, the David Bayvel Consortium
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Name of the writer:	Dr. Linda Wilkin-Krug

TOR1 AND 2: SERVICES PROVIDED

1. Activities as a centre of research, expertise, standardisation and dissemination of techniques within the remit of the mandate given by WOA

Category	Title of activity	Scope
Animal welfare (true)	Maintenance of expertise	Staff members of the (Animal Welfare Science and Bioethics Centre (AWSBC, Massey University) have contributed to training of more than 340 veterinary science (BVSc) students and 50 animal science (BAnSci) students. In the last year we have also graduated five research MSc and two PhD students in areas relevant to animal welfare.
Animal Welfare (true)	Maintenance of expertise	In the framework of the WOA-ICFAW joint project to support the implementation of WOA standards on animal welfare in Southeast Asia, the University of Melbourne, as part of the Animal Welfare Science and Bioethical Analysis, the David Bayvel Consortium, WOA Collaborating Centre for Animal Welfare, is contributing to the achievement of the WOA-ICFAW project objectives by providing technical assistance in the following activities: 1. The development and delivery of training the trainer (ToT) workshops focused on two Chapters of the WOA Terrestrial Animal Health Code addressing animal welfare: • Chapter 7.6 on the killing of animals for disease control purposes; and, • Chapter 7.13 on animal welfare and pig production systems.

		<p>2. The development of e-Modules focused on two Chapters of the WOH Animal Health Code addressing animal welfare: • Chapter 7.6 on the killing of animals for disease control purposes: aims to support the implementation of animal welfare measures by the national Veterinary Services on the operations the killing of pigs for disease purposes. • Chapter 7.13 on animal welfare and pig production systems: aims to support the implementation of animal welfare measures by the national Veterinary Services on the operations of breeding, rearing and management of pigs (<i>Sus scrofa</i>) for the production and sale of pigs and pig meat.</p>
Animal Welfare (true)	Animal Welfare Standard Project (AWSP) Toolbox website	<p>We launched an online initiative (www.animal-toolbox.org) for scientists to contribute animal welfare topics for a general audience. The Toolbox currently has both English and Chinese resources. We would like to expand the Toolbox in the future and also potentially include more language options. This activity is an opportunity for animal welfare scientists and experts to bridge the gap between science and practice, increasing their real-world impact by reaching a non-science audience.</p>
Animal Welfare (true)	AWSP webinars	<p>Three webinars were carried out in 2023 focused on Chinese academics and the livestock industry. Topics included future directions for animal welfare in China, Research Impact, and Building Relationships with Stakeholders.</p>
Animal Welfare (true)	AWSP collaborator meeting	<p>In 2023, AWSP representatives Dr. Kris Descovich, Dr. Kate Henning, and Dr. Alex Jiang travelled to Beijing to meet with representatives from a range of Chinese agricultural universities. The aim of the meeting was to discuss achievements over the past 3 years and to establish options for making on-farm progress in animal welfare in Chinese production industries. This was a very successful meeting with key future projects identified.</p>

TOR3: HARMONISATION OF STANDARDS

2. Proposal or development of any procedure that will facilitate harmonisation of international regulations applicable to the main focus area for which you were designated

Proposal title	Scope/Content	Applicable area
Openness Agreement	Prof. Ngaio Beausoleil (Animal Welfare Science and Bioethics Centre) contributed, as board member of ANZCCART (Australia NZ Council for the Care of Research and Teaching) to development and implementation of Openness Principles for institutions that use or support use of animals in Research and Teaching.	Laboratory expertise Training and education
National Foundation for Australia-China Relations: Spotlight on farming: Building bilateral strength in automated farm monitoring	We submitted a proposal to the National Foundation for Australia-China Relations for a programme of 2 bilateral scientific exchanges, one each in Australia and China. This proposal was unsuccessful. However, it was highly rated and was shortlisted in case additional funding became available	Training and education Animal production

3. In exercising your activities, have you identified any regulatory research needs* relevant for WOH?

Yes

Research need : 1

Please type the Research need: Understanding the welfare impacts of controlled atmosphere stunning (hypercapnic gas stunning) in the contexts of poultry slaughter and emergency depopulation for disease events is a regulatory research need.

Relevance for WOA Animal Welfare,

Relevance for the Codes or Manual

Field Slaughter,

Animal Category Terrestrial,

Disease:

Kind of disease (Zoonosis, Transboundary diseases)

If any, please specify relevance for Codes or Manual, chapter and title

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

Answer:

Notes:

Answer: Prof. Ngaio Beausoleil (AWSBC) is a member of current BBSRC-funded research collaboration aimed at addressing this need: Breathless Birds: Does air hunger impact the welfare of poultry at slaughter? <https://gtr.ukri.org/projects?ref=BB%2FX000680%2F1>

Research need : 2

Please type the Research need: Understanding the potential for non-human animals to experience the unpleasant experience of boredom is a regulatory research need (e.g., for laboratory and production animals held in monotonous, barren, and restricted environments).

Relevance for WOA Animal Welfare,

Relevance for the Codes or Manual

Field

Animal Category Terrestrial,

Disease:

Kind of disease (Zoonosis, Transboundary diseases)

If any, please specify relevance for Codes or Manual, chapter and title

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

Answer:

Notes:

Answer: Staff and students at AWSBC are undertaking conceptual and experimental research on animal boredom.

Research need : 3

Please type the Research need: Capability around humane slaughter and depopulation: • Domain expertise, conducting behavioural, physiological, neurophysiological, and commercial fit evaluations. • Reviews of published literature on humane slaughter and depopulation of pig and poultry farms conducted for the Australian Department of Agriculture. • Current work includes supporting the Australian Beef industry in implementing electrical stunning, and development of DTS for beef and smallstock.

Relevance for WOA Animal Welfare,

Relevance for the Codes or Manual

Field Slaughter, Depopulation,

Animal Category Terrestrial,

Disease:

Kind of disease (Zoonosis, Transboundary diseases)

If any, please specify relevance for Codes or Manual, chapter and title

(e.g. Terrestrial Manual Chapter 2.3.5 - Minimum requirements for aseptic production in vaccine manufacture)

Answer:

Notes:

Answer:

4. Did your Collaborating Centre maintain a network with other WOAH Collaborating Centres (CC), Reference Laboratories (RL), or organisations designated for the same specialty, to coordinate scientific and technical studies?

Yes

Name of WOAH CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Other animal welfare CCs	Paris 2-3 November	Africa Americas Asia and Pasific Europe MiddleEast	WOAH Global Animal Welfare Forum. Met to network and discuss the work of the CCs including shared interests.
WOAH Regional Animal Welfare Strategy	Virtual	Asia and Pasific	The CC management group included RAWs membership and observer status, with contributions to newsletter, comments on the RAWs Action Plan, webinar planning, and attendance at meetings.
Network of Animal Welfare Collaborating Centres	Virtual	Asia and Pasific Europe	Contributed to the Terms of Reference and will continue engagement in upcoming conversations and projects.
Network of Animal Welfare Collaborating Centres	Virtual	Asia and Pasific Europe	Led the development of a review document on the Five Domains for animal welfare vs Five Freedoms for the Code Commission.

TOR4 AND 5: NETWORKING AND COLLABORATION

5. Did your Collaborating Centre maintain a network with other WOAH Collaborating Centres, Reference laboratories, or organisations in other disciplines, to coordinate scientific and technical studies?

Yes

Name of WOAH CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
EpiCentre, Massey University	New Zealand	Asia and Pasific	Coordinate scientific studies applying epidemiological methods to understand animal welfare problems.
Animal Welfare Science and Bioethics Centre	New Zealand	Asia and Pasific	Research collaboration between University of Waikato, Massey University, and The University of Queensland on management and welfare of captive kiwi.
			Collaboration on proposal to

CSIRO Animal Welfare and Behaviour Team	Australia	Asia and Pasific	the National Foundation for Australia-China Relations: Spotlight on farming: Building bilateral strength in automated farm monitoring.
CSIRO Animal Welfare and Behaviour Team & Animal Welfare Science Centre	Australia	Asia and Pasific	Collaboration on the Animal Welfare Toolbox with submissions from researchers from approximately 15 institutions globally, including CSIRO and AWSC.

TOR6: EXPERT CONSULTANTS

6. Did your Collaborating Centre place expert consultants at the disposal of WOA?H?

Yes

NAME OF EXPERT	KIND OF CONSULTANCY	SUBJECT
CC associate members	Contributions to Chapter 7.1 Introduction to Animal Welfare	Five Domains model for animal welfare
Prof. Craig Johnson	Member of the committee for the review of the Terrestrial Animal Health Code	Animal Welfare
Dr. Nikki Kells	Meeting in PARIS 10-12 January 2023 on Collaboration on animal transport guidance documents	Transport

TOR7: SCIENTIFIC AND TECHNICAL TRAINING

7. Did your Collaborating Centre provide advice/services to requests from Members in your main focus area?

Yes

- A scientific literature review of the animal welfare considerations for virtual fencing technology was undertaken by Professor Andrew Fisher of the Animal Welfare Science Centre for the Australian Government. This comprehensive review in 2022 was updated with an addendum in 2023. It is published here: <https://www.agriculture.gov.au/agriculture-land/animal/welfare/awtg>.
- The report identifies key animal welfare impacts, both positive and negative, makes recommendations for the management of animal welfare risks and identifies areas where further research is needed. This technology is used worldwide, and the report is a useful resource for all those interested in or already using the technology. The report includes critical early research by CSRIO, a CC member, on the design of this technology prior to commercialisation.
- The Animal Welfare Science Centre, at the University of Melbourne hosted three visiting academics from the University of Bangalore in October 2023. As part of a program funded by the Open Philanthropy Project to increase animal welfare capability in India, Dr. Vivek Mahadev Patil (Associate Professor & Head, Dept. of Livestock Production & Management, Veterinary College Bengaluru, Karnataka, India – 560024), Dr. Mahadevapa Demappa Gouri (Assistant Professor & Head, Dept. of Livestock Farms Complex, Veterinary College Gadag, Karnataka, India – 582102), and Dr. Indresh Huchamanadoddi Cholurappa (Assistant Professor, Dept. of Poultry Science, Veterinary College Bengaluru, Karnataka, India – 560024) spent a week at the Centre undertaking training in animal welfare, farm visits and learning about the animal welfare research conducted by academics at the Centre.
- Member of the Expert Advisory Panel for the Review of the Code of Practice for the humane Treatment of Wild and Farmed Australian Crocodiles (Dr. Alison Small, CSIRO).
- Advice to the Australian Meat Industry Council on Humane Slaughter Practices (Dr. Alison Small, CSIRO).
- Development of the DTS: Diathermic Syncope technology for the humane slaughter of cattle.
- Preparation of dossier of information regarding the technology for submission to international regulatory bodies (e.g., EFSA, USDA/FSIS) Dr. Alison Small (CSIRO).
- Focus group participant for the revision of the Crocodile Housing Standards (2024). Dr. Dana Campbell, CSIRO.
- Invited Member, Stakeholder Reference Group Virtual Fencing Technology, Department of Agriculture, Fisheries and Forestry (2024). Dr. Caroline Lee, CSIRO.
- Member, NSW Animal Welfare Advisory Council, NSW Government (2023-2026). Dr. Caroline Lee, CSIRO.
- The Australian Government assisted the Vietnamese Government during the development of Vietnam's first animal welfare standards on livestock slaughter and transport. Australia's contributions incorporated WOA?H recommendations on these topics.

8. Did your Collaborating Centre provide scientific and technical training, within the remit of the mandate given by WOA?H, to personnel from WOA?H Members?

Yes

- a) Technical visit : 0
- b) Seminars : 1
- c) Hands-on training courses: 0
- d) Internships (>1 month) : 2

TYPE OF TECHNICAL TRAINING PROVIDED (A, B, C OR D)	CONTENT	COUNTRY OF ORIGIN OF THE EXPERT(S) PROVIDED WITH TRAINING	NO. PARTICIPANTS FROM THE CORRESPONDING COUNTRY
B	Australian Government Animal Welfare Forum: Topics covered included international husbandry standards of pigs and poultry	Australia	30
D	Australian Government Veterinary Internships: Students are exposed to a range of animal welfare regulatory and policy areas of the Australian Government including live export and livestock processing	Australia	2
D	New Zealand Government Veterinary Internships: students spend time in animal welfare operational and policy areas at the Ministry for Primary Industries.	New Zealand	2

TOR8: SCIENTIFIC MEETINGS

9. Did your Collaborating Centre organise or participate in the organisation of scientific meetings related to your main focus area on behalf of WOA?H?

Yes

NATIONAL/INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
International	WOAH Global Animal Welfare Forum	WOAH	2023-11-02	Paris	2
International	WOAH's 33rd Conference of the Regional Commission	WOAH	2023-11-13	WOAH's 33rd Conference of the Regional Commission	3
International	Webinar: Using WOA Standards to support good animal welfare in Asia and the Pacific	WOAH	2023-09-29	Virtual	3
International	WOAH Participatory Foresight Process for 100th anniversary – 3 workshops	WOAH	2023-09-01	Virtual	1
International	Multi-regional Whole Journey Scenario Workshop on long-distance transport by land and sea between Europe, the Middle East and North Africa	WOAH	2023-11-07	Tunisia	1
International	ANZCCART Conference 2023	ANZCCART Australia	2023-08-08	Adelaide, Australia	1
International	14th World Congress of Veterinary Anaesthesia and Analgesia	WCVA	2023-03-25	Sydney, Australia	1

International	Science Week	ANZCVS	2023-07-27	Gold Coast, Australia	6
International	Zoo and Aquarium Australasia Conference	ZAA	2023-08-03	Christchurch, New Zealand	1
International	Animals, Compassion and Conservation	University of Fribourg	2023-02-07	Virtual	1
International	Lunch and Learn Webinar	Professional Animal Auditor Certification Organization	2023-10-27	Virtual	1

TOR9: DATA AND INFORMATION DISSEMINATION

10. Publication and dissemination of any information within the remit of the mandate given by WOAAH that may be useful to Members of WOAAH

a) Articles published in peer-reviewed journals:

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Beausoleil, N.J., Swanson, J.C., McKeegan, D.E.F., & Croney, C.C. (2023). Application of the five domains model to food chain management of animal welfare: Opportunities and constraints. *Frontiers in Veterinary Science* 4, 1042733. <https://doi.org/10.3389/fanim.2023.1042733>

Boys, R.M., Beausoleil, N.J., Hunter, S., Better, E.L., Hinton, B., & Stockin, K.A. (2023). Assessing animal welfare during a stranding of pygmy killer whales (*Feresa attenuata*). *Marine Mammal Science* 39 (4) 1076-1105. <https://doi.org/10.1111/mms.13029>

Campbell & Horton (2023). The necessity of pen replication to account for and understand the impacts of social dynamics on individual laying hen behavior. *Frontiers in Animal Science*, 4, 1284419. <https://doi.org/10.3389/fanim.2023.1284419>

Campbell (2023). Floor egg laying: Can management investment prevent it? *Journal of Applied Poultry Research*, 32, 100371. <https://doi.org/10.1016/j.japr.2023.100371>

Campbell, Belson, Lea, Ouzman, Lee, Kalinowski, Mowat, & Llewellyn (2023). Automated virtual fencing can effectively contain sheep: field trials and prospects. *Animals*, 13, 619. <https://doi.org/10.3390/ani13040619>

Charalambous, R., Descovich, K., Narayan, E. (In Press) Identifying trends in admission and release of wild koalas in veterinary clinics throughout South-East Queensland, Australia. *Society and Animals*

Colditz I.G., Smith E.G., Ingham A.B., & Dominik S. (2023) Indicators of functional integrity in production animals. *Animal Production Science* 63, 825-843. <https://doi.org/10.1071/AN23029>

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Field, L., Hemsworth, L.M., Jongman, E., Patrick, C., & Verdon, M. (2023). Contact with mature cows and access to pasture during early life shape dairy heifer behaviour at integration into the milking herd. *Animals*. 3(13), 2049. <https://doi.org/10.3390/ani13132049>

Field, L., Hemsworth, L.M., Jongman, E., Hunt, I., & Verdon, M. (2023). Observations on the effects of non-maternal adult contact on the behavioural patterns of pre-weaned dairy heifers. *Animal Production Science*, 63(7), 652-663. <https://doi.org/10.1071/AN22271>

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Hampton, J.O., Hemsworth, L.M., Hemsworth, P.H., Hyndman, T.H., & Sandøe, P. (2023). Rethinking the utility of the Five Domains model. *Animal welfare*, 32, e62. <https://doi.org/10.1017/awf.2023.84>

Hartcher, K., Nuggehalli, J., Yang, L., de Luna, M., Agus, A., Ito, S., Idrus, Z., Rahayu, I., Jattuchai, J., Descovich, K., Lane, E., Sinclair, M. (2023) Improving hen welfare on cage-free egg farms in Asia: Egg producers' perspectives. *Animal Welfare*. 32. doi: 10.1017/awf.2023.85.

Harvey, A.M., Beausoleil, N.J., Ramp, D., & Mellor, D.J. (2023). Mental experiences in wild animals: Scientifically validating measurable welfare indicators in free-roaming

horses. *Animals* 13, 1507. <https://doi.org/10.3390/ani13091507>

Hemsworth, P.H., Tilbrook, A.J., Galea, R.Y., Lucas, M.E., Chidgey, K.L. & Hemsworth, L.M. (2023). Review of the influence of farrowing and lactation housing and positive human contact on sow and piglet welfare. *Frontiers in Animal Science*, 4. <https://doi.org/10.3389/fanim.2023.1230830>

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Kells, N., Perrott, M., & Johnson, C. (2023). The efficacy of electrical stunning of New Zealand rock lobster (*Jasus edwardsii*) and freshwater crayfish (*Paranephrops zealandicus*) using the Crustastun™. *Animal Welfare*. 32. <https://doi.org/10.1017/awf.2023.76>

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Kongara, K., Purchas, G., Dukkupati, V., Venkatachalam, D., Ward, N., Hunt, H., & Speed, D. (2023). Pharmacokinetics and effect on renal function and average daily gain in lambs after castration and tail docking, of firocoxib and meloxicam. *New Zealand Veterinary Journal*, 71(6), 306–314. <https://doi.org/10.1080/00480169.2023.2232337>

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Littlewood, K.E., Heslop, M.V., & Cobb, M.L. (2023). The agency domain and behavioral interactions: Assessing positive animal welfare using the Five Domains Model. *Frontiers in Veterinary Science* 10. <https://doi.org/10.3389/fvets.2023.1284869>

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Zobel, G., Barnaby, E., & Watson, T. (2023). Seeing beyond gait: A case study identifying chronic laminitis in 3 goats" *Small Ruminant Research* 227: Article number 107068. <https://doi.org/10.1016/j.smallrumres.2023.107068>

b) International conferences:

2

Littin, K., & Wilkin-Krug, L. C. M. (2022, 8-11 Nov). World Organisation for Animal Health WOAHA initiatives and standards on animal welfare [Conference Presentation]. 4th Animal Welfare Science Conference, Chongqing, China.

Pannett, M., & Littin, K. (2023, 16 Jan-3 Feb). World Organisation for Animal Health WOAHA initiatives and standards on animal welfare [Conference Presentation]. 5th International Conference of the International Veterinary Education and Research Information Center, Okayama University of Science

c) National conferences:

3

Campbell (2023). Managing behaviour to reduce floor laying in hens. ISAE Oceania Regional, November 14, Adelaide, Australia.

2023. Estimate the genetic parameters and analysis of culling reasons in Iranian Holstein dairy cattle. In: AAABG conference; 26 to end of 28 Jul 2023; Perth, Australia. CSIRO; 2023. 4. CSIRO:EP2023-0566. <http://hdl.handle.net/102.100.100/602796?index=1>

Small, A. (2023). Welfare along the livestock supply chain. In: ANZCVS Science Week 2023; 27 to end of 29 Jul 2023; Gold Coast, Australia. Australian Veterinary Association; 2023. 9. CSIRO:EP2023-2660. <http://hdl.handle.net/102.100.100/488162?index=1>

d) Other (Provide website address or link to appropriate information):

6

2023: Multiple radio and newspaper interviews within Australia, UK, and NZ for the 2023 Biology Letters paper. Altmetric score in the top 5% (e.g., Australian Associated Press, The Times London, Daily Mail UK, ABC radio (various Australian states/cities).

2023: Overhead sprinklers as a water source for commercially raised ducks. *RSPCA Animal Welfare Science Update*, Issue 80, Page 9. https://rspca.sfo2.cdn.digitaloceanspaces.com/public/Uploads/Science-Update/ScienceUpdate80_January2023-V2.pdf

2023: The attention bias task test could be a useful tool for assessing the affective state of sheep. *RSPCA Animal Welfare Science Update*, Issue 82, Page 10. https://rspca.sfo2.cdn.digitaloceanspaces.com/public/Uploads/Science-Update/ScienceUpdate82_July2023.pdf

2023: <https://www.newscientist.com/article/mg25934501-700-it-can-be-hard-to-predict-what-will-attract-or-scare-a-sheep/>

2023: <https://www.dairynewsaustralia.com.au/news/its-game-on-with-norco/>

2023: Small, A. Implementing head-only electrical stunning in beef processing. AMPC. <http://hdl.handle.net/102.100.100/483107?index=1>

11. What have you done in the past year to advance your area of focus, e.g. updated technology?

AWSP have launched a new website focused on providing important animal welfare science information to a general audience (<https://animal-toolbox.org>). We have also maintained our scientific network in China and are currently planning a funding submission to launch a new project that improves science-farm collaborations. Note that AWSP will successfully finalise its activities in June 2024 to concentrate on new activities. Some current activities will be (e.g., Animal Welfare Toolbox) will be maintained after AWSP close.

12. Additional comments regarding your report:

In late 2023 the CC engaged with WOAAH to acknowledge the lack of activity over several years. The CC has developed a reactivation plan which outlines a short 6-month process to re-engage the CC and develop a renewed longer-term plan which will identify key activities for the CC. A regular schedule of meetings has been set and the CC has been assessing its areas of commonality to focus on the most meaningful actions for the CC. WOAAH has acknowledged the challenge in maintaining activity in the absence of funding and innovative ways to address this are being discussed by the CC in the formation of its long term workplan.

Animal Welfare Science and Bioethics Centre staff have won two awards for 3Rs developments — John Schofield 3Rs Implementation Award for developing a tissue-sharing website for Massey University staff using animals in research and teaching; ICLAS Cohen Award to recognise the promotion of the 3Rs.