

# WOAH Collaborative Centre Reports Activities 2022

## Activities in 2022

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### Centre Information

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<b>Name Director of Institute (Responsible Official):</b>	Naomi Cogger
<b>Name (including Title and Position) of Head of the Collaborating Centre (WOAH Contact Point):</b>	Professor Naomi Cogger
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### 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

Disease Control	
Title of activity	Scope

WOAH Official Control Program for FMD of China.	Mainland, China.
Disease Control	
Title of activity	Scope
Formulate Technical Specification for Outbreak Investigation of FMD.	Mainland, China.
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
National Epidemiological Survey Plan on major animal diseases.	Avian influenza, FMD, ND, PRRS, PPR, CSF, Brucellosis, etc. Mainland China.
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Epidemiological survey on prevalence of <i>Pasteurella multocida</i> and toxoplasmosis in pigs.	Sichuan, Guizhou, Hebei Provinces and Inner Mongolia, Guangxi Zhuang Autonomous Region.
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Formulate Industry Standards of the Sampling Technique for Veterinary Epidemiological Survey and Surveillance.	Mainland, China.
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Epidemiological Survey on the Reutilization of Infected Animal.	Guangdong, Hunan Provinces and Inner Mongolia Autonomous Region
Training, capacity building	
Title of activity	Scope
6th Cohort of China Field Epidemiology Training Program for	25 trainees from 18 provincial & municipal ACDC and 1 national institute.

Veterinarians (CFETPV).	
Training, capacity building	
Title of activity	Scope
7th Cohort of China Field Epidemiology Training Program for Veterinarians (CFETPV).	61 trainees from 24 provincial & municipal ACDC and 1 national institute.
Training, capacity building	
Title of activity	Scope
Extended Training on Veterinary Epidemiology Technology.	Chongqing City, Changsha City of Hunan Province; Xinjiang Uygur Autonomous Region, Guizhou and Shandong Provinces of Mainland China.
Zoonoses	
Title of activity	Scope
Training on prevention and control of rabies and other major zoonosis.	62 trainees from Guangxi Zhuang Autonomous Region.
Zoonoses	
Title of activity	Scope
Training for improving the capacity of prevention and control of zoonosis in Yunnan and Guangxi under the concept of "One Health".	46 trainees from Guangxi Zhuang Autonomous Region and Yunnan Provinces.
Zoonoses	
Title of activity	Scope
Epidemiological survey on brucellosis prevalence in goat and owners awareness.	Guizhou Province of Mainland China.
Zoonoses	
Title of activity	Scope
Production and dissemination of promotional video on prevention and control of sheep brucellosis.	Guizhou Province of Mainland China.

Disease control	
Title of activity	Scope
FMD control strategy development for Myanmar and Lao PDR	Analysis of movement data, baseline surveys, post-vaccination monitoring, demographic and population density data over 5 years, comparing vaccinated with non-vaccinated ruminant populations.
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Risk assessment of an ASF virus introduction to nine Pacific Island countries	Conduct remote ASF import risk assessment mission for 9 Pacific Island countries (Samoa, Tuvalu, Federated States of Micronesia, Kiribati, Tonga, Vanuatu, Cook Islands, Fiji and the Solomon Islands) on behalf of the FAO. Reporting in 2022.
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Emerging Sources and Pathways for Leptospirosis a Paradigm Shift	A case-control study of leptospirosis in humans in New Zealand to elucidate risk factors for notification. 96 cases and 300 controls were enrolled; novel case profiles and modifiable risk factors have been identified; dissemination of findings to participants, rural and medical industries and stakeholders is underway.
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Antimicrobial-resistant bacteria and their genes in dairy farm environments	Examining the role of the dairy chain in the spread of antimicrobial resistance in NZ and in China with support of the New Zealand-China Food Protection Network
Epidemiology, surveillance, risk assessment, modelling	
Title of activity	Scope
Detection and surveillance of Theileria in non-host animals	A New Zealand-wide investigation into Theileria orientalis (Ikeda) infection in healthy domestic dogs and deer
Zoonoses	
Title of activity	Scope
Enhancing leptospirosis diagnosis and outcomes for rural & Māori communities	Initial steps included validating a PCR for typing Leptospira. The work will be followed by estimating the true incidence of leptospirosis for Māori and non-Māori in Taranaki. Finally an information brochure on leptospirosis produced by Māori for

Māori	
Zoonoses	
Title of activity	Scope
Aquatic Protozoa Analysis and Advice Services	Ministry of Health funded infectious disease surveillance characterising the zoonotic and non-zoonotic protozoa causing disease in people.
Wildlife	
Title of activity	Scope
Prevalence & Diversity of Leptospira	A New Zealand study exploring Leptospira diversity using the glmU target gene in 3 species of rats from New Zealand's North, South and Chatham Islands
Vaccines	
Title of activity	Scope
Ruminant Leptospirosis Vaccination Development	Laboratory and QA expertise in support of ruminant leptospirosis vaccination development for 1. local NZ conditions and 2. Australia with pharmaceutical companies.

## 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
National Epidemiological Survey Plan on Major Animal Diseases in mainland China	Mainland China / Guiding each province to carry out emergency and specific epidemiological surveys	health management
The technical specification for outbreak investigation of FMD.	Mainland China / Guiding each province to carry out emergency epidemiological investigation of FMD	health management
The sampling technique for veterinary epidemiological survey and surveillance.	Mainland China / Guiding each province to carry out epidemiological investigation and surveillance scientifically	health management

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

Yes

Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
WOAH Reference Laboratory for FMD	Lanzhou/China	Asia and Pasific	Epidemiological survey and results analysis of FMD in mainland China
WOAH Reference Laboratory for ASF	Qingdao/China	Asia and Pasific	Epidemiological survey on ASF in mainland China
WOAH Reference Laboratory for Peste des Petits Ruminants(PPR)	Qingdao/China	Asia and Pasific	Epidemiological survey on PPR in mainland China
WOAH Key Laboratory for Zoonoses	Changchun/China	Asia and Pasific	Epidemiological survey on Swine toxoplasmosis in Inner Mongolia Autonomous Region, Sichuan, Guangxi, Guizhou and Hebei Provinces of Mainland China
WOAH Reference Laboratory for Newcastle Disease(ND)	Qingdao/China	Asia and Pasific	Epidemiological survey on ND in mainland China
WOAH Reference Laboratory for Avian Influenza	Harbin/China	Asia and Pasific	Epidemiological survey on Avian Influenza in Mainland China

## **TOR4 AND 5: NETWORKING AND COLLABORATION**

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

Yes

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Name of OIE CC/RL/other organisation(s)	Location	Region of networking Centre	Purpose
Murdoch University	Perth/Australia	Asia and Pasific	Training, Technical communication
City University of Hong Kong	Hong Kong/ China	Asia and Pasific	Training, Experts exchange, Technical communication
York University	Toronto/Canada	Americas	Training, Technical communication
Royal Veterinary College	London/United Kingdom	Europe	Training, Experts exchange, Technical communication
Diagnostic Test Validation Science in the Asia Pacific region	Melbourne Australia	Asia and Pasific	Validation of new diagnostics for Mycoplasma bovis.

## 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
Gao Lu	FAO African Swine Fever Global Pool of Expertise	Expert consultation meeting on African swine fever (ASF) epidemiology and evolution in Asia and the Pacific region
Xu Quangang, Gao Shengbin	FMD Prevention and Control in China	25th SEACFMD National Coordinators Meeting
Wang Youming	Ad hoc Group on the evaluation of CSF status	The WOA?H Ad Hoc Group on the Evaluation of Classical Swine Fever Status of Members

Xu Quangang	Discuss the first annual implementation review report	Virtual Meeting of WOAHObservatory Expert Group
Art Subharat and Chris Compton	Specification of technical aspects of GIS systems for zoning project lead by Institute Zooprofilattico Sperimentale dell Venezia	GIS and zoning
Naomi Cogger	Observancy member	WHISE
David Hayman	Ongoing One Health and infectious disease expertise	One Health <a href="https://www.who.int/groups/one-health-high-level-expert-panel">https://www.who.int/groups/one-health-high-level-expert-panel</a>
David Hayman	Infectious disease expertise	Surveillance (Considerations on monitoring SARS-CoV-2 in animals) <a href="https://www.woah.org/en/document/monitoringsarsanimals/">https://www.woah.org/en/document/monitoringsarsanimals/</a>

## TOR7: SCIENTIFIC AND TECHNICAL TRAINING

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

No

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

No

## 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 WOAHO?

Yes

NATIONAL/INTERNATIONAL	TITLE OF EVENT	CO-ORGANISER	DATE (MM/YY)	LOCATION	NO. PARTICIPANTS
International	SFA-MARA-Technical Meeting on African Swine Fever (ASF) and Foot and Mouth Disease (FMD) Status in China	China and Singapore	2022-02-22	Qingdao/ China	15
International	26th SEACFMD	WOAHO	2022-03-16	Qingdao/ China	50



	Committee meetings				
International	Expert consultation meeting on African swine fever (ASF) epidemiology and evolution in Asia and the Pacific region	FAO	2022-08-17	Qingdao/ China	35
International	25th SEACFMD National Coordinators Meeting	WOAH	2022-10-03	Qingdao/ China	80
International	SEACFMD Joint LabNet and EpiNet Virtual Meeting	WOAH	2022-12-08	Qingdao/ China	90
International	The WOA Ad Hoc Group on the Evaluation of Classical Swine Fever Status of Members	WOAH	2022-12-07	Qingdao/ China	60

## TOR9: DATA AND INFORMATION DISSEMINATION

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

a) Articles published in peer-reviewed journals:

60

Arden, K., Gedye, K., Angelin-Bonnet, O., Murphy, E., & Antic, D. (2022). *Yersinia enterocolitica* in wild and peridomestic rodents withi60n Great Britain, a prevalence study. *Zoonoses Public Health*, 69(5), 537-549

Beasley, L. H., Cogger, N., & Compton, C. (2022). *Use of equine chorionic gonadotropin in lactating dairy cattle: a rapid review. New Zealand Veterinary Journal*, 1-12

Beig, J., Rostami, K., Hayman, D. T. S., Hassan, S., Gerred, S., & Ogra, R. (2022). *Is duodenal biopsy always necessary for the diagnosis of coeliac disease in adult patients with high anti-tissue transglutaminase (TTG) antibody titres? Frontline Gastroenterol*, 13(4), 287-294

Bojanic, K., Acke, E., Biggs, P. J., & Midwinter, A. C. (2022). *The prevalence of Salmonella spp. in working farm dogs and their home-kill raw meat diets in Manawatu, New Zealand. New Zealand Veterinary Journal*, 70(4), 233-237

Bolwell, C., Gee, E., Adams, B., Collins-Emerson, J., Scarfe, K., Nisa, S., Gordon, E., Rogers, C., & Benschop, J. (2022). *Longitudinal Testing of Leptospira Antibodies in Horses Located near a Leptospirosis Outbreak in Alpacas. Veterinary Sciences*, 9(8)

Burgess, S. A., Moinet, M., Brightwell, G., & Cookson, A. L. (2022). *Whole genome sequence analysis of ESBL-producing Escherichia coli recovered from New Zealand freshwater sites. Microbial Genomics*, 8(10)

Burgess, S. A., Palevich, F. P., Gardner, A., Mills, J., Brightwell, G., & Palevich, N. (2022). *Occurrence of genes encoding spore germination in Clostridium species that cause meat spoilage. Microbial Genomics*, 8(2)

Carlson, C. J., Gibb, R. J., Albery, G. F., Brierley, L., Connor, R. P., Dallas, T. A., Eskew, E. A., Fagre, A. C., Farrell, M. J., Frank, H. K., Muylaert, R. L., Poisot, T., Rasmussen, A. L., Ryan, S. J., & Seifert, S. N. (2022). *The Global Virome in One Network (VIRION): an Atlas of Vertebrate-Virus Associations. mBio*, 13(2), e0298521

Collis, R. M., Biggs, P. J., Burgess, S. A., Midwinter, A. C., Brightwell, G., & Cookson, A. L. (2022). *Prevalence and distribution of extended-spectrum beta-lactamase and AmpC-producing Escherichia coli in two New Zealand dairy farm environments. Frontiers in Microbiology*, 13, 960748

Cookson, A. L., Marshall, J. C., Biggs, P. J., Rogers, L. E., Collis, R. M., Devane, M., Stott, R., Wilkinson, D. A., Kamke, J., & Brightwell, G. (2022). *Whole-Genome Sequencing and Virulome Analysis of Escherichia coli Isolated from New Zealand Environments of Contrasting*

Observed Land Use. *Applied and Environmental Microbiology*, 88(9), e0027722

- Davis, M. T., Canning, A. D., Midwinter, A. C., & Death, R. G. (2022). Nitrate enrichment does not affect enteropathogenic *Escherichia coli* in aquatic microcosms but may affect other strains present in aquatic habitats. *PeerJ*, 10, e13914
- Duggan, Ian, & Knox, Matthew. (2022). The origins of *Melanoides tuberculata* (Müller, 1774) in New Zealand's aquarium trade and non-indigenous population. *Aquatic Invasions*, 17(3), 393-401
- Dunowska, M., Perrott, M., & Biggs, P. (2022). Identification of a novel polyomavirus from a marsupial host. *Virus Evolution*, 8(2), veac096
- Galetti, Mauro, Carmignotto, Ana Paula, Percequillo, Alexandre R., Santos, Marcos C. de O., Ferraz, Katia Maria P. M. de Barros, Lima, Fernando, Vancine, Maurício H., Muylaert, Renata L., Bonfim, Fernando César Gonçalves, Magioli, Marcelo, Abra, Fernanda D., Chiarello, Adriano G., Duarte, José Maurício Barbanti, Morato, Ronaldo, de Mello Beisiegel, Beatriz, Olmos, Fábio, Galetti Jr, Pedro Manoel, & Ribeiro, Milton Cezar. (2022). Mammals in São Paulo State: diversity, distribution, ecology, and conservation. *Biota Neotropica*, 22(spe)
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- Grana-Baumgartner, A., Dukkupati, V. S. R., Biggs, P. J., Kenyon, P. R., Blair, H. T., Lopez-Villalobos, N., & Ross, A. B. (2022). Mass Spectrometry-Based Lipidomics of Brown Adipose Tissue and Plasma of New-Born Lambs Subjected to Short-Term Cold Exposure. *Animals (Basel)*, 12(20)
- Grana-Baumgartner, A., Dukkupati, V. S. R., Kenyon, P. R., Blair, H. T., Lopez-Villalobos, N., Gedye, K., & Biggs, P. J. (2022). RNAseq Analysis of Brown Adipose Tissue and Thyroid of Newborn Lambs Subjected to Short-Term Cold Exposure Reveals Signs of Early Whitening of Adipose Tissue. *Metabolites*, 12(10)
- Grout, L., Marshall, J., Hales, S., Baker, M. G., & French, N. (2022). Dairy Cattle Density and Temporal Patterns of Human *Campylobacteriosis* and *Cryptosporidiosis* in New Zealand. *EcoHealth*, 19(2), 273-289
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- Han, J. H., Subharat, S., Wada, M., Vink, D., Phiri, B. J., Sutar, A., Abila, R., Khounsy, S., & Heuer, C. (2022). Impact of risk-based partial vaccination on clinical incidence and seroprevalence of foot and mouth disease in Lao PDR. *Transboundary and Emerging Diseases*, 69(4), e309-e321
- Han, J. H., Yoo, D. S., Pak, S. I., & Kim, E. T. (2022). Understanding the transmission of African swine fever in wild boars of South Korea: A simulation study for parameter estimation. *Transboundary and Emerging Diseases*, 69(4), e1101-e1112
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- Holdsworth, S. E., Kells, N. J., Vallee, E., Ward, N., Mellor, D. J., & Beausoleil, N. J. (2022). Evaluating the Behavioural Responses of Healthy Newborn Calves to a Thoracic Squeeze. *Animals (Basel)*, 12(7)
- Jayasinghe, M., Vallee, E., Bolwell, C., Digby, A., Roe, W., Midwinter, A., & Gartrell, B. (2022). Environmental Factor Investigation of Exudative Cloacitis in Kakapo (*Strigops Habroptilus*) on Whenua Hou (Codfish Island), New Zealand. *Journal of Wildlife Diseases*, 58(4), 769-781
- Kopke, M. A., Shelton, G. D., Lyons, L. A., Wall, M. J., Pemberton, S., Gedye, K. R., Owen, R., Guo, L. T., Buckley, R. M., Valencia, J. A., Lives, Consortium, & Jones, B. R. (2022). X-linked myotubular myopathy associated with an *MTM1* variant in a Maine coon cat. *Journal of Veterinary Internal Medicine* 36(5), 1800-1805
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b) International conferences:

8

1. Liu Hanze. SFA-MARA-Technical Meeting on African Swine Fever (ASF) and Foot and Mouth Disease (FMD) Status in China. Qingdao, China, Feb, 2022.

2. Wang Youming, Xu Quangang, Gao Shengbin. 26th SEACFMD Committee meetings. Qingdao, China, Mar, 2022.

3. Gao Lu. Expert consultation meeting on African swine fever (ASF) epidemiology and evolution in Asia and the Pacific region. Qingdao, China, Aug, 2022.

4. Wang Youming, Xu Quangang, Gao Shengbin. 25th SEACFMD National Coordinators Meeting. Qingdao, China, Oct, 2022.

5. Wang Youming, Xu Quangang, Gao Shengbin. SEACFMD Joint LabNet and EpiNet Virtual Meeting. Qingdao, China, Dec, 2022.

6. Wang Youming, The WOA ad hoc Group On the Evaluation of Classical Swine Fever Status of Members, Qingdao, China, Dec, 2022.

7. David Hayman, Thailand: 23rd Khon Kaen University Veterinary International Annual Conference (KVAC 2022) focused on Infectious disease transmission at the human-animal interface and One Health approaches to pandemic diseases and prevention

8. David Hayman, Joint UK-ICN/CSIRO Cutting Edge Virtual Symposium on Coronaviruses with "Disease X" Potential. September 28-30: <https://alumni.csiro.au/events/cutting-edge-virtual-symposium-on-coronaviruses-with-disease-x-potential/>

c) National conferences:

3

1. National annual meeting on epidemiological survey of major animal diseases. Qingdao, China. July, 2022.

2. Technical meeting on reutilization of infected animal. Virtual meeting, 2 Dec, 2022

3. Technical meeting on establishment and application of epidemic prevention and purification technology system in commercial cattle and sheep farms. Virtual meeting, 24 Nov, 2022.

4. Technical meeting on port quarantine and risk prevention of animal disease. Virtual meeting, 16 Dec, 2022.

5. One Health Aotearoa 8th Symposium, 6-7 December, Wellington with the following presentations

- Antimicrobial resistance and genetic background of non-typhoidal *Salmonella enterica* strains isolated from Brazil
- Potential sources, transmission routes and vectors of antimicrobial resistant *Escherichia coli* isolated from pastoral and freshwater sites
- The genetic epidemiology of extended-spectrum beta-lactamase producing *E. coli* within the Manawātū region
- Novel profiles and risk factors for leptospirosis in Aotearoa

6. New Zealand Veterinary Association Conference, 6 June, Hamilton, New Zealand with the following presentations:

- Towards understanding leptospirosis: an interdisciplinary approach
- What 15 years of research tells us about farm dogs

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

4

Books published in 2022:

1. Gao Lu, Wang Youming. *Instant insight- Advances in understanding the characteristics and epidemiology of African swine fever*, Burleigh Dodds Science Publishing.

<https://dx.doi.org/10.19103/9781786768629.0>

2. Wang Youming, Gao Lu, Xu Quangang. *Veterinary Epidemiology (3rd Edition) (Translated)*, China Agriculture press, Feb, 2022. ISBN : 9787109285002. <http://www.ccapbook.com/fg/book/bookinfo.html?bookid=4affaa467fce68b20180199185320157>.

3. Sun Xiangdong, Qiu Juan, Wang Youming, *Application of spatial analysis of animal diseases*, China Agriculture press, Mar, 2022, ISBN : 9787109291980, <http://www.ccapbook.com/fg/book/bookinfo.html?bookid=4affaa467fce68b201802e2b13b701d3>

4. Sun Xiangdong, Wang Youming, Kang Jingli. *Handbook of Veterinary Epidemiology Investigation*, China Agriculture press, May, 2022, ISBN : 9787109293670. <http://www.ccapbook.com/fg/book/bookinfo.html?bookid=4affaa46803a343a01811b1078ec03d8>.

Other

20 September online Stakeholder, Participation and Community Forum on Leptospirosis -

<https://leptospirosis.org.nz/Research/Emergingsourcesandpathwaysforleptospirosis/LeptospirosisForum2022.html> (Benschop)

22 September One Health presentation at the Science Summit at the United Nations General Assembly (UNGA77)

<https://ssunga77.sched.com/event/14WL7> (Hayman)

14 October Fourth informal, focused consultation in relation to a new international instrument on pandemic prevention, preparedness and response: One Health and antimicrobial resistance, climate change and zoonoses <https://www.who.int/news-room/events/detail/2022/10/14/default-calendar/fourth-informal-focused-consultation-in-relation-to-a-new-international-instrument-on-pandemic-prevention-preparedness-and-response-one-health-and-antimicrobial-resistance-climate-change-and-zoonoses> (Hayman)

30 November Climate change and infectious disease New Zealand Veterinary Association Seminar Series (Hayman)

6th December One Health European Joint Programme One Health EJP Education and Training Seminar

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

*Explore disease burden in the field of brucellosis and African swine fever prevention and control.*

12. Additional comments regarding your report:

*None*