



# VetBioNet

Veterinary Biocontained facility Network for excellence  
in animal infectiology research and experimentation

## *Newsletter – Issue 2*



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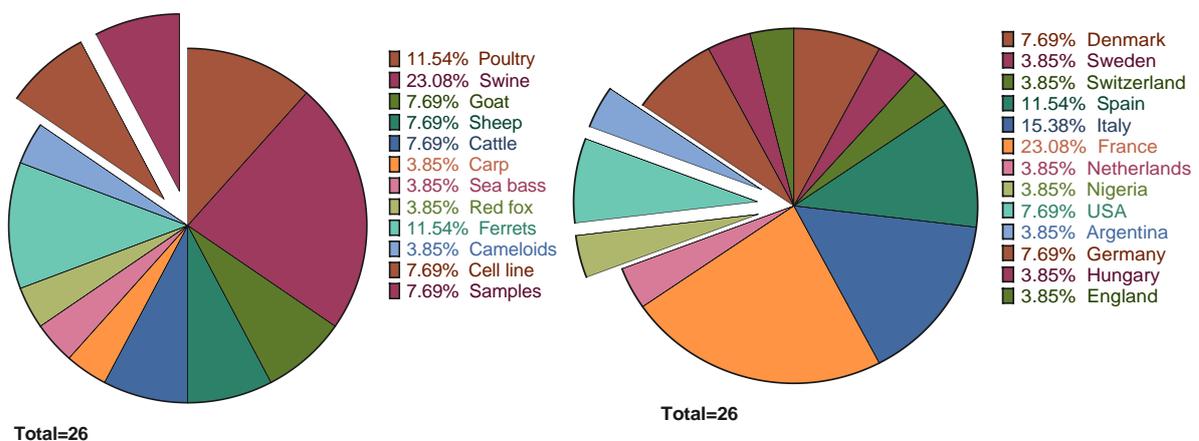
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### VetBioNet TNA calls

VetBioNet is a European network project that aims to establish and maintain a network of high-containment facilities and knowledge partners dedicated to epizootic and zoonotic diseases. Part of this network is to provide free-of-charge use of our high-containment animal facilities to researchers in this field. The last two years 31 proposals from 13 different countries have been submitted requesting research in 10 different host species involving infectious diseases. Ten proposals were granted funding, 13 were rejected or withdrawn for funding and 8 proposals are still under evaluation.

If you would like to apply for access to our high-containment facilities to perform an animal experiment with infectious diseases for free, you can visit our website at <http://www.vetbionet.eu/>, and go to the tab TNA Call for our electronic submission procedure.



## *New review says application of humane endpoints needs to improve*

Michelle Hudson-Shore

A retrospective review of German animal research proposals conducted by Herrmann and Flecknell has identified that the vast majority of the proposed humane endpoints were poorly described, unclear, generally not procedure specific and were late stage. Thus, leading them to the conclusion that most humane endpoints in the examined proposals could and should be improved. They also propose that this is indicative of a lack of actual use of refinement methods in practice resulting from either a lack of knowledge of what can be implemented or a lack of understanding of the importance of refinements for animal welfare and scientific quality. The review gives a range of detailed examples and discusses recommendations for improving the situation overall. Humane endpoints are a key implementation of the third R, Refinement, in animal experimentation. A humane or less-inhumane endpoint is the 'earliest indicator in an animal experiment of (potential) pain and/or distress that, within its scientific context and moral acceptability can be used to avoid or limit adverse effects by taking actions such as humane killing, terminating the study or alleviating the pain and distress' . In recent years there has been an increase in research in the area of refinement but Herrmann and Flecknell<sup>1</sup> argue that animals can only benefit from these efforts if the new knowledge is implemented in practice. Hence, they reviewed animal experiment proposals submitted in 2010 for authorisation by the German regulators for information on the use of humane endpoints and assessed whether the planned humane endpoints appeared appropriate.

Despite the use of humane endpoints being a legal requirement in many countries and their use being generally considered as best practice Herrmann and Flecknell<sup>1</sup> found significant deficits in reporting of humane endpoints and problems with those that were described in the surveyed proposals. They make the following recommendations to address these issues:

1. Increased effort by the scientific community to find earlier experimental endpoints
2. Increase the use of new technologies and other advancements used in humans to benefit animals e.g. biomarkers and non-invasive imaging

3. Establish international working groups with expertise in 3Rs and their respective research fields to review the validity of particular animal models and if proven valuable research and provide recommendations for refining those models.

Refinement is an important aspect of the 3Rs approach to animal experimentation, it can lead to profound and direct welfare benefits for laboratory animals as such as much as possible must be done by the scientific community to ensure it is effectively and widely implemented.

There are resources available to help researchers to develop and include humane endpoints in their project proposals such as the 3Rs-Centre ULS, 'Humane endpoints in laboratory animal experimentation' website . In addition, the European Society for Alternatives to Animal Testing (EUSAAT) Congress to be held in Linz, Austria, 10-13 October 2019 will have a session on Refinement: best practice approaches, animal welfare, avoidance of severe suffering, culture of care (see the EUSAAT website for further details ).

<sup>1</sup> Herrmann K. and Flecknell P. (2018) The application of humane endpoints and humane killing methods in animal research proposals: A retrospective review. *ATLA* **46**: 317-333.

<sup>1</sup> Hendriksen C. Morton D and Cussler K. (2011). Use of humane end points to minimise suffering. In the *Cost Manual of Laboratory Animal Care and Use* (eds. B Howard, T Nevalainen and G Perretta), pp. 333-353. USA: CRC Press.

<sup>1</sup> <https://www.humane-endpoints.info/en> (accessed 15.4.2019).

<sup>1</sup> <https://www.eusaat-congress.eu/> (accessed 15.4.2019).



## *Researchers Enjoy VetBioNet/FRAME Training School in Experimental Design*

Michelle Hudson-Shore

In January this year, researchers from across Europe, including several VetBioNet members, attended the VetBioNet/FRAME Training School In Experimental Design and Statistical Analysis in Bioscience and Biomedical Experiments, held at the University of Nottingham UK. The event was organised to address the VetBioNet objectives to provide graduate and post-graduate training opportunities (WP5) and to define and disseminate best practice, particularly in relation to the 3Rs and animal wellbeing (WP4).

This VetBioNet 3Rs Training School was made possible due to a longstanding partnership between FRAME (Fund for the Replacement of Animals in Medical Experiments) with the University of Nottingham. FRAME in partnership with universities, NGOs and projects delivers regular training schools to increase awareness among scientists about the need to reduce animal numbers in experiments and to refine procedures. FRAME is a UK medical research charity committed to replacing the use of animals in scientific experiments. Where the use of animals is currently necessary, FRAME supports the reduction of numbers involved to an unavoidable minimum and refinement of experimental procedures to minimise any suffering caused. FRAME is keen to partner with international groups, such as VetBioNet to disseminate good practice in the 3Rs and support multi-level professional training.

The Training School was delivered by internationally recognised expert tutors including VetBioNet members, Drs Kate Millar and Michelle Hudson-Shore. The interactive programme covered among other things, principles of experimental design; common failings; basic statistical inference, different types of design; examples of statistical software and a chance to discuss unresolved design issues with the tutors. The training is industry accredited by FELASA (Federation of European Laboratory Animal Associations) and UK LASA (Laboratory Animal Science Association) and also provided delegates with an opportunity to network with scientists across industry and academia.

The programme provided participants with the knowledge to ensure they are designing experiments, such as animal infectious disease studies, to get the maximum information with minimal animal use, allowing them to produce higher quality science with more reliable results. Feedback from the VetBioNet training attendees was very positive with several providing additional comments such as:

“Course even better than expected. Course material was great with the books and website. Really great help from tutors. Best course I've been on for a long



time. Learned a lot and will definitely conduct better experiments in the future!”  
(Participant 2)

“I would definitely recommend this course to colleagues and I would actually make it compulsory.” (Participant 15)

VetBioNet are keen to run a further Training School as an added benefit for the project and we would be keen to discuss possible future venues with VetBioNet Members and associates. Please contact Dr Michelle Hudson-Shore (michelle.hudson-shore@nottingham.ac.uk) directly, if you are interested in hosting a VetBioNet Training School (2020-2022). For further information on FRAME and their other training related events and Training Schools please visit: <https://frame.org.uk/training-events/training-school/>.



Dr Hudson-Shore (University of Nottingham) welcomes participants to the Training School.



Dr Kate Millar (University of Nottingham) introduces the VetBioNet Project

***Phd-student Sofie Barsoee has started her Transnational Access experience at Istituto Zooprofilattico Sperimentale delle Venezie (IZSve)***

Anna Toffan

Phd-student Sofie Barsoee is currently visiting The IZSve through the VetBioNet TNA program. While at IZSve she is performing a vaccination and challenge study of European Sea Bass to test an experimental vaccine against two different strains of betanodavirus. Betanodavirus causes the disease Viral Nervous Necrosis (VNN) which is an infection of the CNS with serious neurological symptoms and high mortalities in marine species. The disease is a big problem in farms with sea bass, one of the main cultured species of the mediterranean. The work is part of Sofies Phd at the Technical University of Denmark, Institute for aquatic resources (DTU Aqua), where she is working with different aspects of the testing of a new experimental vaccine against VNN. IZSve is the OIE reference laboratory for VNN, therefore this is a unique opportunity for Sofie to visit IZSve and learn from their expertise.

