


Cover Sheet for Bids			
Name of Strand: Strand A:	<input type="checkbox"/>	Strand B:	<input type="checkbox"/>
		Strand C:	<input checked="" type="checkbox"/>
Name of Lead Institution:	The Royal Veterinary College		
Name of Proposed Project:	Online Veterinary Anatomy Museum (OVAM)		
Name(s) of Project Partners(s)	University of Glasgow	University of Murcia	
MEDEV – HEA Subject Centre	University of Liverpool	University of Dublin	
University of Edinburgh	University of Bristol	RCVS Trust	
University of Nottingham	University of Cambridge	Hartpury College	
This project involves one or more commercial sector partners	Name(s) of any commercial partner company (ies)		
YES	Manson Publishing		
	Morpho-Imaging (Belgium)		
	Elsevier Health Sciences		
Full Contact Details for Primary Contact:			
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Length of Project:	12 months		
Project Start Date:	November 2011	Project End Date:	October 2012
Total Funding Requested from JISC:	£ 128,339		
Total Institutional Contributions:	£ 31,568		
Outline Project Description:			
<p>The Online Veterinary Anatomy Museum (OVAM) will provide access to a comprehensive and pedagogically structured set of veterinary anatomical resources from UK veterinary schools and other institutions. These will be aggregated and ordered in an environment which will make them easily discoverable by different cohorts of learners. Key to the success of this project will be the development of effective methodologies to embed and integrate these materials within a traditional curriculum to maximise exposure, uptake and sustainability.</p>			
I have looked at the example FOI form at Appendix A and included an FOI form in this bid			
		YES	
I have read the Funding Call and associated Terms and Conditions of Grant at Appendix B			
		YES	

1. PROJECT CONTEXT

- 1.1. The UK veterinary education community has a long track record of collaborating on the development of digital learning resources. This is partly because the sector is relatively small and there are many similarities in the curriculum across the seven UK veterinary schools. This spirit of partnership extends beyond the veterinary schools and includes Further Education (FE) providers of veterinary nursing and equine science as well as to a large international network of veterinary educators.
- 1.2. In the mid-1990s, all the UK veterinary schools collaborated on the Computer Learning in Veterinary Education¹ (CLIVE) initiative funded initially by the Teaching and Learning Technology Programme (TLTP). This successful initiative involved developing and sharing over 100 computer aided learning packages on CD ROM, many related to veterinary anatomy which are still widely used both in the UK and internationally.
- 1.3. WikiVet² was established as a development of the CLIVE model but utilises Web 2.0 based technologies and content created within UK veterinary schools. It has been supported by the JISC and since 2009 has also attracted recurrent financial support from other funders. The WikiVet project has involved a growing user group who are creating and sharing open educational resources (OER) in the veterinary field.
- 1.4. The Royal Veterinary College (RVC) was a partner in the Organising Open Educational Resources (OOER) project funded under OER Phase I. The toolkit and procedures developed in this initiative have been put to effective use in the recently JISC funded eContent bid called "Opening Veterinary Access to Literature" led by the RVC. This project has been innovative in demonstrating how content from both Higher Education (HE) and commercial partners can be repurposed and combined into an educationally rich collection of OERs. These resources have not only been published within WikiVet but also embedded within Wikipedia and as iTunes podcasts in English, French and Spanish to ensure the widest possible access.
- 1.5. There has been a significant shift recently in the way that veterinary students source information to support their studies. Online media such as dissection videos or "potcasts" are replacing physical visits to the museum or library. Students state that the convenience of anytime, anywhere access to online anatomy resources is changing the way that they access learning and approaches to study.

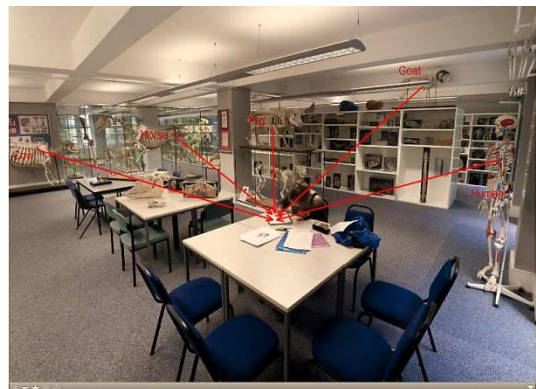


FIGURE 1 : TRADITIONAL RVC ANATOMY MUSEUM WITH SOLITARY STUDENT

¹ www.clive.ac.uk

² www.wikivet.net

1.6. Veterinary anatomy has always been one of the more difficult subjects to teach within the curriculum due to its dependence on student access to cadavers and specimens. The introduction of interactive digital media has opened up new ways for veterinary students to study anatomy. This fits well with the move towards self-directed learning, enabling students to revisit and explore topics outside both the lecture theatre and the dissection lab. Examples of existing resources developed by the project partners can be explored through this link : www.en.wikivet.net/museum



FIGURE 2 : 3D MORPHO-IMAGE OF FOAL WITH MANDIBULAR TUMOUR

1.7. Each of the UK veterinary schools has already created a wide range of innovative online resources to support anatomy teaching including dissection videos, potcasts, interactive PowerPoints and plastinated specimens to supplement traditional teaching practice. However, it is now recognised that there is often duplication of resource development which is not only wasteful of effort but has also created confusion amongst students as to where to look online for the most appropriate material.

1.8. In response to these issues, veterinary anatomists at the RVC have started collaborating with their colleagues at other UK and international veterinary schools as well as with educational museums and publishers to streamline the development of shared anatomical OERs. The OVAM provides a timely opportunity to build on this partnership in order to aggregate and develop a unique and open educational resource reflecting excellence in anatomy teaching.

2. PROJECT JUSTIFICATION

2.1. The project will assemble a comprehensive set of existing veterinary anatomical resources from all the UK veterinary schools as well as a European vetschool. In addition several commercial publishers and developers have offered their content in an OER format at no cost based on the benefits they have perceived from the original OVAL project. These resources will be selected from the project partners based on their pedagogical value, complementarity with other resources, suitability for a range of different audiences, open educational status, interactivity and relevance for web delivery. All these resources will be indexed and meta-tagged to ensure their discoverability and accessibility.

2.2. The content of the museum will have a strong educational focus. Many of the resources available through the museum are already being used effectively in individual veterinary schools for teaching purposes. However, their value will be greatly increased when they are combined with resources from other institutions to provide an integrated resource package of information, animation, assessment, interaction and feedback. A decision has been made to focus on several anatomical systems including: locomotor, reproductive, respiratory and the head. The equine skeleton will be the main anatomical model but comparative anatomy with other domestic species and man will also be incorporated.

2.3. Rather like a traditional museum, the OVAM will allow media from different eras, backgrounds and sources to be displayed in one place. For example historical anatomical images from George Stubbs dating back to 1766 will be brought alive for the first time using drag and drop assessment tools alongside some of the latest 3D imaging media depicting the same skeletons and structures in a new way.

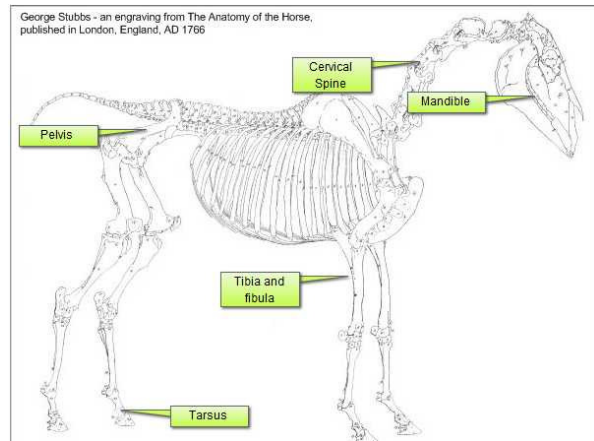


FIGURE 3 : 1766 STUBBS DRAWING WITH 21ST CENTURY DRAGSTER

- 2.4. Anatomy has always formed the basis for teaching clinical sciences. Effective vertical integration has long been the intention of veterinary educators but has often been difficult to realise with teaching split between pre-clinical and clinical campuses. The virtual museum offers the exciting potential to address this divide by effective integration of an appreciation of structure and function with clinical medicine and surgery. For example a series of 3D images of the bones of the equine foot can be linked with radiographs of a pedal bone fracture, animations of a lame horse and videos of farriers using remedial shoeing techniques.
- 2.5. It is difficult to quantify the demand for a virtual museum amongst potential users. However, we know from educational research which has been presented at recent conferences that students have found digital resources of great value in their studies and revision. For example a 2010 comparative study between the RVC and the University of Murcia of students using drag and drop anatomy resources was presented at the European Association of Veterinary Anatomy Congress in Paris and showed that there was strong support from students. The fact that the WikiVet site is growing at about 50% per year, mainly through veterinary student registrations, is also an endorsement for further online resource provision.
- 2.6. There is a clear need to ensure full institutional support for this project to guarantee that its value is recognised in Teaching and Learning and e-Learning strategies. This will also be important to underpin the sustainability of the project and continued resourcing. The fact that within a short period of time all the UK veterinary schools and others have signed up for the project demonstrates the institutional enthusiasm for collaboration and sharing. This could partly be due to current financial limitations within HE and FE and the resulting need to pool the development of resources and also to leverage new technologies to improve the quality of the student experience and the efficacy of teaching.
- 2.7. The principle intended audience for the OVAM is pre-clinical and clinical veterinary students as well as veterinary surgeons in the UK and elsewhere in the English-speaking world. However, much of the content will be of relevance and interest to a much wider audience. The project partners include an FE College which teaches veterinary nursing and equine studies where anatomy forms a core part of the curriculum. In addition there is a large potential audience within the general public who may find a “visit” to the museum of

interest including school pupils studying biology, horse owners and even students studying other medically related disciplines.

- 2.8. WikiVet and the OVAL project have already demonstrated some of the opportunities that exist with web 2.0 technologies. Embedding the museum within WikiVet provides access to the powerful category meta-tagging and search facilities of mediawiki³. The integration with Facebook and Twitter feeds and RSS links to blogs will also be of value to publicise new content. To provide a rich and interactive experience, users will receive feedback on assessment tasks and be able to rate content and leave comments in a similar manner to Amazon.
- 2.9. The WikiVet project has already benefited from strong links with many other institutions within the JISC community. This is a two way process and during three past JISC funded projects the RVC and its partners have actively shared experience and examples of good practice. The museum clearly provides a useful model for others in the JISC community. The wider lessons of manipulating media, embedding resources within the curriculum, reaching out to international audiences, establishing links with commercial publishers and sharing OERs are likely to be of great value within the community.

QUALITY OF PROPOSAL AND ROBUSTNESS OF WORKPLAN

3. PROJECT PLAN AND DELIVERABLES

3.1. The project comprises six Work Packages which are detailed below. A Gantt chart showing the proposed timelines for these activities is also included.

3.2. WP1 – Project Management

This work package covers all project management activities including planning, recruitment, coordination between academic and non- commercial partner institutions, reporting, assessment of risks/opportunities and oversight of budget expenditures throughout the duration of the project. A project Steering Group with representatives from each of the partners will be established to oversee progress and advise the project team on future developments. A Project Officer will be employed at the outset of the project who will report to Nick Short, the Project Manager. Deliverables will include comprehensive documentation of all project meetings, interim reports to JISC and a full evaluation report on completion for the project.

3.3. WP2 – Selection of Digital Resources

This will involve the Project Officer working closely with all seven veterinary schools, a FE college and other commercial partners through individual visits. In order to do this efficiently, each school will be asked to appoint student “curators” who will be paid on a casual basis to coordinate links with the project, with academics and with students within veterinary schools – this is a model that has worked well in past JISC funded projects. A project workshop will

³ <http://www.mediawiki.org>

take place in Easter 2012 at which all the student representatives will attend a short residential course in London to discuss how to select and share resources effectively. In parallel to this work, the Project Officer will work with non-veterinary school partners directly to source relevant content. Students may be temporarily assigned to work with these commercial partners too. Deliverables will include an inventory of resources and media to be repurposed with a detailed chart of activities and workflow

3.4. WP3 – Collation and Release of Digital Resources

In this work package, the Project Officer will work with students employed at each of the veterinary schools to assemble, identify, describe, tag and store relevant media from all the partners. This team of up to 15 veterinary students will be responsible for providing the link with relevant teaching staff in their own institution and ensuring that academics are kept informed of the development of the museum. Prior to the release of content there will be a need for some restructuring and rewriting. In addition, the toolkit developed in the OER JISC project, will be used to ensure that the content is cleared for copyright, consent and IPR. Deliverables will include a documented methodology for repurposing and digitising existing resources into a format suitable for open publishing through the virtual museum interface.

3.5. WP4 – Development of Museum Interface

This will involve the development of an intuitive, engaging and dynamic environment within which the virtual museum will be housed. The specific design and structure of this space will be determined by working closely with student user focus groups and in collaboration with academic staff. The museum framework will be designed to accommodate a variety of users including veterinary students, veterinary graduates, veterinary nurses, academic staff, international users and the general public. The deliverables will include a well-documented open source interface model and code, which can be adapted for use by other institutions.

3.6. WP5 – User Testing and Monitoring

The innovative nature of this project means that this particular work package will be crucial. The Project Officer will identify three focus groups of up to eight students or staff from the partner institutions who will be consulted throughout the development of the museum. There will be a face to face meeting with each group, virtual meetings using online conferencing tools and a final combined meeting of all three groups at the project final showcase. The deliverables of this work package will include detailed notes available through the project web site and full transcripts of the focus groups.

3.7. WP6 - Dissemination

This final work package will ensure that the OVAM will be widely promoted to a relevant UK and international audience. This will be the responsibility of the Project Officer, who will use the extensive WikiVet mailing list of over 12,000 vets and students to keep potential users informed of developments. The project Facebook and Twitter feeds will also publicise new resources as they go live in the museum. Direct promotion to UK and International veterinary schools will also take place through existing networks, including the HE Academy's Subject Centre MEDEV. Articles in the veterinary press, presence at selected veterinary congresses and conference papers will also be used to raise awareness. Finally the lessons

learnt from the project will be shared with JISC and HE partners through reports and a 2012 presentation at ALT-C. A final project showcase is planned to bring together some of those involved in the development of the museum as well as senior managers, institutional policy makers and the press. The intention is to ensure that by the October 2012 high tuition fee student intake, all the partners have a resource that is available for their students to use.

OVAM Gantt Chart												
	Nov-11	Dec-11	Jan-12	Feb-12	Mar-12	Apr-12	May-12	Jun-12	Jul-12	Aug-12	Sep-12	Oct-12
WP1 – Project Management												
Project Officer appointment	█											
Steering Group Meetings		█					█				█	
JISC project reporting			█			█			█			█
Coordination and networking												
WP2 – Selection of Digital Resources												
Project visits to all key partners		█	█	█								
Selection of vetschool curators			█	█	█							
Workshop for students						█						
Meetings with publishers						█	█	█				
WP3 – Collation and Release of Resources												
Students curators start work									█			
Selection of content										█		
Use of OER toolkit											█	
Repurposing for publication											█	
Work with publishers to repurpose content								█	█	█	█	
WP4 – Development of Museum Interface												
Collection of visual assets				█	█	█						
Interface programming						█	█	█	█	█		
Embedding content											█	█
WP5 – User Testing and Monitoring												
Identification of focus groups		█	█	█								
Face to face meetings						█						
Skype consultation									█			█
WP6 - Dissemination												
Final workshop												█
Ongoing e-publicity						█	█	█	█	█	█	
Promotion in vet schools												█