

EXPERT PANEL REPORT

RESEARCH EVALUATION OF THE DEPARTMENT OF VETERINARY AND ANIMAL SCIENCES (IVH)

- Overall assessment of the research quality and recommendations for the future.

Based on the department's self-assessment report and the expert panel site visit in Copenhagen, November 20-23rd, 2017.

David Argyle (expert panel chair)

Marianne Sloet van Oldruitenborgh-Oosterbaan

Martin Scholten

Hannu Korkeala

Ane C. W. Nødtvedt

Introduction

The Department of Veterinary and Animal Sciences (IVH) is one of two Departments of the School of Veterinary and Animal Sciences. It covers pre-clinical, para-clinical, biomedical, and herd health and production orientated disciplines of predominantly the veterinary and animal science curricula. IVH is organized into nine sections, which are responsible for the execution of research and teaching. The department reports a current staff cohort of 32 full professors, 40 associate professors, 17 assistant professors, 31 post-doctoral fellows, 123 PhD fellows, 77 technical staff and 24 “other” research staff. The precise split between research activity and teaching of academic faculty is dependent on section.

Overall, the panel would like to congratulate the department on their research activity and also thank them for the clear and well-presented documentation. The panel would like to highlight that, although two departments, we would encourage the faculty to work hard to maintain the identity of the “Veterinary School” as this is incredibly important for stakeholder relations, alumni, staff and students.

1. THE QUALITY AND INTERNATIONAL IMPACT OF THE RESEARCH

The SER (Self Evaluation Report) reports that the research in the department is divided into 4 core themes delivered by 9 departmental sections:

- Animal Health and Production Management
- Control of Infectious Disease
- Translational and Comparative Medicine
- One Health and Public Health

The SER uses a number of metrics to define impact and international recognition, mainly focusing on grant income, publication output, citations and perceived impact on society.

Observations

- Grant income, publication output (numbers and citation) for the department is strong.
- The research is impacting on important societal needs (e.g. Antimicrobial Resistance (AMR))
- The quality of the research is reflected in the high QS ranking of the school and also the reputation internationally.
- The successful bid for giving research and research advice for the Danish Veterinary and Food Administration represents an excellent opportunity. At present, it is difficult to identify from the SER how this award will be utilized strategically within the department or as leverage.
- The department has a complex structure with 9 sections and then subsections. The sections are of varying size and vulnerability in terms of funding.

- The panel noted that the sections are cooperating well, but not seeking for strategic integration. The Department strategy with joined Research area's is not well adopted by the sections yet.
- The panel noted that some sections are at risk in only having a small number of core funded staff. There is a heavy reliance on external funding to maintain critical mass in many of the sections.
- The SER gave an excellent overview of the department's achievements, but a strong forward-looking strategy should be developed which encompasses the 4 main research themes.

Commendations

The Department is commended for the international quality of its research and its impact on society.

Recommendations

- The department develops a research vision and strategy which takes into account academic freedom and supports the educational activities of the veterinary school (the two core departments). Each section should have a research strategy that supports the 4 identified joint research areas of the department.
- The strategy should include a clear plan for how the recent contract with the Danish Veterinary Food Administration (DVFA) will be capitalized on and how the funding will be best utilized.
- The position of UCPH/IVH in the Danish landscape of Animal Sciences (with Aarhus) and Veterinary Sciences (with DTU-VET) needs a strategic positioning plan to enhance the value of the scientific domains within UCPH/IVH. Especially now governmental veterinary services will be transferred from DTU-VET to UCPH in 2020. This requires recruitment of experts in the domain of diagnostics, surveillances and virology; this may include the access to BSL lab facilities for that type of work.
- We would encourage building on the strengths of the department and seizing opportunities. The plan to increase expertise in virology and epidemiology would seem eminently sensible. However, we would recommend a clear plan for how "big data" will be handled and stored and how the department will assimilate data from multiple sectors (e.g. genetics, phenotypic data, pathology etc.) to support the emerging concepts of precision agriculture and remain competitive. This may require investment in physical infrastructure as well and people with appropriate skills. It may also be worth considering convening a small "innovations" group as a sub-committee of the research group who could consider horizon scanning for new technologies and how these will be embraced across the department.
- Maintaining and increasing the opportunities for collaboration across sections and between departments. Consider "pump priming funds" for collaborative projects in

the 4 strategic research areas, or deploying joint PhD students to promote collaboration.

2. RESEARCH-BASED EDUCATIONAL ACTIVITIES

Observations

- The department has a strength in teaching and there is good alignment of teaching and research activity
- The number and quality of the PhD courses organized were excellent
- There is limited space for more “on campus teaching”

Commendations

- The excellent pharmacology/Toxicology programme in the section of experimental animals should be highly commended.
- The number of PhD students and quality are excellent

Recommendations

- Consider expanding taught masters programmes in line with research capability
- Capitalize on the recent contract with DVFA to support teaching activities
- Consider opportunities for delivering CE and specialized programmes to industry
- Consider expanding research opportunities for undergraduates to do focused research projects.
- Develop a strategy for maintaining the excellent PhD Tox/Pharm (Lifepharm) programme through external funding and industrial partnerships.
- Building a vibrant PhD community. The panel were impressed with the number and quality of the PhD students. They were very positive about the support in their sections and from their supervisors. However, there was a clear request that the student experience could be significantly enhanced by:
 - Encouraging the formation of a departmental PhD society /community.
 - They would benefit from having “a voice” with senior departmental leaders and an appropriate communication channel. This may be as simple as having a “departmental Post-PhD email list” which indicates opportunities and events and a means by which they can form a community.
 - One major issue has arisen, especially for international PhD students is accommodation. When you arrive; you need a 'permanent address' before you can get a CPR number and without that number you can do nothing. This probably needs to be addressed at University or Faculty level.

3. PRIVATE AND PUBLIC COLLABORATION

Observations

- The private and public partnerships are strong and there are extensive links with industry partners.
- These links strongly enhance the research environment and the profile of the department.

Commendations

- The department is to be commended on its partnerships and relationships which is a reflection of the quality of the staff and the research excellence.

Recommendations

- Industry collaboration is strong and growth in these areas of collaboration should be encouraged through the research strategy of the department.
- Consider novel approaches to recruitment and retention of staff such as having faculty with shared industry appointments.
- Industry funded PhD's may also be enhanced by arranging periods of externship based in industry environments.
- There is a need for a clear strategy regarding which partnerships to develop and which to turn down.
- We would also recommend that ethical considerations play a role when choosing external partners. For example, when considering running clinical trials in other countries and where there could be a potential for reputational damage.
- Overall, we would also suggest developing a research ethics panel (which may already exist) to oversee the ethical aspects of research and research partnerships.

4. IMPACT AND INNOVATION

Observations

- The department assesses impact and research excellence in a traditional way by considering journal impact factor, citations, international collaborations and research income.

Commendations

The department is to be commended on its impact and innovation.

Recommendations

- Publication numbers and citation are very good. Consider supporting investigators through mentoring to reduce overall number, but enhancing quality (e.g. fewer papers with more high-profile data, in higher impact journals)
- Consider other measures of impact such as:

- Societal impact related to sustainable development by disruptive insights in the domain of veterinarian and animal sciences
- International impact by having leadership position in international scientific consortia.
- Consider developing a set of impact factor case studies that could be published on the departmental website and raise the profile of its strategic importance.

5. GOVERNANCE AND ORGANIZATION

IVH is organized into nine sections, which are responsible for the execution of research and teaching.

Observations

- As stated above, the department has a large and complex structure that is at risk of developing research silos
- The new department would benefit from having a clear research strategy and direction based on its vision, current expertise and in sympathy with the educational programmes of the school.
- After large organisational changes, it is important to ensure well-being at work and motivation of the personnel. It is essential to take care of the good micro-environment of the personnel to have the motivation level as high as possible.

Commendations

- The department is commended on its significant research strengths and innovation of its sections

Recommendations

- While the committee observed the complexity of the departmental structure we also appreciated the sensitivities around ensuring stability and inclusivity. However, as the department evolves it should consider rationalizing some of the sections and perhaps merging some to ensure a structure in line with the research and educational needs of the school. Larger, sections may benefit by gaining critical mass for larger grant applications and ensure that no research silos are encountered.
- We would encourage the department to develop a risk register which covers succession planning. This is especially important in areas where there is significant risk (sections with a high proportion of soft funded staff). Consideration should be given to the possibility to support a business case for extra staff based upon extra teaching activities through taught masters programmes (e.g. in “at scale” On Line Distance Learning (OLDL) programmes).
- Diversity of staff is a critical issue. The top (professors) are mainly 50+ Danish men. The pool for recruitment of top talent is promising, also from a diversity perspective. It

would be helpful to establish a tenure track system as part of a strategic succession planning to ensure a faster career development with a much better gender and internationality balance. Specific measures are needed to ensure the exploitation of this pool of potentials (human capacity).

- Recruitment and retention of high quality staff needs special attention; especially in the domain of virology and bio-omics/bio-information. Also see notes above relating to industry interaction.
- Building a vibrant post-doctoral community. The post-doctoral scientists we met were excellent individuals and contribute massively to the overall research programme of the department. As is the case in most countries, they suffer the uncertainties of funding. Their programmes could be enhanced by:
 - Encouraging them to form a departmental post-doctoral society which could organize events and speakers. This would probably benefit from being across the two departments that make up the veterinary school.
 - They would also benefit from a uniform mentoring programme and a uniform approach to them gaining teaching and teacher training experience
 - They would benefit from having “a voice” with senior departmental leaders and an appropriate communication channel. This may be as simple as having a “departmental Post-doc email list” which indicates opportunities and events.
- Keep precise track of the career development of the alumni, and stay connected, they are the ambassadors and potential funders of their Alma mater.

6. RESOURCES AND CAPACITY

Observations

- The current model devolves budget control to the sections in the department.
- There were varying discussions relating to the allocation of funds and the metrics used for this.
- There was a general concern over the vulnerability of some sections that had large numbers of staff of “soft money” contracts
- There was discussion around the funding landscape and the importance of grant funding to maintain critical mass in sections.
- As the research landscape and technologies evolve, there is a clear requirement for strategy to decide what equipment and resources to invest in locally, and those that should be utilized from hubs or external partners.
- There is clear concern over loss of large animal facilities

Commendations

- The department’s devolved and transparent structure gives academics control of their sections.

Recommendations

- Consideration should be given to the metrics used to allocate research budget. Number of publications could be difficult to reconcile against quality and impact.
- The basic funding is depending on quantitative parameters related to productivity, which is not incentive for a qualitative focus on impact:
 - Scientific impact by publishing in journals with high impact factor
 - Societal impact related to sustainable development by disruptive insights in the domain of veterinarian and animal sciences
 - International impact by having leadership position in international scientific consortia.
- Balancing the internal, basic funding, and external project funding is essential. Basic funding can partly be used for strategic investment in the department. Considerations for external funding;
 - The share in EU programmes can be extended by building up strategic partnerships (see point 3). The UCPH faculty of Science is a good practice of widely recognized European leadership. Be active in COST and other Concerted Actions is a good first step up.
 - The importance of sector levees for the sustainable innovation of the livestock sector should be secured, by political lobby
 - The cooperation with private partners can be intensified by joint R&D programmes with joint PhD's
- Some units have a heavy teaching commitment (e.g. Anatomy) and some have very little. The Anatomy teaching is very labor intensive and care should be given that appropriate allocation of funds for teaching takes this into consideration.
- As described above, a risk register which focuses on succession planning will be important going forward.
- A strategic discussion is required on what technologies to keep in-house, and those to that can be left to external partners or commercial entities.
- A strategic plan of action is required around the research large animal facilities and what other facilities could be used if these close. For larger animal facilities, a national plan could be developed with stakeholders.