Veterinary Faculty
Re-visitation Self-Evaluation Report

2017
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Introduction

The Alfonso X El Sabio University (UAX) is a private university situated in the autonomic community of Madrid, Spain, offering a Veterinary Degree since 2002. It was visited by ESEVT for the first time in November 2014 for a full stage 1 evaluation, with the identification of 3 major deficiencies and several minor deficiencies summarized below:

Major deficiencies:

1. Lack of clinical and hands-on training (including 24H emergency service) under the supervision of academic staff in food-producing animals.
2. Lack of strategy, funding and available time for research activities, with as a result a negative impact on research-based teaching and education to research.
3. Inadequate SER (errors, inaccuracies, lack of key data).

Minor deficiencies:

- Lack of a students’ organisation in order to propose their representatives in the relevant committees.
- Too much descriptive Anatomy and not enough topographical one
- Lack of agronomy teaching
- Low caseload in most species (both in clinic and necropsy)
- Lack of obligatory practical training in ante- and post-mortem meat inspection
- Not enough veterinary e-books & e-journals available on the Intranet for students
- Lack of formal training for the teachers
- Too many part-time teachers and too many teachers without PhD
- Lack of official residency programmes approved by the relevant European Colleges
- Lack of publications in international peer review journals in most disciplines.

The identification of the above resulted in the final classification of the UAX establishment as NON-APPROVED. Therefore, this R-SER has been prepared in compliance with ESEVT “Uppsala” May 2016 SOP, as one of the requirements for petitioning a re-visit. UAX Veterinary Faculty (VFLUX) is fully committed to meet ESEVT standards and has been working since EAEVE visitation in correcting the identified deficiencies. The main features and developments implemented in response to the recommendations of the last visitation are outlined below:
1. Correction of the Major Deficiencies

1.1 Major Deficiency 1:

Lack of clinical and hands-on training (including 24H emergency service) under the supervision of academic staff in food-producing animals.

1.1.1 Factual information:

This deficiency has been addressed from three different aspects. increased case-based lectures and obligatory practical teaching hours, appointment of teaching personnel specific for food-producing animal cases, and improvement of facilities and availability of sick animals at the Veterinary Teaching Hospital (VTH).

- Food animal case-based lectures and obligatory practical teaching hours (both large and small ruminant) have been increased in clinical subjects such as medical pathology (internal medicine), surgical pathology (surgery), and anesthesia for 4th year students. Medical and surgical pathology had each 2 hours per semester allotted to case-based lectures or seminars, and no obligatory practical training on these species. Anesthesia had no time allotted to these species. The distribution of the new number of hours of obligatory practical training (60 hours) is depicted in Table 1.

<table>
<thead>
<tr>
<th>Subject</th>
<th>Case-based (h)</th>
<th>Practical (h)</th>
<th>After-hours (h)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Medical Pathology</td>
<td>8</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Surgical Pathology</td>
<td>8</td>
<td>12</td>
<td>6</td>
</tr>
<tr>
<td>Anesthesia</td>
<td>2</td>
<td>4</td>
<td>2</td>
</tr>
</tbody>
</table>

**Table 1. New obligatory clinical training in food-producing animals in 4th year**

Senior year students (5th year) assist in the treatment and management of food-producing animals during their after-hour/emergency duties throughout the year. The number of emergency hours has been increased for large animal rotations (from 12h to 72h), therefore increasing the exposure to hospitalized and emergency food-animal cases.
A total of 4 clinical/case-based seminars on food-producing animals were provided in 2016 as additional training.

- Dairy farm production: Nutrition and management.
- BVD: Vaccination and immunity.
- Diagnostic, treatment and prevention of RSV

Senior students also have the opportunity to participate in clinical case management outside the VTH (mainly dairy cattle), through the subject of Reproduction and Obstetrics in collaboration with Africana (dairy cattle association) and in the final clinical extramural rotations (preceptorship). Extramural practical training with food animal practitioners is now obligatory and the options available have been greatly increased for 5th year students, including a pig production specialist and 5 new cattle specialists.

- Personnel has been appointed for in-house food animal clinical/practical teaching enabling the students to receive hands-on and clinical training under the supervision of academic staff. Two new clinicians/teachers has been hired as Responsible for the Food Animal Service that includes 24 hours emergency service, and two clinician/teachers assist with hospitalization of these species.

- A new food animal treatment area has been installed including two holding pins, head catch, treatment stocks and loading ramp designed for bovine. Two stalls have been recondition for small ruminant hospitalization. The number of sick animals available for hands-on and clinical training has increased moderately, but it is expected to improve greatly thanks to collaborations with animal sanctuaries (mainly small ruminants) and purchase of diseased cattle from surrounding dairy farms for treatment at the VTH. The progression of cases up to September is depicted in Table 2.
Table 2. Progression of clinical cases of food-producing animals seen at VTH.

<table>
<thead>
<tr>
<th>Food-producing animals</th>
<th>species</th>
<th>Number of cases</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>2016</td>
</tr>
<tr>
<td></td>
<td>cattle</td>
<td>a</td>
</tr>
<tr>
<td></td>
<td>small ruminant</td>
<td>25</td>
</tr>
<tr>
<td></td>
<td>pigs</td>
<td>3</td>
</tr>
<tr>
<td></td>
<td></td>
<td>54</td>
</tr>
</tbody>
</table>

(a) Consultations  
(b) Hospitalized

1.1.2. Comments

The VFUAX is fully aware that the students need a strong clinical and practical knowledge of food-producing animals clinical conditions. It is therefore actively improving their training and hands-on opportunities under the supervision of academic staff.

As mentioned in the previous visit, food-producing animal farms in Madrid have dramatically decreased over the last 6 years and the diseased animals in the existing operations are not traditionally referred to veterinary hospital facilities. The establishment has followed EAEVE recommendations given during the first visit and has searched for ways to increase the cases at the student’s disposal. Collaborations with animal sanctuaries have given our students the opportunity to receive wide-ranging clinical and hands-on training (including 24H emergency service), especially in small ruminant medical and surgical cases, to an extent that cannot be achieved with animals from traditional productive systems. Introducing bought diseased cattle greatly increases training opportunities.
1.2. Major Deficiency 2:

Lack of strategy, funding and available time for research activities, with as a result a negative impact on research-based teaching and education to research.

1.2.1. Factual information:

This deficiency has been addressed with five different measures: appointment of a Head of Research for the VFUAX, who has developed a strategic plan including time allowance for research activities, construction of research facilities (new research laboratory at the VTH), inclusion of students in research activities and designation of funding.

- Appointment of a Head of Research: Dr. Javier García-Castro has joined the VFUAX to help us develop our research needs. He is a cellular biologist with 25 years of research experience. He is coauthor of more than 50 research paper published in international peer review journals, principal investigators of research projects since 2004 and coauthor of 7 patents. He has led the Cellular Biotechnology Unit of “Carlos III” National Institute of Health (ISCIII) and his group is focused on projects related with basic and translational biomedicine.

Dr. García-Castro also is biotech entrepreneur and he is partner of two biotechnology spin-off companies; one of them focus in human cellular therapies (Cellulae) and the other in advances therapies in for veterinary clinics (Centauri biotech). Moreover, his research lines have traveled all the way from bench to bedside. In human clinic, they are developing a new oncologic treatment using adult stem cells and oncolytic viruses. They obtained funding to create a GMP clean room in a children hospital, where to produce their cellular drugs. Nowadays, they have finished a Phase I-II clinical trial (EudraCT 2008-000364-16) with interesting clinical responses. In addition, in the veterinary clinic, they have finished the first regulatory clinical trial using adult stem cells in veterinary. Currently, EMA is examining the data in order to obtain a market authorization. In sum, Dr. García-Castro illustrates the way of action of the One Health concept, as an interdisciplinary collaboration of health care for humans and animals.

- Development of a strategic plan: Dr. García-Castro has developed a strategic plan for research at VFUAX that is summarized below.

Concerning Research and Development (R&D) activity:

The Strategic Plan to promote research in the College of Veterinary Medicine at Alfonso X El Sabio University (UAX) includes a study about the R&D positioning of the UAX in the national and regional context, a SWOT analysis on the current situation (Anex I), and a study about the scientific production in UAX during the last 5 years (Anex II). Teaching and clinical veterinary staff involved in veterinary R&D have been contacted in order to focus the multiple research lines in few areas with a higher potential to be developed in UAX. At this moment, three main areas have been identified and also other two interesting incipient research lines, with strategic potential for UAX (Anex III). Finally, initial contacts have been established with private companies that could be interested in carrying out R&D studies in the UAX’s facilities and Veterinary Hospital (examples: Entrechem and Agropardal).
Concerning Human Resources

In the Veterinary College only half of teachers, and clinicians, have a PhD. This is a clear handicap to enhance research in UAX. Several professionals with many years of experience, including European official accreditations, do not have a PhD degree. This situation prevents the possibility of being a Principal Investigator in most of public and private calls for research grants, being directors of doctoral theses, etc… In addition, a high number of veterinary teachers/clinicians do not have a R&D competitive CV, which limits access to research funding, especially in public calls. The traditional dynamic in the HR department of UAX, until now, have been focus in obtain a high workload for teachers and clinicians, without regard R&D skills. On the other hand, approximately two thirds of the veterinary staff has a partial-time job. In sum, the current situation entails the loss of an "emotional" linkage (beyond the working one) between professionals and the UAX. To this effect, human resources has created positions for teachers to be involved in research to various degrees: 20% research- 80% teaching/clinical activities, 50-50 and 80-20.

- Construction of research facilities: A new research laboratory has been built in the Teaching Hospital premises to hold the developing research activities. The 500 m² facility includes a biochemical and molecular biology laboratory. It is being equipped with state of the art techniques, together with a positive pressure cellular biology laboratory that includes a biological security cabin, dark room for fluoroscopy, cold room, centrifuge and freezer area, and material preparation and water distillation area.

- Inclusion of students: The third year subject “experimental animals” has been redesigned and a new coordinator appointed to improve education to research. The new coordinator is the new Head of Research appointed for the VFUA. Fifth year students are being encouraged and trained to perform basic research for their graduation projects. These projects are developed under the supervision of the Project Mentor (always a teacher holding a PhD) and are often presented in scientific meetings or published. The number of graduation projects that are research based has been increasing every year since EAEVE visit. Students will also have the possibility to participate in research activities at the new VTH laboratory during their practical rotations at the end of the fifth year.

- Designation of funding: Funding for research at UAX was traditional solely provided by the coalition of the UAX Foundation and Santander Bank through small research grants. Given the new approach to research oriented education, UAX has invested in new facilities and strategic plans and will be allotting specific funding for research personnel and projects, as well as supporting petitions from the head of research for public and private calls.
1.2.2. Comments:

VFUAX is a relatively young institution with little to none established research lines or teams, but has embraced EAEVE recommendations and understood its importance and the repercussion on the student’s education. Main areas have been identified and will be potentiated by UAX. Education to research for veterinary students has greatly improved since EAEVE first visit and it is one of the main goals in the strategic plan.

1.2.3. Suggestions for improvement:

**R&D ACTIVITY**

- We must improve and increase the clinical research at VTH, not only with our own R&D projects but also offering high quality services or collaborations to private companies and public research centers.

- We suggest grouping of individual researchers in multidisciplinary groups, focus in specific areas with the aim of creating sufficient human critical mass to be competitive and propose more ambitious R&D projects.

- We suggest hiring, at least, three senior postdoctoral researchers to start research groups, localized in the new molecular and cellular laboratory found at Veterinary Hospital. These translational research groups must work in a very close collaboration with clinicians.

- We suggest an inclusion in working schedule of time specifically dedicated to R&D activities. In addition, specific evaluation criteria should be established for research activity.

- We suggest establishing specific teaching plans with the aim to improve the access of students to R&D activities.

- We suggest developing R&D measures that will provide data to justify our activities of innovation and research in UAX.

- In general, we suggest to keep in mind in UAX research lines the "One Health" concept. "One Health" concept would be equivalent to the idea "one world, one health", where the link between animal diseases and public health should be emphasized.

- Establish strategic partnerships, where appropriate (private companies, public research centers), that will advance our position in animal health and veterinary science, locally and nationally.

**HUMAN RESOURCES**

- We suggest expanding UAX human resources portfolio to include more R&D professionals, including that senior postdoctoral researchers suggested previously.

- We suggest a positive assessment of R&D experience, specially a PhD degree, in the personnel selection, and an inclusion of R&D activities clauses in employment contract.

- We suggest encouraging R&D activities by allowing to UAX researchers to be inventors in patents, and this right must be recorded in the contracts.
2. Correction of the Minor Deficiencies

EAEVE Visitation identified some minor deficiencies that have either been individually corrected or are included in the correction of a major deficiency, or there is an on-going process in place in order to correct them:

2.1. Changes in anatomy curriculum designed to attend EAEVE recommendations: There has been an increase in the hours dedicated to topographical anatomy in the form of lectures (24), with their assigned seminars and complemented lectures, as well as the number of dissections (11 weeks) and necropsies. There has been a new teacher appointed to be responsible for the subject and a redistribution of hours enabling surgeons and clinicians to actively participate in the teaching of anatomy from a clinical standpoint.

2.2. Changes in agronomy teaching designed to attend EAEVE recommendations: agronomy is taught in the first semester of the second year with 4 ECTS. It was wrongfully not presented to the evaluation committee on the first visit, but its curriculum has been revised and updated.

2.3. Changes in meat inspection training designed to attend EAEVE recommendations: curriculum hours have been increased for obligatory practical training in ante- and post-mortem meat inspection.

2.4. Changes in case-load designed to attend EAEVE recommendations: case-load in most species has improved since the last Visitation and is improving greatly in small animal and equine. VFUAX has implemented measures to improve the number of food-producing animal cases (mentioned in major deficiencies).

2.5. Changes in e-books and e-journals to attend EAEVE recommendations: the number of e-books and e-journals available to students via intranet has increased and the library has gained access to new resources such as CLINICALKEY and Pro Quest central.

2.6. Changes in formal training for teachers to attend EAEVE recommendations: teachers are now given the opportunity to receive training in different teaching computer applications (such as Blackboard, Flipboard, Moodle, ALF or ABP), including online courses provided by UIAX.

2.7. On-going changes to attend EAEVE recommendations:
- Teachers: the new policy of UAX regarding research will boost the number of teachers holding a PhD as it is included in the strategic plan. The number of part-time teachers is being reduced, and the hours of the existing ones are being increased to also attend national agencies recommendations.

- Official residency programs: the increase in case-load will improve our ability to offer approved residencies in the future. Human resources has a renewed compromise to direct new hiring efforts towards Diplomates, improving the chances of having approved residencies.

- The new research strategic plan will promote the publication in international peer review journals in most disciplines.

- There is a persistent lack of a formal student organization in order to propose their representatives in the relevant committees, but students are encouraged to elect by voting their representative for the Quality Assurance Committee.

3. ESEVT Indicators:
<table>
<thead>
<tr>
<th>Raw data from the last 3 full academic years</th>
<th>Year -1 (16)</th>
<th>Year -2 (15)</th>
<th>Year -3 (14)</th>
<th>Mean</th>
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<td>1. n° of FTE academic staff involved in veterinary training</td>
<td>128,15</td>
<td>115,4</td>
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</tr>
<tr>
<td>2. n° of undergraduate students</td>
<td>1113</td>
<td>845</td>
<td>672</td>
<td>876,67</td>
</tr>
<tr>
<td>3. n° of FTE veterinarians involved in veterinary training</td>
<td>98,15</td>
<td>85,5</td>
<td>76,05</td>
<td>86,57</td>
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<td>4. n° of students graduating annually</td>
<td>104</td>
<td>126</td>
<td>120</td>
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<td>5. n° of FTE support staff involved in veterinary training</td>
<td>78,7</td>
<td>70,7</td>
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<td>70,1333333</td>
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<td>6. n° of hours of practical (non-clinical) training</td>
<td>1248</td>
<td>1153</td>
<td>1153</td>
<td>1184,666667</td>
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<tr>
<td>7. n° of hours of clinical training</td>
<td>751</td>
<td>751</td>
<td>751</td>
<td>751</td>
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<tr>
<td>8. n° of hours of FSQ &amp; VPH training</td>
<td>650</td>
<td>620</td>
<td>600</td>
<td>623,333333</td>
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<td>148</td>
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<td>78</td>
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<td>10. n° of companion animal patients seen intra-murally</td>
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<td>6558</td>
<td>5994</td>
<td>6490,333333</td>
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<td>11. n° of ruminant and pig patients seen intra-murally</td>
<td>54</td>
<td>43</td>
<td>31</td>
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<td>12. n° of equine patients seen intra-murally</td>
<td>356</td>
<td>345</td>
<td>293</td>
<td>331,333333</td>
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<td>13. n° of rabbit, rodent, bird and exotic patients seen intra-murally</td>
<td>145</td>
<td>98</td>
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<td>18. n° of visits of poultry and farmed rabbit units</td>
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<td>5</td>
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<td>188</td>
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<td>32</td>
<td>30</td>
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<td>105</td>
<td>77</td>
<td>101,3</td>
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<td>23. n° of FTE specialised veterinarians involved in veterinary training</td>
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<td>5</td>
<td>5</td>
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<td>24. n° of PhD graduating annually</td>
<td>13</td>
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<td>1</td>
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The boxes within the red frames must be filled in by the Establishment (the other values will be automatically calculated).
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<tr>
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<tbody>
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<td>11 n° of FTE academic staff involved in veterinary training / n° of undergraduate students</td>
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<td>0.16</td>
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<td>12 n° of FTE veterinarians involved in veterinary training / n° of students graduating annually</td>
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<td>0.152</td>
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<td>0.94</td>
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<td>0.035</td>
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<td>1184.667</td>
<td>905.67</td>
<td>595.00</td>
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<td>15 n° of hours of clinical training</td>
<td>751.000</td>
<td>932.92</td>
<td>670.00</td>
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<td>287.00</td>
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<td>68.00</td>
<td>28.80</td>
<td>49.200</td>
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<td>18 n° of companion animal patients seen intra-murally / n° of students graduating annually</td>
<td>55.631</td>
<td>70.48</td>
<td>42.01</td>
<td>13.622</td>
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<td>19 n° of ruminant and pig patients seen intra-murally / n° of students graduating annually</td>
<td>0.366</td>
<td>2.69</td>
<td>0.46</td>
<td>-0.098</td>
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<tr>
<td>110 n° of equine patients seen intra-murally / n° of students graduating annually</td>
<td>2.840</td>
<td>5.05</td>
<td>1.30</td>
<td>1.542</td>
</tr>
<tr>
<td>111 n° of rabbit, rodent, bird and exotic seen intra-murally / n° of students graduating annually</td>
<td>0.826</td>
<td>3.35</td>
<td>1.55</td>
<td>-0.719</td>
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<td>112 n° of companion animal patients seen extra-murally / n° of students graduating annually</td>
<td>12.571</td>
<td>6.80</td>
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<td>113 n° of individual ruminants and pig patients seen extra-murally / n° of students graduating annually</td>
<td>14.857</td>
<td>15.95</td>
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<td>8.562</td>
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<td>114 n° of equine patients seen extra-murally / n° of students graduating annually</td>
<td>3.714</td>
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<td>115 n° of visits to ruminant and pig herds / n° of students graduating annually</td>
<td>3.214</td>
<td>1.33</td>
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<td>116 n° of visits of poultry and fanned rabbit units / n° of students graduating annually</td>
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<td>0.12</td>
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<td>117 n° of companion animal necropsies / n° of students graduating annually</td>
<td>1.577</td>
<td>2.07</td>
<td>1.40</td>
<td>0.177</td>
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<td>118 n° of ruminant and pig necropsies / n° of students graduating annually</td>
<td>0.466</td>
<td>2.32</td>
<td>0.97</td>
<td>-0.510</td>
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<td>119 n° of equine necropsies / n° of students graduating annually</td>
<td>0.251</td>
<td>0.30</td>
<td>0.09</td>
<td>0.159</td>
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<td>120 n° of rabbit, rodent, bird and exotic pet necropsies / n° of students graduating annually</td>
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<td>2.05</td>
<td>0.69</td>
<td>0.176</td>
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<td>121* n° of FTE specialised veterinarians involved in veterinary training / n° of students graduating annually</td>
<td>0.046</td>
<td>0.20</td>
<td>0.06</td>
<td>-0.017</td>
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<td>122* n° of PhD graduating annually / n° of students graduating annually</td>
<td>0.016</td>
<td>0.15</td>
<td>0.09</td>
<td>-0.042</td>
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</tbody>
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[^1]: Median values defined by data from Establishments with Approval status in April 2016
[^2]: Recommended minimal values calculated as the 20th percentile of data from Establishments with Approval status in April 2016
[^3]: A negative balance indicates that the Indicator is below the recommended minimal value
[^*]: Indicators used only for statistical purpose
4. Additional information:

- Annex I: Research at VFUAX – SWOT Analysis
- Annex II: Scientific production at VFUAX in the last 5 years
- Annex III: Research lines

ANNEX I

SWOT ANALYSIS OF VETERINARY R&D POSITION IN UAX

**Strengths**

S1. UAX is a private company allowing more flexibility in negotiations than public research centers.
S2. UAX management reaffirm its commitment with R&D.
S3. High student number in UAX Veterinary College, which could favor the accomplishment of doctoral theses.
S4. Biomedicine is a high technology sector, and Veterinary Hospital has high imaging technology, surgery facilities, ...in order to collaborate with R&D projects.
S5. Facility for conducting multidisciplinary research with teachers from other areas (human doctors, engineers,...).
S6. In Madrid, there are many nearby research centers which to collaborate.

**Weaknesses**

W1. Currently few research projects at UAX.
W2. Lack of molecular and cellular research laboratories.
W3. High workload for teachers and clinicians.
W4. High number of part-time work in veterinary teachers and clinicians.
W5. Little research experience in most teachers and clinicians.

**Opportunities**

O1. The new doctoral program would encourage projects with a more ambitious R&D objectives.
O2. The daily activity of Veterinary Hospital produce large amount of data, basic in any clinical research.
O3. The Veterinary Hospital is a unique facility for conducting veterinary clinical trials and/or “clinical models” of human pathologies.
O4. Once the new laboratory is ready, it can provide new services to hospital or external companies. In addition to boosting UAX R&D.
O5. The new Spanish law regulating doctoral thesis encourages collaboration between universities and public research centers and private companies, which should be exploited.

**Threats**

T1. Strong competition in research, at regional and rational level.
T2. Little institutional support, in Spain, for R&D.
T3. Lack of R&D investment in Spanish private companies.
T4. Lack of personal motivation in R&D of many teachers and clinicians staff.
T5. Eagerness for short-term results by UAX management.
ANNEX II

SCIENTIFIC PRODUCTION ANALYSIS

Basic Research in biomedicine:

Clinical Research in Veterinary Hospital:

Farm Production Research:
ANNEX III

SUGGESTED MAIN RESEARCH AREAS

- **Microbiology Area**: led by Rosario Baquero, this area would include a multidisciplinary project developed around the "One Health" concept. Research lines would focus on antibiotic resistance and the presence of human/veterinary pathogenic viruses in animals or their parasites, including collaborations with human hospitals. UAX Veterinary Hospital has access to biological samples of pets, and veterinary teachers would also obtain samples from livestock and even wild animals. This would allow us to make a very large biological samples bank for screening of the most interesting pathogens. High throughput screening would be done in collaboration with other research centers (for example, Microbiology National Center at ISCIII). Some UAX researchers who could join this "group" could be: Rosario Baquero, Fernando Vazquez, Gustavo Ortiz, Nelida Fernandez, Gustavo del Real, Pedro Martín, Amanda Fernandez and Ana Montoya.

- **Regenerative Medicine Area**: led by Isabel Rodríguez, this area would focus on the development of Advanced Therapies. These therapies (i.e. cellular therapies) could be applied in veterinary clinical trials. In this area would be desire collaborations with private companies, public research centers, ... they would be the ones who would get the cells or devices. Some UAX researchers who could join this "group" could be: Isabel Rodríguez, Javier García-Castro, Gustavo Ortiz, Gustavo del Real, José Ángel Pardo, Ramón Vázquez, Laura Cruz.

- **Oncology Area**: led by Javier García-Castro, this area would develop multidisciplinary projects including clinicians of various specialties, and with a clear application to human clinic. In this area we will develop our specific treatments (i.e. Celyvir) and other treatments from external companies, Universities, …. One advantage in this area is the previous experience, although in an uncoordinated way. Some researchers of the UAX that could be added to this "group" could be: Javier García-Castro, Noemí del Castillo, Isidro Mateo, Ana Cloquell, Gustavo Ortiz, Fernando Vázquez.

Apart from this groups it would be desirable to promote other small and emerging groups, due to their singularity but with high potential. These groups could be:

- **Group of Primatology / Ethology**: led by Lara Carrasco, this group would focus on the ethology of diverse mammals with special interest in primates. In this regard, the UAX already has a collaboration agreement with the Zoo of Madrid and we are in
conversations with Bio-Mas Foundation and the Jane Goodall Institute. These agreements could be extended to other institutions in order to create a multicenter research network. Some researchers of the UAX that could be added to this "group" could be: Lara Carrasco, Félix Zaragoza, Eduardo Iglesias.

- **Group of Ichthyology:** led by Pablo Torrea. This group could be the origin of a "Zebrfish facility". Nowadays the third research animal most commonly used as animal models is Zebrafish. Three fish tanks are currently available in the UAX. Some researchers of the UAX that could be added to this "group" could be: Pablo Torrea.