EnvA
École nationale vétérinaire d'Alfort

Self-Evaluation Report

Prepared for the visit of the

European Association of Establishments for Veterinary Education

January 2015

Summary

Introduction

General information

The Ecole Nationale Vétérinaire d'Alfort (EnvA) is one of the twelve French higher education and research institutions supervised by the Ministry of Agriculture.[1] Over the last 10 years, these institutions have been restructured, leading to groups of institutions.

Although the EnvA has remained an independent institution, maintaining its status as a public administrative body, the school was an actor in the evolution of higher education and research in France and in the changes in veterinary sciences that have emerged in recent years:

- EnvA participated in the restructuring of agriculture and veterinary higher education, forming a team with AgroParisTech agronomy school in the pole of Life and Environment Science and Technologies. Then, the Law of 9th July 2014 on the future of agriculture, food and forestry sciences means that the School will become a part of the Institute of Agronomy, Veterinary and Forestry Sciences of France, which aims to strengthen cooperation among institutions.
- In addition, the School was a founding member of the local pool of research and higher education, and more recently, the Community of Universities and Establishments Paris-Est, therefore creating strong cooperation with local universities and other educational institutions.

These different elements are the means by which the school aims to develop the framework "one world, one health" advocated by the World Organization for Animal Health (OIE).

To meet the challenges it faces, the school has set up an organization and governing system that has evolved over time, and marked in particular by:

- the creation of an Teaching and Student Life Office (2012),
- the creation of a real estate Office (2013),
- the creation of an Office for Research (2012), structuring research in two main strategic areas (2013).

The school has experienced financial difficulties until 2013 because of, on one hand, a lack of funding and poor accounting controls and on the other hand, the dilapidated state of some buildings, including historical ones (19th century), that are old, difficult to maintain and expensive due to a very poor energy balance. With the assistance of the supervising ministry and the mobilization of staff and students, there has been an economic turnaround which has restored the financial balance of the School. The effort, however, must be sustained, and maintaining balance depends on the implementation in the coming years of the planned property renovation scheme.

Study program and enrolment

The publication of a decree published on the 20th April 2007, has meant that the EnvA has extensively modified its curriculum, as have the other French Veterinary Schools, to incorporate the requirements of the "new veterinary studies curriculum". The two major modifications are:

- the creation of a practical and clinical 4th year, which is divided into two equal semesters, one for small animal and equine clinics, and the other for production animals and veterinary public health. Therefore, the 4th year students are divided into of two half-year groups. One group follows small animal and equine rotations for a semester and then production animals and public health rotations for the second semester while the other half-year group does the opposite.
- an overhaul of the 5th year programme of tracks to satisfy the requirements of the decree, where the themes and duration are defined. The tracks remain for the students and pertinent in terms of pre-specialisation.

Evolutions in the curriculum were also dictated by two major elements:

- Firstly, the EnvA needed to take into account the requirements of the Agriculture ministry concerning the latest developments in the "new veterinary education curriculum" (see the document "Vingt-six mesures pour un plan de modernisation de la formation initiale

[1] With co-supervision of the Ministry in charge of Higher Education and Research

vétérinaire française" written by the "Comité à haut niveau" commissioned by the Direction Générale de l'Enseignement et de la Recherche (DGER))

- Secondly, the EnvA needed to adjust its curriculum to satisfy the recommendations formulated internationally by the World Animal Health Organisation (OIE) defining the minimal expertise for young recently graduated veterinary surgeons (see the document published by the OIE in 2012 "OIE Recommendations on Minimum Competencies for Day 1 Veterinary Graduates").

In this context, the school has integrated its program within the European area of higher education, organizing its initial veterinary curriculum into 10 semesters, consisting of course units which are equivalent to a specified number of European Credits Transfert System (ECTS).

In terms of the educational organization, the EnvA is constantly seeking to improve its education, and this included in recent years:

- The development of new information and communication technologies, driven by the inauguration of the digital platform called "EVE" (using the Moodle Learning Management System);
- The development of active teaching methods;
- The inclusion of new disciplines, especially management sciences;
- The improvement of a "competence approach", which will be strengthened as part of the educational changes which are currently underway, notably based on intersections between disciplines, a clear definition of the day-one skills and a change in the evaluation process.

Infrastructure

Some of the 28 buildings and the floor on the Alfort campus area of the School are classified in the National Inventory of Historical Monuments.

After a long period where there was no investment in infrastructure, it was decided to completely renovate the site during the period 2007-2012 in a programme called the "Grand Alfort Project". This project began with the construction of three buildings: the Biomedical Research Centre (CRBM, 2008), the Small Animal Clinic of the Veterinary Teaching Hospital of Alfort (CHUVA-AC, 2009), and the Camille Guérin building (2015). The headquarters of the French agency for food safety (ANSES), which opened in 2014, has also been built on the School's site. Unfortunately, the other parts of this project could not be completed, because of budget restrictions.

In 2014, a new real estate plan was developed, and it involved the collaboration of the school, its supervising Ministry and other State services. It should mean that by 2020 the site is totally restructured. Il will bring together activities which are spread out over the site and promote synergies (academic departments, laboratories), and reduce operating costs due to the obsolete nature of certain buildings. Its completion depends on obtaining funding in the 2014-2020 State-Region plan. In this real estate plan, six buildings are to be totally destroyed and three new buildings will be built.

After returning to the budgetary balance, some buildings and infrastructures have been partly renovated in 2013 and 2014, in order to restore satisfactory safety conditions. As stated earlier, the renovations undertaken have not yet reduced the operating costs of these buildings, due to their old-fashioned design.

Chapter 1. Objectives

1.1. Factual information

1.1.1. Overall goals

Legal framework

The Veterinary School of Alfort is one of the 12 agricultural and veterinary higher education institutions supervised by the Ministry of Agriculture. Article L123-1 of the French *Code de l'Education* states that the EnvA is also under the co-supervision of the Ministry in charge of Higher Education and Research, with the aim of consistency and coordination in public policies.

As a corollary to its tutelary connection, the School falls within the provisions of the *Code rural et de la pêche maritime*, which defines, in its article L812-1, the missions of higher education institutions under the supervision of the Ministry of Agriculture:

«... The public agricultural education:

1. provides training in agriculture, forestry, aquaculture and seafood, processing and marketing of these products, food industry, agriculture-related industries, health and plant and animal protection, hygiene, quality and safety of food, planning, development, management and protection of rural land, forest, water, natural environment and landscape;
2. participates in the policy for science development through basic research, applied and clinical research;
3. conducts research, innovation and engineering in the fields of education and training;
4. contributes, in collaboration with relevant agencies, to scientific and technical intelligence, technological innovation and development to the promotion of research results;
5. participates in the dissemination of scientific and technical information;
6. contributes to the implementation of international scientific, technical and educational cooperation. »

In addition, the field of education delivered by veterinary schools is specified in article R 812-5:

« The education provided by the national veterinary schools focuses on:

1. Health, hygiene, medicine, pharmacy and animal surgery;
2. The production of animals and the livestock economy;
3. Production and control of animal and animal derived products;
4. The relationship between animals, humans and their environment and their impact on public health.

National veterinary schools take part in research in these areas. »

The School project

This general framework being defined, the School set its own goals in a document called the "School project". This project involves all of its structures and missions, and identifies priority actions to be implemented in order to achieve the aims.

The School project currently in force, which covers the period 2014-2017, is designed to carry on and amplify the recovery of the School and to assert its roots in its territory and in the international landscape.

It consists of eight strategies:

1- *Modernize the initial training of veterinarians and develop their training throughout life, within the context of "Vet for health, Vet for food, Vet for the planet," according to a quality approach and using today's technologies and methods*;

2- *Improve the visibility and attractiveness of research activities, encouraging and stimulating partnerships;*

3- *Making our hospitals and technology platforms leaders in terms of scientific competence, equipment, customer relationships and educational support;*

4- *Allow student life to promote individual and collective development, development of entrepreneurship and openness to others;*

5- *Change the organization of work and relational modes to optimize available resources, to ensure the well-being at work and the sense of belonging to the community of the school;*

6- *Respond to societal demands, including developing a proactive policy of sustainable development based on sober environmental components and social openness, developing student and personal taste to dare, to be open to others, making available to the greatest number its heritage, knowledge and know-how;*

7- *Encourage actions of scientific and technical support and expertise in our areas of competence, by a mean of a better valuation, a readable presence and an appropriate communication;*

8- *Develop awareness and attractiveness of EnvA by an ambitious development of its local, national and international networks.*

The school project was formulated by the working community of the institution (staff and students). The community expressed itself via the intranet site of the School by submitting keywords for the different axes. On this basis, working groups of volunteers met on several occasions to develop proposals for objectives and actions. These proposals were finalized by the management team and then presented and discussed within the framework of the bodies of the institution (steering committee, technical committee, board of teachers, scientific advisory board, board of education and teaching) before being approved by the governing board.

The general political guidelines and the school project form the basis of negotiations with the Ministry of Agriculture for the contract of objectives and performance that will be signed for the period 2015-2019.

The guidelines for training

The professional standards and the general organization of the veterinary training are standardized and published in a statutory text (decree of 20th April 2007 relating to veterinary studies). Each veterinary school is required to implement these standards.

However, each school can modify the organization of the course (disciplinary distribution, teaching units,…).

At the EnvA, the first of the eight above mentioned strategies of the school project focuses on how teaching will evolve. This objective has already been started and aims to develop the competence approach to better include veterinary training within the European context and to improve the readability and coherence of the curriculum (see Chapter 4).

For its development, this educational evolution, based on the basis of guidelines issued by the Dean, met broad consultation, was discussed within department councils, working interdepartmental groups, the academic board and the board of education and teaching.

The Agronomy, Veterinary and Forestry Institute of France

The EnvA is a member of the Agronomy, Veterinary and Forestry Institute of France.

The creation of the Agronomy, Veterinary and Forestry Sciences Institute of France, registered in the law for the Future of Agriculture, Food industry and Forestry" (2014), is designed to enhance the readability, efficiency and coordination of existing institutions of higher education and agricultural research, especially in terms of defining shared strategic directions and cooperation. It will promote the creation of a strong pole, including the construction of joint projects in the field of veterinary research and education.

The community of universities and establishments (CoMUE) – doctoral training

The law of 22 July 2013 on higher education and research is already improving the visibility of French higher education, especially at the international level, by a better structuring within France. For this purpose, institutions in the same geographical area can be grouped within university communities and establishments to better coordinate and develop common actions, which are delegated. The EnvA is thus one of the founding members of the CoMUE "Université Paris-Est", which also includes the Universities of Paris-Créteil and Paris-Marne-la-Vallée. The CoMUE has the authority to organize doctoral programs by delegation of the institutions that compose it.

Beyond this central prerogative, its coordination has resulted in the definition of cross-disciplinary poles of excellence, which involve EnvA: "health and society" and "city, environment and engineering."

The CoMUE is poised to establish with the Ministry of High Education and Research the "site contract". Its development has been the subject of a broad consultation, involving the management teams and staff of the different institutions.

1.1.2. Revision of the objectives

The School project covers a fixed period of 4 or 5 years. After this period, an assessment will be performed. The length of the project was taken into account during its preparation. Therefore, in its construction, the School project is developing specific tools, so that its follow-up will be easy. In order to monitor the objectives, a series of project timelines and indicators were defined for each the actions and these will be measured annualy. In addition, specific measures concern certain missions:

- For training, a mandatory evaluation of teaching by students was set up (see 5.1.4).
- For research, specific indicators are established by the Ministry of Agriculture, and calculated annually.

Finally, beyond the evaluation by the EAEVE, the institution also subject to one organized at the national level for all institutions of higher education and research by the High council for evaluation of research and higher education (HCERES).

1.2. Comments

The previous period (2007-2012) was marked by positive elements, illustrated in particular by the construction and running of three new buildings: the center of biomedical research (CRBM) in 2008, the Alfort Veterinary Teaching Hospital for companion animals (CHUVA-AC) in 2009 and BCG (Building "Camille Guérin") planned for the beginning of 2015. This period, however, also saw major difficulties, including the abandonment of the overall construction project originally intended (Grand Alfort Project) and major budget risks.

The current School project is focused on a key strategy for the future of the establishment, the maintenance and the development of excellence in its education and its research, its roots in its territory and scientific environment, and its position in the international context. To this end, the entire community of the school and the ministry were already highly mobilized to initiate a financial turnaround that is showing results.

1.3. Suggestions

The continuation and sustainability of financial recovery requires the implementation of key structural actions, included in the School project and described in more details later in the report:

- The real estate plan, which should leading up to 2020 see continued restructuring and rationalization of the site, grouping together activities which are spread out over the site to promote synergies (academic departments, laboratories etc.), and reducing operation costs related to the age of some buildings.
- The teaching evolution implemented since September 2014 for the first year of the curriculum, and it must continue for the entire curriculum.
- The development and systematization of quality insurance and continuous improvement process.

In addition, anchoring the EnvA in the CoMUE Paris-Est is an important asset for the development of its doctoral training and the development of its research. This should be a means to develop training to and by research and increase the number of doctoral students in the research teams of the institution.

Chapter 2. Organisation

2.1. Factual information

2.1.1 Details of the faculty

Name of the faculty: "Ecole nationale vétérinaire d'Alfort", "EnvA", Alfort Veterinary School

Address: 7 avenue du Général De Gaulle – 94704 Maisons Alfort Cedex, FRANCE

Phone: + 33 1 43 96 71 80

Email: direction@vet-alfort.fr

Website: http://www.vet-alfort.fr/

Dean: Prof Marc Gogny

The Alfort Veterinary School is a Higher Education and Research Establishment under the Ministry of Agriculture, Food-Industry and Forest (MAAF - Ministère de l'agriculture, de l'agroalimentaire et de la forêt).

Veterinary schools in France do not belong to any university as they are independent schools (as are other major higher education establishments for engineer or business education programs).

As members of the new Agronomy, Veterinary and Forest Institute of France (IAV2F), the four veterinary schools in France decided have to develop their cooperation (merging with other technical establishments, bringing them closer to university structure).

As already stated in chapter 1, Alfort School is also a founding member of the Community of Universities and Establishments (CoMUE) Université Paris-Est.

2.1.2. Details about the competent authority overseeing the Faculty: Ministry in charge of agriculture

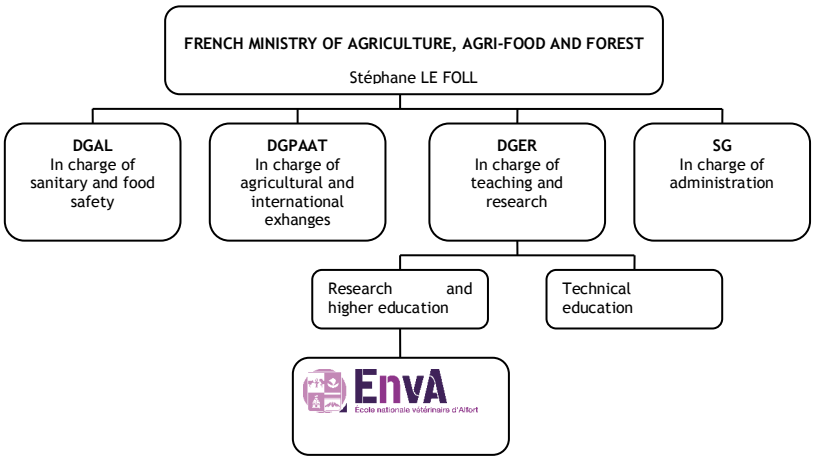
There are four technical departments in the Ministry, and their actions are coordinated by the *"secrétariat general"* which is in charge of human resources, financial and legal affairs, communication, and other supporting activities.

One of the four departments is the Department for teaching and research (Direction générale de l'enseignement et de la recherche - DGER). See hereafter the organisational chart of DGER.

The mission of the team for higher education is the following:

- Define policies for higher education, research and innovation;
- Organise and supervise the governance of each higher education establishment, including the Alfort School.

Fig. 2.1. Overall organisation of the Ministry of Agriculture, Food Industry and Forest

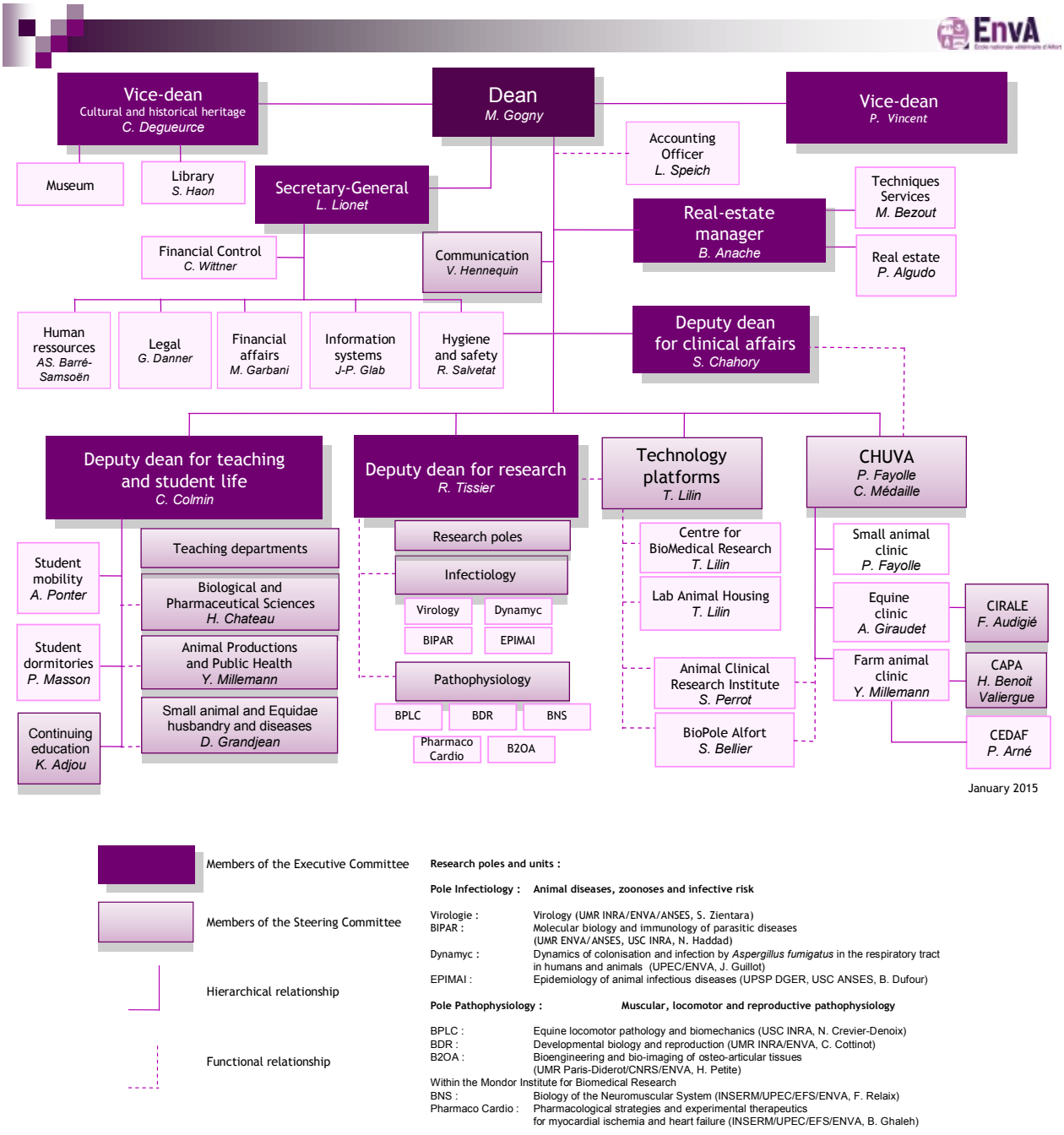


The Dean of the school is appointed by the Minister for five years, after a formally consultation of the Governing Board of the institution. This is a statutory position that is confirmed by a ministerial decree.

2.1.3 Details about the Institution organisation

The Dean is in charge of building his own organisation at the Faculty. Two positions are mandatory in the organisation (Teaching & student life and Research). All new positions (either managerial or non-managerial) have to be agreed by the Ministry. Hereafter is the organisational chart of EnvA, as put in place by the Dean.

Fig. 2.2. Overall organisation of EnvA



There are three teaching departments organising the education program:

- Department of Biological and Pharmaceutical Sciences (DSBP)
- Department of Carnivore and Equine Husbandry and Diseases (DEPEC)
- Department of Animal Production and Public Health (DPASP)

Each of them is headed by a Department manager (and a Deputy) elected for 3 years by members of the Department, including teaching, technical and administrative staff as well as student representatives.

The Department manager and his council are in charge of defining and coordinating:

- Teaching content and methods;
- All activities connected to teaching, diagnosis, studies or services when the depatment's disciplines are involved;
- Internal and external communication within Department;
- Administrative and Financial management for the Department;

2.1.4 Details about the councils and committees

The School is directed by the Governing Board (or Administration Council), and the role of the Dean (with the executive committee) is to implement the strategic decisions taken by the council.

The role and members of different boards, councils and committees of the School are defined on the one hand by a regulatory framework ("Code rural et de la pêche maritime") and on the other hand by an internal document ("réglement intérieur").

The **Governing board** is made up of 36 members, representatives from the academic staff (elected), support staff (elected), students (elected), national public and external bodies (called qualified people appointed by the Ministry). The veterinary profession is represented within the external bodies. The President and Vice president are elected for 5 years from the qualified people.

The **Executive committee** is made up of the top managers appointed by the Dean. Its role is to assist the Dean in taking strategic decisions.

The **Steering committee** is made up of members of the executive committee, the department managers, the managers of distant sites and of the main units of the school, and representatives of the research poles. Its role is to assist the executive committee in the creation of projects, preparation of councils and committees, and the execution of actions decided by the Governing Board.

The **Teaching and student life Council** is made up of 20 elected members from academic and support staff as well as student representatives. The Governing board nominates some external people (for example representative of the veterinary profession). Its role is to make proposition on anything regarding student life, including programs and student evaluation.

The **Academic council** is made up of 40 members, elected representatives from academic staff. Its role is to monitor the curriculum and the results of the examination process.

The **Departmental councils** are made up of elected representatives from the department's staff and students. Its role is to assist the department managers in deciding what actions and projects can be taken concerning the conception, organisation and coordination of the teaching performed by the department.

The **Scientific council** is made up of 20 members, elected representatives from staff, from students involved in research training, and external people nominated by the Governing board. Its role is to make proposition on strategic initiatives on research.

The **Technical committee** is made up of 10 members, elected representatives of staff. Its role is to guarantee working conditions and welfare for the EnvA's staff.

The Hygiene and Safety committee is made up of 10 members, elected representatives of staff. Its role is to guarantee working conditions and welfare.

The **Ethics committee for animal experimentation** is a shared structure with our partners (ANSES[2], UPEC[3]). It is made up of professionals from research, veterinary professionals and technical people involved in animal accommodation and care. Headed by a President and a Vice president, its role is to authorise and supervise any programs based on animal experimentation.

2 ANSES: French Agency for Food, Environmental and Occupational Health & Safety

3 UPEC: Paris East-Créteil University

The Ethics committee for clinical research is made up of academic staff (veterinarians or non-veterinarians, clinicians or non-clinicians), specialists and representatives from animal protection bodies. Its role is to validate any protocol for clinical research.

2.2. Comments

The challenges that the EnvA has to face require an optimization of resources. It also requires a coherent mobilization of all its stakeholders and an appropriate organization for sustainable collective dynamics, respecting well-being at work.

In this context, various achievements can be highlighted:

- An in depth modification of the organizational chart improving its functionality
- An overhaul of the way the budget is organized,
- An initiation of a quality approach.

On the basis of the recommendations contained in different official written reports made about the EnvA, the School recovered budget balance, and dynamic projects were revived (CPER preparation, educational development, completion of many infrastructure projects, *etc.*). Some of the findings identified in reports as operational difficulties are crucial to the sustainable success of the recovery and are still relevant.

2.3. Suggestions

By continuing the actions of the previous School project, the EnvA now has a well established an operational organization chart. It is now necessary to strengthen this organization by a better definition of the tasks of each structure, and link operation with a consolidated human resources policy. Unit missions and objectives once defined over a multiannual time-lapse will allow to planify personal competences evolution and to improve human resources management. The consolidation should mobilize a series of methods and tools: management of jobs and skills, job descriptions, job interviews, computer tools, etc.

Effective functioning must also be based on a contractual policy between the management and the different entities of the institution. In this context, the role of managers should be strengthened.

Quality insurance is also a major means by which to ensure user satisfaction with regard to the implementation of the various missions of the School and with a view to continuous improvement. Currently, few procedures are formalized, and their shape is heterogeneous. With a pragmatical approach and the involvement of users in the aim of understood and effective implementation, it will therefore become a systematic approach to draft and implement the necessary procedures for the establishment.

Chapter 3. Finances

3.1. Factual information

3.1.1 General information

School's current financial model

Since the School is not part of a university, it has an independent budget. It operates a calendar-year based budget, from January 1st to December 31st.

The budget, run on an activity-based costing model, is elaborated in several steps.

The first step is to establish an initial budget, during October–November of the *n-1* year. It is based on expenditure estimations from the different responsibility centres of the School, and, if necessary, adjusted according to the level of expected revenue. The dean proposes this budget to the Governing Board for discussion. Once the initial budget adopted by the Governing Board, it can be executed starting the 1st of January of the next year.

The budget is then rectified twice or three times per year, to adjust for true income and expenditure.

Allocation of funds

Around 62% of the funds (including public sector salaries) come from the Ministry of Agriculture.

In addition to the official staff, paid by the Ministry, it also allocates to the institution an operating grant. The grant has decreased in recent years by an average of 2% per year, due to state budget cuts. But the EnvA received in 2013 and 2014 exceptional and significant additional grants that allowed it to overcome its financial difficulties.

A grant is also given to support research activities. It is allocated according to criteria used to assess the quality of research activities in the establishment.

For investments, requests are sent to the Ministry, which distributes the available budget among its institutions, according to the priorities that it has defined. In recent years, the EnvA benefited from substantial grants, which helped to build a new building (13 M € for Camille Guérin building), and to start the renovation of the site. However, these grants are still not enough to renew all the many old buildings, which continue to weigh heavily on the school due to their operating costs (heating ...)

For investments, other sources of credit must be found. Money comes in particular from the Regional Council, which funded the construction of the CHUVA. Funding can also be obtained from the multi-annual framework of the "Plan Contract State-Region" (CPER), where selected projects are funded equally by the State and the Region.

Each year, the employment staffing and investment requirements are negotiated during a strategic meeting between the institution and the Ministry.

At the School, allocation of funds is decided by the Dean, based on demands and requirements of the different responsibility centres, and submitted for the approval by the Governing Board.

3.2.2 Information on extra income

Percentage of extra income

In addition to grants from the State and local authorities, EnvA's resources include a significant amount of revenue from other income sources (about 38%), particularly from its own activity, generated by the clinics and continuing education benefits.

Finally, research agreements generate resources used by the research units to finance their operations or to recruit staff.

Registration fees

Students pay annual tuition fees which the amount is determined by the state. These fees were 2204€ per year for the academic year 2014-2015. The corresponding income is included in the School's budget.

3.2.3 Overview of income (revenue) and expenditure

Table 3.1: **Income (€)**

	State (government)		Income generated by the Faculty			Total
Year	To university administered outside the Faculty	Direct to Faculty	Income from services provided	Research	Inventory change	
2014 ([1])		2.660 392 ([3])	12.949 586	2.351 745	1 256 571	19 218 294
2013 ([2])		3 044 824	11 866 066	1 467 947	1 133 644	17 502 480
2012 ([2])		2 571 888	10 610 882	1 705 840	1 277 428	15 904 512

([1]) from budget
([2]) from income statement
([3]) excluding the exceptional grant of 5.5 M€ given by the Ministry.

Table 3.2: **Expenditure (€)**

Year	Pay	Non pay					Total
	Salaries ([3])	Teaching support	Research support	Clinical support	Others	Amortization	
2014 ([1])	5 182 350	676 164	1 452 848	2 719 983	7 292 922	1 881 471	19 205 738
2013 ([2])	4 839 140	429 306	1 021 394	2 352 412	6 511 279	2 360 304	17 513 834
2012 ([2])	5 482 049	545 283	1 208 407	4 016 336	4 701 203	1 991 074	18 057 408

([1]) from budget
([2]) from income statement
([3]) in addition to the salaries paid by the School budget, 13 M€ is payed by the State, for official staff.

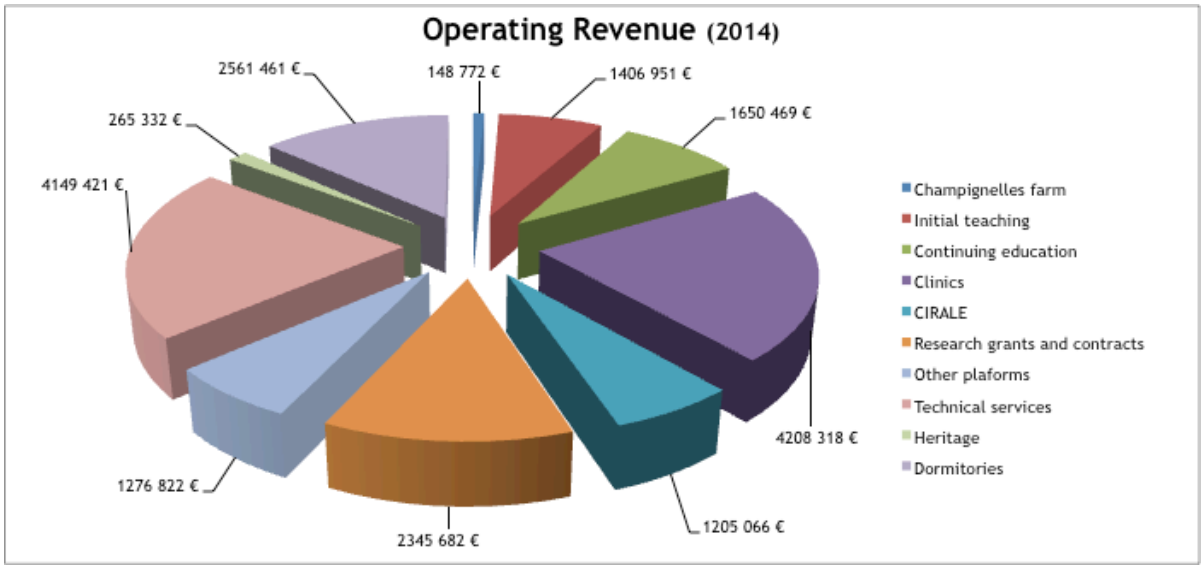


Figure 3.1: breakdown of operating revenue for 2014 (excluding the exceptional grant of 5,5M€ from the Ministry). From budget voted on 25th September 2014.

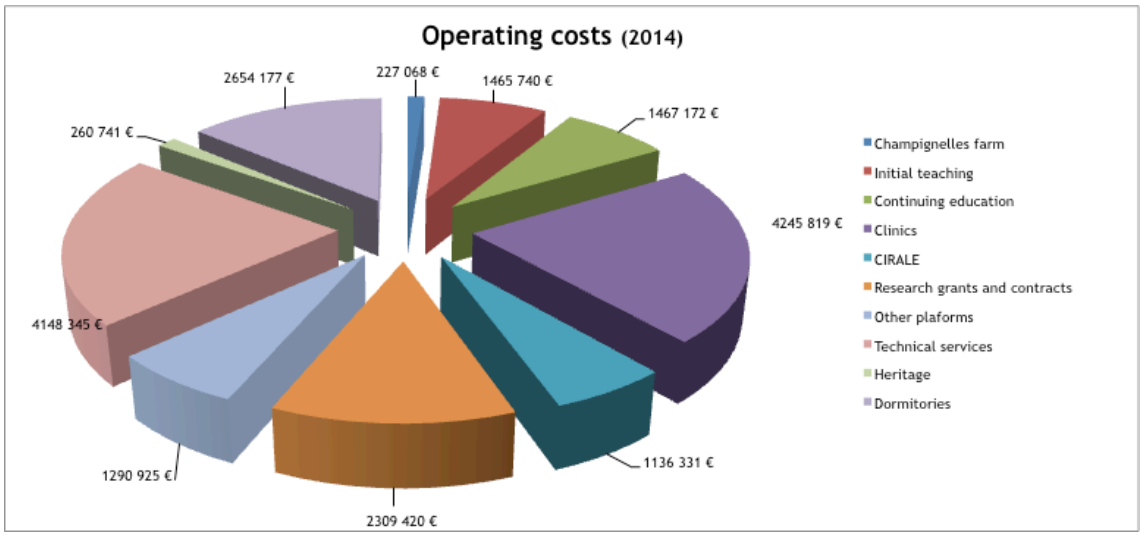


Figure 3.2: breakdown of operating costs for 2014 (excluding the 13 M€ salaries of public employees paid by the Ministry). From budget voted on 25th September 2014.

3.2. Comments

Budgetary difficulties have led the School to take different measures in order to restore and rebuild a working financial capital:

- a revision of the budget model,
- a revision of procedures for commitment of expenditure, and the accountability chain,
- the rationalization of budget monitoring tools,
- drastic savings in the operation costs of the responsibility centres,
- stream-lining the functioning of the revenue-generating centres.

The effectiveness of this recovery plan led the Ministry to give the EnvA in 2014 an exceptional grant of 5.5M € intended to clear accumulated debts as well as restore and rebuild a working cash capital.

But, as already said, this recovery will be difficult to continue, due to the operating cost of old buildings, which impacts negatively the budget of the School.

3.3. Suggestions

The School must continue actions to maintain financial stability, and in particular:

- within the framework set by the State, foster cost accounting,
- carry out the real estate plan, which will depend of the credit obtained under the State-Region contract.

Chapter 4. Curriculum

4.1. Factual information

4.1.1. The French veterinary curriculum

The French veterinary curriculum is a 7 to 8.5 year curriculum, organised in three parts (2+4+1), including 5 years in one of the four veterinary schools:

- The first part (2 years) takes place in high schools organising the preparatory classes for the *Grandes Écoles* (see Chapter 9) or in universities (3 years);
- After a very selective national entrance exam, the second part (four years) takes place in one of the French Veterinary Schools and is the same for all students;
- The third part (last year) is a tracking year, designed on a species-oriented basis for the majority of students. It is followed in one of the French Veterinary Schools.

The grade of doctor in veterinary medicine (DVM) is delivered after presentation of a thesis. The majority of students present the thesis before the end of the calendar year, so that the average duration of studies can be considered to be 7.5 years.

This national veterinary curriculum was defined in the 20th April 2007 decree "concerning veterinary studies". The contents of the five year programme in the veterinary schools are described in two training frameworks (finalised versions published in July 2008 by the Ministry of agriculture – see appendix 4.2). The contents of these documents are based on the European requirements described above and also include additional specific rules:

- during the first four years, amphitheatre lectures must not exceed 50% of teaching time and clinical training must represent at least 30% of total teaching time in the core curriculum;
- the fourth year has to be essentially clinical and practical, divided into two equal semesters, one for small animal and equine clinics, and the other for production animals and veterinary public health;
- during the 5th year (in-depth training year), the students can choose one of 6 different tracks: farm animals, companion animals, equidae, veterinary public health (VPH), research and industry/business. This 5th year must include the preparation of the veterinary thesis. Students can move to another French veterinary school during this final year;
- a period of international mobility is compulsary during the curriculum.

Except for these specific aspects, the decree allows schools to choose how to organise the contents of the semesters, which can thus vary among the veterinary schools. The 5th year takes advantage of the complementarity and the expertise of each French veterinary school.

4.1.2. The curriculum in Alfort

The EnvA must comply with European and National teaching requirements. It is possible to distinguish between the requirements laid down by Higher Education and those specific to Veterinary Education.

For Higher Education in general, the French veterinary schools aims to complying with the requirements of the Bologna declaration (1999). The curriculum has been divided into semesters each individually validated and comprising 30 ECTS. Each semester is made up of credits called LU (Lecture Units) for the students. Informations about each year of the curriculum can be consulted by the students on the digital teaching platform EVE. The marks obtained by the students for each LU are transformed into the ECTS mark scale.

For European requirements specific for Veterinary Teaching, Alfort complies with the European Association of Establishments for Veterinary Education (EAEVE) requirements.

Nevertheless, the school is free to develop its own teaching organisation and methods. In this domain, the EnvA has already developed over the past years some original particularities

- Numerous transversal and interdisciplinary LU in the core curriculum (see later);
- Some optional LU between years 1 and 4 (see later). The validation of these LUs is indicated on the "Diploma Supplement";
- Creation and development, in the 5th year, of tracks in "clinical sciences in farm animals" (CSF), clinical sciences in small animals" (CSS), "clinical sciences in horses" (CSH) and

"veterinary public health" (VPH); the different tracks chosen by the students can be seen in appendix 4.3;
- Introduction of business and management sciences in the curriculum.
- New pedagogical methods, such as using inert material for learning basic surgery acts (sutures…)

In order to increase the involvement of students in the curriculum, and to reach more effectively European standards, a new major teaching evolution was initiated for the students beginning their studies in September 2014 (1st year). This evolution includes different new practices, and particularly:
- increasing the skill-based approach throughout the curriculum;
- reducing the number of units in each semester to better develop a multidisciplinary approach, and turn them in "competence units" (CU) rather than "lecture units" (LU);
- promoting active methods, by increasing the part of supervised practical training rather than lectures.

These principles will progressively be applied over the following semesters.

Within the institution, several committees and councils are involved in managing the teaching programme (decree no. 78-117 27th January, 1978 about "governing structures within the French Veterinary Schools", modified by the decrees no. 2004-242 17th March, 2004 and no. 2005-1476 29th November, 2005).

Spontaneously or at the instigation of the executive committee, the first to act is the Departmental council. Each Departmental council periodically reviews the teaching performed by its members and proposes modifications to improve veterinary training. If necessary, informal working groups generally headed by the Heads of departments or by the Deputy Dean for Teaching and Student Life, meet at the interdepartmental level to harmonise the proposals.

These proposals are then presented and discussed at the Academic Council and the Education and student life Council. The Education and Student Life Council's mission is to "advise the Director on the distribution, organisation and modalities used when teaching (amphitheatre lectures, practical work, personal work, group work and placements…)".

Ultimately, the Governing board takes the decisions based on the opinions given by the Education and Student Life and the Academic councils.

The same process is used for the allocation of hours between the various subjects and on the balance between theoretical, practical and clinical teaching.

4.1.3. Power of subjects and types of training.

4.1.3.1. Power of subjects

As can been seen in the appendix 4.1, the curriculum of veterinary studies which is managed by the French Veterinary Schools includes a core curriculum over 4 years and one year period called "in-depth learning", based on optional tracks .

During this initial training, students must undertake compulsory extramural periods. They vary in their position during the year and their duration, including a placement abroad called "international mobility". Students must write a report after each placement except if it is an Erasmus study period.

The current core curriculum includes for each student at least 15 weeks of compulsory placement. In the new curriculum, there are 10 weeks of workplace training included in the Competence Units (CU), and the equivalent of at least 10 weeks for extramural work, to which are awarded 20 ECTS. (for more details, see chapter 4.1.6).

4.1.3.2. Types of training

Lectures

At the EnvA, this type of teaching involves "amphitheatre lectures". Since September 2014, it has been decided that the student's presence will be compulsory for the lectures. It is already applied for the students in year 1, and it will be applied gradually in the following years.

The format the most frequently used in the core curriculum is a lecture of two consecutive hours. The hours in the same LU are spread over a semester and not grouped together over a short period of time. However, in the 5th year there are a few lectures which are planned all over the year and cover theoretical teaching.

Seminars (tutorial or supervised group work)

In our institution, this type of teaching involves "tutored work". It often consists of literature searches and writing summaries which can be done either individually or in groups (e.g. on biochemistry or genetic subjects or even clinical cases). According to the situation, this work is submitted by the student(s) either as a report which will be marked or as a presentation in laboratory or desk-based work.

In this report the column "seminars" only includes hours of this type of teaching in the presence of the lecturer. This corresponds to both meetings and advice given by the teacher to students or groups of students on their work and to the time spent by the students during their presentation to the teacher. Therefore, the number of hours indicated is low. The hours spent on personal work should not be forgotten (these hours are grouped together in the hours called "self-directed learning").

Self-directed learning:

The hours indicated here cover 4 types of teaching:

- The hours needed for training and revision of theoretical training and supervised practical training. Alfort is in the process of estimating the true time for each CU via a student survey. However, this new survey has only been in place since 2012-2013. Since the information is not yet available yet the following values have been used: 1 h of work per hour of lecture; 0.5 h of work per hour of laboratory and desk based work or non-clinical animal work; 0.25 h of work per hour of clinical work.
- The hours used to do a literature search and writing up work requested in seminars (see above).
- The hours needed by students to learn using TICE (modules using Technologies of Information and Communication for Education, these are available on Alfort's learning management system EVE). In this report only the hours necessary for TICE which are tested by an exam are indicated, with a lecturer-estimation of the "average student studying time".
- The hours needed by the students to write placement reports. They are estimated for an "average student". The details, according to the type of placement, are given in Table 4.5.

At Alfort, the equivalence between hours in the curriculum and ECTS is 1 ECTS = 25h of total student workload (face-to-face + self-directed learning).

Supervised practical training

Laboratory and desk-based work – Non-clinical animal work

At the EnvA, dissections and autopsies are included in this category. All these methods of teaching are compulsory. This is tested by noting the presence of students during the different activities and sanctions, laid down in the study regulations, are applied in the case of absence.

According to the LU, the method of teaching can be performed in groups, which vary in size from 1/4 of the year's students (approximately 30 students) down to 1/10 of the year's students (approximately 12 students). The most frequently used format is 2 hours.

Clinical work

This type of teaching is compulsory. During the core curriculum, a clinical group includes 3 to 4 students and a clinician.

In order to have a realistic idea of the volume of clinical work performed by each student, it is necessary to add up the hours performed during the 5th year (see table 4.1). The total volume varies according to the track chosen by the student.

During the core curriculum, the hours corresponding to exams are indicated in the rubric "other".

4.1.4. Undergraduate curriculum followed by all students

4.1.4.1. Curriculum hours

The following tables summarize the teaching hours by year and subject. The details of courses are given in the factsheets corresponding to each LU. They are made available to students and lecturers on the digital education platform (see the elearning platform for teaching and student life - EVE).

A day in clinical work can last between 6 to 10h, indeed 12h, according to the discipline and the number of consultations. The summary tables show a simplified calculation of clinical hours by assuming an 8h clinical day. However, depending on the discipline, clinical hours may be for some rotations higher that this mean. To take this into account, 60h have been added to the total of clinical hours.

The rubric "other" groups together the following teaching activities: time for exams, time for the teaching of "non-LU-listed subjects" (see Table 4.4), time for extramural periods *sensu stricto* (see Table 4.5), this means that the time necessary to write-up the report is not counted since this is calculated in the estimation of "Self-directed learning" (see above).

Nota bene: beginning in 2014-2015, a new curriculum has started for students.

TABLE 4.1: General table of curriculum hours taken by all students (university year 2013- 2014)

Year	Standard learning track year	Theoretical training			Supervised practical training			Other	Total
		Lectures A	Seminars B	Self directed learning C	Laboratory and desk based work D	Non-clinical work E	Clinical training F	G	
First	A1	311.5	0	516.3	242.6	87	0	194,5	1367.9
Second	A2	420	4	615.4	187.7	20	14	180.6	1441.7
Third	A3	395.5	0	623.7	179	72	130.5	151.5	1552.2
Fourth	A4	52	9	474.1	189.5	5	823	355,5	1907.5
Sub-TOTAL		1179 (*)	13 (*)	2229.5 (*)	798.8 (*)	184 (*)	967.5 (*)	882,1 (*)	6253.3
Fifth (min)	A5	750(**)						750(***)	1500.0
Sixth									
TOTAL (min)									7753.3

(*) ***IMPORTANT**: the totals indicated here only indicate what is done during the core curriculum. It is very important to add the hours undertaken during the 5th year where students choose a track (see Table 4.3a, b, c). This changes radically the number of hours in clinical training.*

(**) *"tracks" are a minimum of 30 ECTS x 25 h per ECTS = 750 h*

(***) The veterinary thesis corresponds to 30 ECTS x 25 h per ECTS = 750 h

Core curriculum

TABLE 4.2: Curriculum hours in EU-listed subjects taken by each student (core curriculum - university year 2013- 2014)

Subjects	Theoretical training			Supervised practical training			Other	Total
	Lectures A	Seminars B	Self-directed learning C	Laboratory and desk based work D	Non-clinical work E	Clinical training F	G	
1. Basic Subjects (*)								
a) Physics	6		6.5	1				13.5
b) Chemistry	1		1					2
c) Animal biology	5		6	2				13

d) Plant biology								0
e) Biomathematics	2		8.25	10.5				20.75
1- Total number of hours	**14**	**0**	**21.75**	**13.5**	**0**	**0**		**49.25**
2. Basic Sciences								
a) Anatomy (including histology & embryology)	90		152.9	41.8	84			368.7
b) Physiology	67		83	25	7			182
c) Biochemistry, cellular & molecular biology	25		35.4	14.8				75.2
d) Genetics (including molecular genetics)	47	3	87	40				177
e) Pharmacology & pharmacy	47		70.5	39				156.5
f) Toxicology (including environmental pollution)	16.5		27.25	21.5				65.25
g) Microbiology (including virology, bacteriology & mycology)	53		73.76	41.5				168.26
h) Immunology	41		54	26				121
i) Epidemiology (including scientific & technical information & documentation methods)	8	1	28.75	39.5				77.25
j) Professional ethics								0
2- Total number of hours	**394.5**	**4**	**612.56**	**289.1**	**91**	**0**		**1391.2**
3. Clinical sciences								
a) Obstetrics	8		11.75	2.5	2.5	5		29.75
b) Pathology (including pathological anatomy)	11		124,85	40.7	63			239.55
c) Parasitology	44.5		59,5	26				130
d) Clinical medicine and surgery (including anaesthetics)	10.5	3	239	50.5	5	815		1123
e) Clinical lectures on various domestic animals (including poultry & other species)	247.8		256.3	7	2			513.1
f) Field veterinary medicine (ambulatory clinics)			9.25	2		33		44.25
g) Preventive medicine	7.5		33.13	15		52.5		108.13
h) Diagnostic imaging (including Radiology)	46		70.88	34		31.5		182.38
i) Reproduction and reproductive disorders	45.2	2	64.08	9		29.5		149.78
j) Veterinary state medicine & public health	41.05		95,55	52				188.6
k) Veterinary legislation and forensic medicine	20		20,5					40.5
l) Therapeutics	32.1		42.35	8.5				82.95
m) Propaedeutics (including Laboratory diagnostic methods)	13.6		46.6	31	18.5	1		110.7
3- Total number of hours	**527,25**	**5**	**1073.74**	**278.2**	**91**	**967.5**		**2942.7**

4. Animal Production								
a) Animal production	17		38.5	15				70.5
b) Animal nutrition	63		83.5	41				187.5
c) Agronomy	3		3.5	1				7.5
d) Rural economics	15.5		21.5	10				47
e) Animal husbandry	19		44	14				77
f) Veterinary hygiene	9		14.5	4.5				28
g) Animal ethology and protection	33.5		51	35				119.5
4- Total number of hours	**160**	**0**	**256.5**	**120.5**	**0**	**0**		**537**
5. Food Hygiene / Public Health (b)								
a) Inspection & control of animal foodstuffs or foodstuffs of animal origin & production units	13		17.25	12.5				42.75
b) Food hygiene & technology	22		28	12				62
c) Food science including Legislation	13.75	4	50	24.5				92.25
d) Practical work (including in placements with slaughtering & processing foodstuffs			18.5	15	2			35.5
5- Total number of hours	**48.75**	**4**	**113.75**	**64**	**2**	**0**		**232.5**
6. Professional Knowledge								
a) Practice management	28.5		40	23				91.5
b) Veterinary certification & report writing	2		7.25	10.5				19.75
c) Career planning and opportunities	4							4
6- Total number of hours	**34.5**	**0**	**47.25**	**33.5**	**0**	**0**		**115.25**
			104 (**)					
TOTAL	**1179**	**13**	**2229.5**	**798.8**	**184**	**967.5**	**882 (***)**	**5371.85**

(*) these basic subjects have been taught before admission in the veterinary schools.
(**) self-directed learning necessary to write-up reports on compulsory extramural: periods: 104h (see table 4.5).
(***) total hours "other": 882h: exams: 129h, subjects not in EU list: 228h (see table 4.4), compulsory extramural work: 525h (see table 4.5).

TABLE 4.3: Curriculum hours in EU-listed subjects offered and taken as electives (tracks)(university year 2013- 2014)

In the tables below, we will only present the details of the programmes and the total number of hours for the fifth year tracks "clinical sciences in farm animals", "clinical science in small animals" and "clinical science in horses". The total number of hours for these tracks is given in tables 4.3a, 4.3b, and 4.3c respectively.

Fifth year track "Clinical sciences in farm animals" (CFA)

Table 4.3a: Track "Clinical sciences in farm animals"

	Theoretical training			Supervised practical training			Other	
Subjects	Lectures	Seminars	Self directed learning	Laboratory and desk based work	Non-clinical work	Clinical training	(**)	TOTAL
	A	B	C	D	E	F	G	
Basic subjects								
Basic sciences	5		5					10
Clinical sciences	86		148.25	17	15	185	420	871.25
Animal production	28		30	2	2			62
Food hygiene/Public health	3		3					6
Professional knowledge	3		3					6
TOTAL	125		189.25	19	17	185	420	955.25

(*) placement in a rural clinic for a period of 13 weeks (13 x 35 h = 455 h)

This track takes place mainly in the first semester for theoretical training, with large periods of free time to complete the veterinary thesis and/or to do extramural clinical training in veterinary practises.

Each student must follow: (see track description on EVE)

- 5 weeks of "core courses" (identical for all students in the dominant),
- 3 weeks of "optional subjects", organised in 4 different tracks: small ruminants track; beef cattle track; dairy cattle track and intensive productions track (poultry, swine, fish),
- a clinical rotation of 3 weeks in the Alfort Large Animal Hospital, in small groups (3 to 6 students)
- and finally a 10 to 12-week extramural placement in a rural clinic."

Fifth year track "Clinical sciences in small animals" (CSA)

Table 4.3b: Track "Clinical sciences in small animals"

	Theoretical training			Supervised practical training			Other	
Subjects	Lectures	Seminars	Self directed learning	Laboratory and desk based work	Non-clinical work	Clinical training		TOTAL
	A	B	C	D	E	F	G	
Basic subjects								
Basic sciences								
Clinical sciences	34	0.5	343.5	50	3	996		1427
Animal production								
Food hygiene/Public health								
Professional knowledge								
TOTAL	34	0,5	343.5	50	3	996		1427

(*) self-training using X-rays and medical files to prepare a clinical case

Depending on the availability, the students can add to the compulsory programme "supplementary" optional modules (see track description on EVE).

Fifth year track "Clinical sciences in horses" (CSH)

Table 4.3c: Track "Clinical sciences in horses"

	Theoretical training			Supervised practical training			Other	
Subjects	Lectures	Seminars	Self directed learning (*)	Laboratory and desk based work	Non-clinical work	Clinical training	(**)	TOTAL
	A	B	C	D	E	F	G	
Basic subjects								
Basic sciences								
Clinical sciences	128		260.5	9	24	802	175	1398.5
Animal production								
Food hygiene/Public health								
Professional knowledge	4							4
TOTAL	132		260.5	9	24	802	175	1402.5

(*) 16 h to write up and report for the placement
(**) 5-week placement in an equine clinic (5 x 35 h = 175 h)

This track covers the 2 semesters of the 5th year. There are long periods where students can complete their veterinary thesis (see: track description on EVE).

An originality of this track is that it is co-organised between three of the 4 French Veterinary Schools and also includes a period at the stellite site at Goustranville (CIRALE). The training weeks occur in different regions of France which takes advantage of local expertise.

Other fifth year tracks

The track "VPH" consists in students passing the entrance exam and studying at the National Veterinary Services School (Ecole Nationale des Services Vétérinaires, ENSV, Lyon). They will become Veterinary Public Health Inspectors (Inspecteurs de la Santé Publique Vétérinaire, ISPV). The details of the curriculum can be found at: formation des vétérinaires officiels français. Before passing the entrance exam, students can prepare for the exam at Alfort during the 4th year of the core curriculum (optional LU "Preparation for the ISPV entrance exam").

In the domain of public heath teaching, the EnvA offers the master "Epidemiological surveillance of human or animal diseases" (master SEMHA), in collaboration with the CIRAD, university of Paris-South and university of Paris-East Créteil. This course is intended to develop the basic methods for to create, to animate or to participate in an epidemiological survey.

The track "Business" consists essentially in students following a Master of Sciences in management. The diploma is awarded by ESSEC Business School at Cergy-Pontoise (95) (find more information at: ESSEC business school). The 5th year of veterinary studies on this track forms part of the training for this diploma. The student will obtain a double diploma. Prior to starting this track students are informed about the ESSEC entrance exam and curriculum as early as the 2nd year of the core curriculum (see optional LU "Vocation manager" at: vocation manager).

One of the other possibilities for this track is for students to study at the institution AgroParisTech, to become an "ingénieur". (see: école interne ENGREF).

The track "Research" consists in students following a Master 2, which can be continued in order to complete a PhD. Alfort participates in several Doctoral Schools, and collaborates in several Masters with other institutions (see information at: masters description on EVE). It is highly recommended that students finish their veterinary thesis during the Master 2. Before starting a Master, students can follow a core curriculum optional LU which provides information and prepares them for a career in research (see information at: vocation chercheur).

Within the new organization of teaching, training through research is established for all students during the core curriculum.

Subjects not listed in table 4.2 to be taken by each student, including Diploma work (veterinary thesis)

Table 4.4: Curriculum hours in subjects not listed in table 4.2 to be taken by each student, including Diploma work (veterinary thesis) (university year 2013-2014)

Subjects	Theoretical training			Supervised practical training			Other	TOTAL
	Lectures A	Seminars B	Self directed learning C	Laboratory and desk based work D	Non-clinical work E	Clinical training F	G	
English 1st year			14	28				42
History of veterinary medicine	6							6
Sustainable development	4							4
English 2nd year			11	22			3	36
Preparation for the veterinary thesis (4th year)			140					140
Sub-Total								*228*
Preparation for the veterinary thesis (5th year)			750					750
TOTAL	10		915	50			3	978

4.1.5. Further information on the curriculum

Management of unexcused absences from compulsory teaching activities

As indicated in paragraph 4.1.3.2, lectures at the EnvA did not used to be not compulsory, but they will be compulsory for new students starting in the university year 2014-2015. For all other teaching methods, the lecturers must check that the students who should be present are indeed present.

When a student is absent without obtaining an authorisation, the lecturer must after discussion with the student find a solution so that the student can do the activity that he/she has missed or apply the penalty which is defined in the study regulations.

Unusual and innovative aspects of the teaching programme

In order to make up for the difficulty in obtaining, on campus, sufficient animals and study material in the farm animal sector, and to promote herd medicine, the EnvA uses a lot of delocalised teaching. Ambulatory clinics leave from the EnvA and go to veterinary clinics in the north and the west of the Paris area as well as in the Burgundy region around the CAPA (Champignelles). Practical herd medicine is taught in ruminants, swine and poultry at the CAPA and in surronding farms. Specific monitoring of fertility in ruminant herds is regularly performed in farms in the Paris area (for more details, see chapters 6 and 7).

In order to develop in students the transversal approach to different aspects of the curriculum, EnvA has created transversal Lecture Units. These LU are taught with the help of lecturers from different departments and are coordinated by a lecturer who is in charge of the LU. A non-exhaustive list includes “General Animal Husbandry”, “Preclinical Molecular Biology and Genetics” (1st year); “Knowledge of dogs and cats”, “Preclinical Molecular Biology and Genetics”, “Single-stomached animals 1”, “Biology of development”, “Fundamental Oncology” (2nd year); “Milk Production 1 and 2” (3rd year); “Veterinary Public Health”, “Cattle Medicine” (4th year). The transversal approach is also used during training to search for technical and scientific information and during training to write literature reviews. An integrated teaching course includes a session of training at the library, immediately followed by working on a group-written report on a genetics literature search subject (in the form of seminars / tutored work).

This transversal approach is systematic in the new curriculum set up for university year 2014-2015, where all CU are multidisciplinary.

By now, near all LU and CU are using the digital education platform (EVE) platform is growing each semester. It has made it very easy to give students access to these tools and allows them to use them regularly. Even when classical teaching methods are used, the students can find on EVE all the hand-outs, pdf files on different topics.

In order to allow students to work at their own rhythm, by using educational documents, training and auto-evaluation programmes have been developed for dog and cat breeds, for bovine reproduction, for toxic plants and clinical cases in the "virtual hospital".

A teaching module has been introduced on aquaculture at Alfort. Since there is no specialist at Alfort the creation of this module was made possible by using videoconferences which allow a specialist at ONIRIS to do the teaching (travel costs are also reduced).

Specific information on the practical clinical training

Companion animals clinics

First year

Since 2012, students are introduced to the clinical work in the first year of their studies. The teaching program is focused on hygiene and nursing of the small animals during the hospitalization. Students spend two rotations of 4 hours over the weekends. They are supervised by technicians and nurses. They participate in the cleaning work in the hospitalization service These rotations are compulsory, and verified by the technicians.

Second year

Starting this year, students have to spend two half-days in the year at the reception desk of the small animal hospital. They have a first contact with the owners, either directly at the reception, or by telephone. They also learn how to create a medical file in our software Clovis, how to answer to the owners'questions, how to give an appointment and so on. Students are supervised by the reception staff. These rotations are compulsory, verified by the person who is in charge of the reception at the small animal clinic.

Third year

During the third year, students have clinical rotations in Diagnostic Imaging, Dermatology and Vaccinology. They are supervised by technicians in Diagnostic imaging (teaching is focused on the restraint of the animals for the exams and radiographic positioning) and by clinicians in Dermatology and Vaccinology. In these two activities, students are always working with more experienced students (fourth and fifth year students). These clinical rotations are the first contact for the students with the activity of consultations with owners and affected animals. Attendance at clinical rotations is compulsory, verified by the supervising clinician.

Fourth year

As previously mentioned, half of the students spend 20 weeks in the Small animal and Equine clinics (16 weeks in Small animal and 4 weeks in Equine clinics) while the second half rotates in the farm animal clinic and in public health in the first semester and vice versa in the second semester. For the Small animal and Equine activities, the 60 students are formed into 20 groups of three students for the specific clinical activities listed above. When on rotation, students participate fully in the clinical team and take part in all aspects of clinical activity, under staff supervision, from admitting patients and taking their anamnesis, through carrying out tests, administering treatments (including surgical procedures), providing nursing care finishing with patient discharge. In the previous year, all students are given basic clinical training prior to starting these clinical rotations. The clinical skills in which the students are given instruction prior to starting clinical work include: clinical examination, animal restraint, surgical scrubbing, gowning and gloving for surgery, instrument suture, bandaging, clinical laboratory (samples, injections, blood smears and staining, urine analysis), behavior towards the owners, hygiene.
The schedule of rotations in fourth year is described in appendix 4.4. Attendance at clinical rotations is compulsory, verified by the supervising clinician. To complete the clinical training, supervised practical training is organized in surgery and in diagnostic imaging (2 hours per student respectively) and a journal club in Dermatology (3 hours per student).

Each rotation is validated, either at the end of the week for the full-time rotation (anesthesia, diagnostic imaging, emergencies, intensive care, general medicine, surgery) or at the end of the activity for part-time activities (exotic animals, ophthalmology, dermatology, neurology, reproduction…).

Fifth year

Students in the small animal track undertake 26 weeks in the Small animal hospital and an additional fourteen weeks are off clinic. This time is given for writing the veterinary thesis, which should be orally presented at the end the firth year. Students are divided into small groups of three-four students for the clinical activities listed above. While on rotation, students participate fully in the clinical team and take part in all aspects of clinical activity, under staff supervision, from admitting patients and taking their history, through carrying out tests, administering treatments (including surgical procedures), providing nursing finishing with patient discharge.

The schedule of rotations in the fifth year is described in appendix 4.5.

Equine clinic

Fourth year students spend four weeks in equine clinic, alternating between different clinical activities. Students can go to the CIRALE for 7 weeks in their last year, if they choose to follow the equine track. They will mainly attend the orthopaedic consultations, but they also spend one week, be attending necropsies at the *"Institut Français du Cheval"* (on the same site) and also the sport medicine consultation for one week.

Farm animal clinic

During their second year, students have practical training in farm animal propaedeutics each morning for a week. In the third year, they go every morning for three weeks to the Alfort farm animal clinic.

Fourth year students spend three weeks in the Alfort farm animal clinic, and a week in the CAPA. Students who choose the farm animal track follow three weeks in the clinic of the Alfort site, together with a 10 to 12 week of extra-mural placement.

4.1.6. Obligatory extramural work

Extramural periods

The themes, durations and periods of the "institutional" placements used to be fixed by the curriculum. All the necessary information, including the objectives and information about writing the reports are available for the students on the digital educational platform. The rules governing the writing-up of the placement reports depend on the type of placement (see for example, the information concerning the 1st and 2nd year placements on EVE). For some placements, specific detailed information is also given during practical work sessions (placements in the 1st and 2nd year).

The teaching programme has been modified to allow students, who mainly come from an urban environment, to be able to obtain the necessary information, prior to going on the 1st year placement in a dairy farm (see the practical week "placement preparation").

The duration and the period when the "non-clinical" placement in the 3rd year is performed have been modified to encourage students to undertake placements in research or business. Indeed, for these types of placement it is often requested by the host organism which accepts the student that the placement be over a long period.

In the new curriculum, ten weeks of workplace training are integrated into the skill units, and each student can complete their professional project with extramural periods of their choice that have been validated by the student's tutor.

Nota bene: The hours spent by students in ambulatory clinics are included (based on average times) in table 4.2.

Table 4.5: Obligatory extramural work that students must undertake as part of their course (not including international mobility) (University year 2013-2014)

Nature of work	Minimum period (2)			Maximum period (2)			Year in which work is carried out (1)
	Hours		% of total study time (5)	Hours		% of total study time (5)	
	taken outside	self-directed learning (3)		taken outside	self-directed learning (3)		
Placements in the core curriculum (1st to 4th years)							
Training in a dairy cow farm (3 weeks + writing report)	105	24	2.1				1st year
Placement in a slaughterhouse (1 week + report)	35	16	0.8				2nd year
Free choice of placement type (2 to 3 weeks + report)	70	8	1.2	105	8	1.8	2nd year
Non-clinical placement (3 to 12 weeks + report) (4)	105	24	2.1	420	24	7	3rd year
Mixed practice clinical placement (6 weeks)	210	32	3.9				4th year
Sub-Total	525	104	10.1				
Placements in A5 (tracks) :							
Clinical sciences in horses	175	16	16.5				5th year
Clinical sciences in farm animals	420	16	59				5th year

(1) if these periods of extramural work take place during the summer holidays, then the preceding academic year is entered in the last column of Table 4.5
(2) where applicable
(3) time necessary to write a report on the placement; all the placements are tutored by a teacher and the written report is marked by the same teacher
(4) in Table 4.1, the minimum time for the placement is indicated
(5) for the 1st and 4th years, the denominator = total study time of core curriculum
For the 5th year, denominator = total study time of options (not including veterinary thesis)

The student's mark takes into account his/her activity and behaviour during the placement, which are evaluated by the supervisor using an "assessment sheet", and the quality of the placement report.

For the curriculum applied in 2014-2015 to 2nd to 5th year students, the students who have obtained a mark lower than 12 out of 20 must present the report to a panel of the tutor and at least one other teacher. If the student does not obtain 10 out of 20, the placement must be repeated and the report corrected by 2 lecturers. Each placement in the core curriculum is a LU in its own right. This means that if the placement is not validated the student may proceed to the next year but the placement still needs to be validated or the student needs to redo the whole year.

In the 5th year the mark for the placement is one of the marks used to calculate the average mark for the track.

For the new curriculum, the tutor is responsible for validating placements which are not mandatory ones.

International mobility

Students must validate a period of international mobility during their curriculum. The information about this subject is given to the students during specific sessions and is published (see: international mobility on EVE). The mobility is managed by the Teaching and Student Life Office.

Briefly, each student can validate international mobility by:

- undertaking a specific placement of at least 4 weeks;
- undertaking one of the "institutional" placements in a foreign country. Not all of the "institutional" placements can be used to validate international mobility. For example, it is not possible to validate international mobility with the dairy farm (1st year) and slaughterhouse (2nd year) placements;
- undertaking a 5th year track in a foreign country. There are two possibilities:
    - a mobility at the veterinary faculty of Saint Hyacinthe (Canada). The student can validate either a farm animal track, or a small animal track (in the last case, an extra period must be performed at Alfort to complete the period in Canada).
    - a mobility in faculties in the United States of America to validate the small animal track. The student must present a detailed programme of this project to the DEPEC council, which will decide if the program is acceptable.
- undertaking a study period in a foreign veterinary faculty within the framework of a recognised exchange programme (for example Erasmus, Brafagri, Brazil, exchanges with Saint Hyacinthe (Canada), *etc.*)

4.1.7. Specific information on the practical training period in food hygiene/public health

Practice in the field of food hygiene is obtained in three ways:

- In the Migennes slaughterhouse, located fifty kilometers from CAPA, where students during their visit follow all the stages of the implementation of official controls;
- In CAPA, where seized offal or carcasses are examined;
- The inspection software AsaDia, reference document provided by the Ministry of Agriculture to all slaughterhouses in France, is freely available to students; five half-days of directed work (two in the 2nd year and three in the 4th year) are devoted to its study on the site of Alfort through the use of tutorials.

4.1.8. Ratios

4.1.8.1. General indicator types of training

The presentation of the ratios R6, R7 and R8 presented were calculated by taking into account the diversity of the 5th year which functions along the principal electives and the tracking system. Only the clinical tracks, which cover the majority of students, have been calculated.

In application of the new EAEVE guidelines, all ratio tables have been grouped in appendix 1.1.

4.1.8.2. Special indicators of training in food hygiene/public health

For the calculation of the ratio R9, two situations were considered:

- the calculation only using the core curriculum;
- the calculation using the core curriculum and the training necessary to become an "Inspecteur de la Santé Publique Vétérinaire (ISPV)" at the Ecole Nationale des Services Vétérinaires (ENSV Lyon). This corresponds to what the majority of students do when they choose the track Veterinary Public Health (VPH).

4.2. Comments

Some of the strong points in Alfort's curriculum are:

- The coexistence of a solid core programme followed by all the students and the possibility of choosing from a list of several tracks allows graduates to attain the day-one skills but to be trained further with slightly different additional skills. They are therefore better adapted for the different professional sectors found within veterinarian activities.
- The programme, in France and especially at the EnvA, during the 4th and the 5th years when following one of the "clinical" tracks, includes a very high proportion of practical and clinical training (see the ratios R6 and R7, appendix 1.1). It is also recognised by the foreign students who come to the EnvA for a placement that our clinical training allows students to manipulate, examine, treat and operate on animals much more than in other European faculties. This requires high levels of supervision by our clinicians, but allows a real « hands-on » diagnostic, prognostic and therapeutic approach.

- The satellite centres (CAPA and CIRALE) give access to high level teaching in production animals, food hygiene and horses.

Some of the weak points are:

- the difficulty to achieve early within the curriculum at Alfort the motivation and pre-orientation of students in the following 3 sectors: veterinary public health, industry/business and research. This makes it difficult to specifically prepare students for these sectors which are available only after an entrance exam or after examination of an activity report. If the information-day about the veterinary profession and the creation of specific LUs can partially help to alleviate this problem it is necessary to provide more precise information to the future candidates before the French veterinary school entrance exam.
- the way veterinary studies are organised in France. The first 2 year preparation period before entering a French veterinary school are not under the school's supervision (nor the same supervising Ministry) and the veterinary teachers have little influence over the program which is taught.
- depending on disciplines, the heterogeneous organisation of clinical rotations: some of them have a too large range of working hours.

Like other French veterinary schools, the EnvA took several years to overcome the transitions due to the introduction of the new curriculum in five years imposed in 2007. This difficult period led to which was too fragmented, characterised by a high number of LUs, increasing the risk of a compartmentalisation of knowledge. That is the reason why the School decided to create a smaller number of transversal CU starting from the academic year 2014-2015.

The plan and the information provided in the descriptive factsheets for each LU have been significantly remodelled and completed. As a result of the implementation of the new curriculum and the establishment of the digital platform, the teachers were asked to update the factsheets which evolved from a paper version to a digital format. Examples of the factsheets can be found on EVE. The information is much easier to consult for students and staff and can be more readily updated.

The EnvA delivers high quality training, and graduates are recognized for excellence. From this point of view, the period covered by the previous school project was marked by various developments:

- An evolution of programs and practices induced by the successive reforms of the veterinary curriculum,
- The listing of training in the European area of higher education,
- Redevelopment of clinical training, caused by the opening of the new small animal hospital in 2009,
- The establishment of the Moodle platform EVE,
- Wider application of the evaluation process by students.

However, several difficulties have been identified and limit the full implementation of the training in the way of the skills approach:

- Amphitheatre teaching methods remain the majority compared to active teaching methods during the first years of the curriculum,
- The accumulation of a too compartmentalized knowledge hampered effective implementation of the scientific and medical reasoning,
- The lack of consideration of know-how and knowing how to react in learning,
- The absenteeism seen in lectures,
- The assessment practices which need to be improved, especially during the clinical years.

The EnvA has developed for over more than ten years solid and practical teaching for herd medicine, health audits, prevention of poor performance and the action of the veterinary surgeon as a sentinel in the detection of emerging herd diseases. The small animal hospital allows the EnvA to provide a high level education for every species, and particularly in every speciality involving companion animals.

In another domain the EnvA has recruited lecturers who have developed a programme on ethology and animal welfare spread out over several years during the curriculum and in interaction with other LUs.

The EnvA has also introduced in the curriculum Management and Business Science. The substantial training that our students already receive on the subject will be significantly increased. It is now possible, with the creation of a business professorship.

4.3. Suggestions

The teaching evolution is the foundation of actions to be taken in the coming years. The objectives and actions selected in the School project aim to continue extend and build on its development, based on a systemic approach involving the strengthening of the competence approach and implementation of active teaching methods.

In particular, different actions will be undertaken:

- continue the development of the new curriculum, fostering interdisciplinary approaches by defining for each semester of a small number of competence units;
- increase the share of active teaching methods:
  - continue to decrease the proportion of lectures, particularly during the first years of the curriculum,
  - promote educational methods like "inverted classroom" (“flipped classes”),
  - set up a teaching contract, especially for struggling students.
- establish starting in the 1st year a gradual preparation for clinical procedures, relying in particular on a “Clinical skills Center” to learn the basic gestures on manikins and inert models; this platform will be operational in September 2015.
- engage a harmonization work in order to better organize the clinical rotations which have a too large range of working hours.

Chapter 5. Teaching and learning: quality and evaluation

5.1. Factual information

5.1.1. The teaching programme

Coordination of teaching between different departments, sections, institutes and services

As mentioned in chapters 2 and 4, different committees and councils are involved in the teaching process:

- The department council, which coordinates the study programme of the different relevant lecturing units;
- The coordination of different parts of the study program is performed by each teaching unit;
- At School level, the Teaching and Student Life council and the Academic council are done for coordinate and regulate the curriculum over the 5 years.

The Teaching and Student Life Office is in charge of the coordination and the implementation of the study programme.

If necessary, working groups are constituted to propose suggestions for the councils.

Pedagogical approach of the institution

As already mentioned, the first strategy of the School Project is designed to improve teaching quality *(Modernize the initial training of veterinarians and develop their training throughout life, in a sense "Vet for health, Vet for food, Vet for the planet," according to a quality approach and using today's technologies and methods*). The evolution that has already been started (see § 4.1.2) is a set of operational measures that support this strategy.

The digital education platform, EVE, which uses the Learning Management System Moodle, has made it very easy to give students access to various learning tools and allows them to use them regularly. Students work at their own rhythm, by using educational documents, training and auto-evaluation programmes that have been developed. Nearly all courses use EVE, at least by creating folders for pdf files, and more and more teachers are developing more advanced online learning activities.

In addition, the new teaching approach uses problem-based learning and "flipped classes", which are already used by some teachers.

Use of course notes and standard veterinary textbooks

A well-documented syllabus has to be provided to each student for every course in the study programme. Most syllabi or course sheets contain a reference list with related basic or veterinary textbooks. Supplementary information on selected literature courses is provided during the lectures. For a large part of the courses, course hand-outs have been created several years ago, and are regularly updated. EVE is extensively used for distributing to the students free learning material (e.g. course slides, training material, references to textbooks, articles…). Moreover, the library contains historical and current textbooks available to the students (see chapter 8).

Partnerships supporting undergraduate teaching

Different formal or informal collaborations have been established with several outside bodies. First of all, as indicated in chapter 4 the four French veterinary schools collaborate themselves, especially for the 5th year study programme.

There are also collaborations with private firms, for instance Zoetis and Nestlé Purina, with whom was created the "Business chair Alfort Entreprendre". This "business chair" is useful in developing business and management teaching.

For teaching in farm animal production and clinics, there are arrangements with several farms, in the Paris area or near the CAPA. There are also arrangements with veterinarians for ambulatory clinics (see chapters 6 and 7).

For teaching in food safety, there are arrangements with the slaughterhouse of Migennes, which is close to the CAPA (see chapters 6 and 7).

Outcome assessment

The learning objectives defined in the 2007 decree aim to provide all students with a broad knowledge and basic skills in veterinary medicine for all major domestic species. The curriculum allows them to obtain more advanced skills in a specific track.

To verify the achievement of expected tracks, several evaluation mechanisms are implemented. A combined system of permanent evaluation and final exams allows both formative and certificate evaluation. Throughout the curriculum, each LU is evaluated in this way.

Particularly in the two clinical years of the curriculum (A4 and A5), there is a systematic assessment of student's performance in clinic rotations, focused on technical skills, application of knowledge and clinical reasoning. The system of clinic rotations allows close contact between small groups of students and the academic staff, and in such a way the progress of each student can be monitored.

5.1.2. The teaching quality

The two major methods to improve teaching quality are teacher training programs and teaching evaluation. Two major training programs are proposed to teachers:

- The Ministry of Agriculture offers teachers five weeks of training on teaching methods. Upon his/her arrival at the EnvA, each new teacher is strongly encouraged to follow it.
- The EnvA participates in the IDEA+ CoMUE Paris-Est's program, which allows teachers to have access to many training sessions about new pedagogic approaches or methods to teaching during the year. A group of teachers from the EnvA regularly participates in such training sessions and has initiated a once every two weeks transfer seminar open to all the teachers at the School.

The teaching evaluation process is described hereafter (§ 5.1.4).

5.1.3. The examination system

5.1.3.1. Examination system for A2 to A5 in 2014-2015

Examination system for A2 to A4

Training is organized in the form of semester LUs to which are assigned a number of credits and evaluation procedure. Each semester is made up of 30 ECTS. Each unit posts, on its assigned page of EVE a description of the teaching that will be provided and a list of learning objectives to be acquired. Evaluation of knowledge and skills of for each LU are directly suited to their learning goals.

Over a year, the validation tests are carried out between one to three times, depending on the results. The dates of exam sessions are, as are the start and end dates of semesters, placements and holidays, adopted by the Governing board, after consultation of the Academic Council and the Teaching and Student Life council. Students are informed of these dates by Teaching and Student Life Office.

The evaluation is based on these assessments organized during the semester. If the score is greater than or equal to 12/20, the LU is automatically validated. Otherwise, the student is called to a final examination session. This session is called "end of semester session". It is generally made up of an oral exam. If the overall score of a student is equal to or exceeding 10/20, the LU is considered validated. If the score is less than 10/20, the student is invited to the compensatory session held in September, before the new academic year.

In September, if a student to validate one or more LU, he/she is allowed to proceed to the next year if the sum of the ECTS of failed LU is less than or equal to 12 ECTS, these LUs must be validated during the following year. If this is not the case, the student must repeat the year for the failed LU. To pass from 4th to 5th year, students must have validated all LUs of the core curriculum.

For end of semester or compensatory session, the jury consists of teachers who taught the discipline and a teacher not involved in the LU. The Dean has the ability to change the composition of the exam board if one of the members is not available. For each exam session, the results are approved by the Academic council, before being published.

Examination system for A5

The evaluation system is specific for each track.

- For the farm animal track, examination consists of a theoretical assessment, oral course marks, evaluation of clinical rotations and participation to courses and evaluation of an oral presentation of clinical cases managed during extramural clinical training;
- For the small animal track, students are evaluated as in their 4th year, after each clinical rotation;
- For the equine track, the review includes a theoretical assessment, oral course marks and evaluation of clinical rotations and participation to courses;
- The research track depends on the validation of the master;
- For the other tracks, the mark taken into account is that of the host institution.

Thesis

This degree is conferred on a student after presentation of a thesis at the Faculty of Medicine of Créteil University. The jury includes a professor from the Faculty of Medicine (president of the jury), the thesis advisor from the veterinary school (1st examiner) and another instructor from the veterinary school (2nd examiner). Particularly remarkable theses that have earned special mention are presented to the thesis prize commission to be assessed to see if they should receive an award. The list of the best theses is sent to organizations and associations wishing to reward excellence (Veterinary Academy of France, Alumni, *etc.*).

5.1.3.2 Particularities for repeaters

Repeaters and students “in accumulation” are followed by a special commission. They are subject to a “repetition contract”. Students “in accumulation” can proceed to the next year, but must follow the mandatory courses and exams of the LUs that they failed to validate previously, in addition to courses of the current year. Students “in accumulation” who cannot follow the unvalidated LUs for scheduling reasons are allowed to conserve the practical marks that they had previously obtained.

Students who have not passed in the next year after a repetition can be excluded from the School, except on medical grounds.

5.1.3.3. Evolution for A1 students in 2014-2015 and next students

An important element in educational evolution is the decrease in the number of exams for each student, in order to encourage de-compartmentalisation of knowledge and to broaden the spectrum of the exams. Each competence unit (CU) has a maximum of four events:

- A maximum of three interim evaluations,;
- An end-of-semester evaluation is mandatory for all students.

The development of the competence approach also is enforced by the evolution in the grading system, which no longer uses the classical French 20 points scale. A A-F letter scale is now being used, describing the students skills as follows: F (level not reached), FX (“tie note”), E (pass), D (fair), C (good), B (very good), A (excellent).

5.1.4. Evaluation of teaching and learning

The evaluation of teaching has existed for several years in EnvA. Implemented initially in the form of paper surveys, the assessment is now digitized, and integrated into EVE. It is in the form of surveys, which students must answer at the end of each semester. The surveys are processed and edited by the Teaching and Student Life Office. They are presented and discussed in the Academic Council and the Teaching and Student Life Council. The surveys are sent to the teachers, so that they can implement, if necessary, the appropriate corrections. The evaluation results are also published on the EVE website.

5.1.5. Student welfare

Safety and biosecurity measures

Zoonoses, biohazards and physical hazards are important subjects in a veterinary school. Zoonoses and biohazards are integrated in different courses throughout the curriculum, especially in 1st and 3rd year before clinical practice. Students are provided with information and instructions on safe working practices, good occupational hygiene practice and the appropriate use of personal

protective equipment, under the responsibility of each service of the School or each concerned teacher.

Safety procedures are displayed, especially for hand washing and waste management, in certain premises. In order to clarify the measures to implemented, the procedures, instructions and operating modes are about to be grouped together in a biosecurity manual.

There is also, as in the other French veterinary schools, a person especially dedicated to health and safety, called "prevention officer", who is under direct responsibility of the Dean and the General Secretary of the School.

A Hygiene and Safety Committee is also active in the School. It aims to identify risks and maintain the safety of staff, students, and the environment. There are generally three meetings of this committee per year. Finally, a School medical officer regularly visits in the School, three half-days each week. EVE includes a section on safety measures.

Student facilities

There are in the EnvA various facilities for the students. First of all, they have two student residences at their disposal, with a total capacity of 492 furnished rooms. Every room is equipped with high speed multimedia connection. There is also a university restaurant located on the campus, where students can by cheap meals. Some facilities are also made available to students for sports and associations.

For personal and psychological problems, in addition to the School medical officer, a psychologist is available for confidential counselling once a week in the EnvA and once a week at the Créteil University. All students can ask for changes in the organisation of his/her curriculum for medical reasons. The request must be validated by the School medical officer.

Students who are experiencing financial difficulties can obtain a student grant for financial support, based on national criteria. Some financial support can also be obtained from different associations, for example, the Alumni Association board and other practitioner associations.

Guidance offered by EnvA for students with problems

The EnvA always take care of students with familial, financial, medical and/or psychological problems. The concerned students have a tutor among the lecturers and staff and there is a special committee, which aims to help the students who are encountering difficulties and to try to find a solution. Since 2014-2015, the system has even been reinforced, by implementation of a systematic tutoring system. Each student will be followed by a teacher throughout the curriculum. In the case of a problem encountered during his/her curriculum, it is initially suggested that he/she contacts his/her tutor. In addition, tutoring includes guidance in finding extramural placements and in defining a professional project.

5.2. Comments

A considerable amount of effort has been put by the academic staff into adapting the curriculum and the teaching methods after the 2007 reform. But, at the end, it was noticed that the way the curriculum and the examination system were organised are rather complex and difficult to understand. Therefore, a new teaching system, a new examination system and a new studies regulation were developed and adopted by the Academic Council and the Governing Board in 2014. The new measures are already implemented for the first year, and they will be progressively generalized for the rest of the curriculum.

Student's life conditions are very important for success. That is why one of the main aims of the School Project is to continually improve all aspects of student's life on the Campus.

5.3. Suggestions

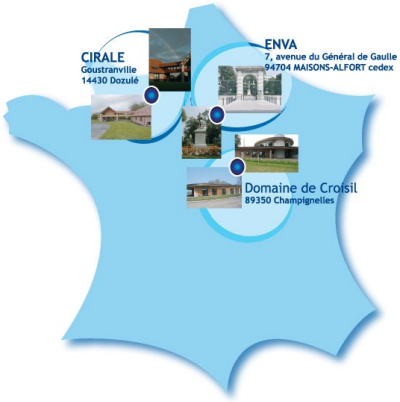
The main challenge is to ensure that the tutorship system for each student will be really effective in supervising student progress, to solve their problems and to validate supervised practice training. The use of teaching evaluation by students also needs to be improved for the clinical rotations.

Finally, the drafting of biosecurity-related procedures must be completed in all sectors of the School.

Chapter 6. Facilities and equipment

6.1. Factual information

6.1.1 Premises in general



The School was created in 1766 in the hamlet of Alfort, two leagues from Paris. Over the next two and half centuries the School has developed and still occupies its original site. It is now located in the heart of the town of Maisons-Alfort (Val-de-Marne).

The development of new teaching topics caused the School to create two further sites situated in two different further site of France. These sites are specialised in large herbivorous animals.

In 1975, the School acquired the domain of Champignelles, in Burgundy, to create an application centre for farm animals. The Centre for Imaging and Research in Equine Locomotor Disorders (CIRALE) was built in 1999 at Goustranville in Normandy, one of the first race horses breeding area in the world. It is a world-renowned reference centre for locomotor pathology in horses.

The main site of the EnvA, in Maisons-Alfort, is located on a plot of 11.9 hectares, including 29 buildings; two of them are university residences. The total floor space of the buildings is approximately 57 000 m^2. Some of these buildings and all the floor of the school are listed in the national supplementary inventory of historical monuments. Two buildings were recently opened: The Centre of biomedical research (CRBM) (2008), the CHUVA (2009) and a third will open in March 2015: the Camille Guérin building.

The EnvA campus hosts other entities: the French Agency for Food, Environmental and Occupational Health & Safety (ANSES, headquarters and two main research labs, food safety and animal health), a horse riding centre (SHEVA, an association attached to the city of Maisons-Alfort), the French pork institute (IFIP), and the startups Alforme (physiotherapy and rehabilitation centre for animals) and Cellvax (biotechnology company).

The field station at Champignelles includes a farm of 86 hectares. The site includes 2 buildings, one of them for student housing and catering, with a capacity of 33 people and the other for teaching. The housing building has undergone a recent renovation.

The site of Goustrainville (CIRALE) is located on a plot of 19 ha and the buildings cover 2725 m^2.

6.1.2. Premises used for clinics and hospitalization

The table 6.1 lists the places available for hospitalisation and animals accommodation. It does not indicate the number of animals hospitalised. A rotation for health purposes is routinely performed among the different hospitalisation rooms, which reduces the capacity to accommodate animals.

Table 6.1: Places available for hospitalisation and animals to be accommodated

	Species	No places
Regular hospitalisation	Cattle	Etable du petit bois : 12 adult cattle, 20 calves or small ruminants Bat Lagneau: 8 adult cattle or 24 small ruminants, 24 small ruminants, 4 calves or small ruminants
	Horses	16
	Small ruminants	See cattle
	Pigs	Pigs can be housed in the cattle barn
	Dogs	91
	Cats	40
	Rabbits	10
	Reptiles	6 terrariums
	Other exotic animals	8 for birds, 5 for ferrets
Isolation facilities	Farm animals	2 (build. Camille Guérin)
	Horses	2 (barn) + 2 (build. Camille Guérin: id. farm animals)
	Small animals	8 for dogs, 6 for cats
	Others	

6.1.3. Premises for animals

Four groups of premises are used for the housing of healthy animals used for educational purposes (the following description excludes clinical facilities and most of the research facilities, however animals can also be housed in these structures).

The Alfort Veterinary School field station in the Burgundy region (CAPA-Champignelles, Yonne)

The farm surrounding the field station building covers 86ha of agricultural land, of which 70ha is drained.

The farm incudes:

- a sheep farm (210 ewes) in a terminal meat-cross
- a herd of suckler cows (27 beef cow subsidies),
- 4 beehives,
- a deer farm (50 female deer), developed with the objective of diversifying farm activities, occupying 10ha which surrounds an experimental building. This building is designed to help in the domestication of the animals and belongs to the category B-type buildings,
- a room to prepare and transform meat and a farm shop. The workshop covers 286m² on 2 floors. The ground floor is certified to allow the preparation of beef, lamb, goat meat, pork and deer meat. Meat is sold fresh, vacuum packed or frozen (n° CEE 8907302).

This workshop allows beef, lamb and deer meat to be prepared and sold.

The sheep farm produces meat using a terminal cross (breeds Romane and Vendéenne). Out of season lambing is used to help teach the students. The students participate in lambing between the 15th October and the 15th December. The ewes are housed in 2 lightly-constructed buildings: a plastic covered building (237m^2) and a wooden building (387m^2). A maternity is installed in each building to improve animal welfare and work security. The feeding system uses the forages produced on-site. Vendéenne lambs are produced and Romane female-lambs are introduced every 2 years. An area next to the wooden sheep barn allows the students to train in handling the animals.

The suckler herd is comprised of Charolais cows. The barn is a plastic covered area of 360 m^2. Two periods of calving have been chosen (autumn and spring) to help in teaching. The feeding system relies heavily on the forages produced on the farm.

The deer farm has been developed to teach aspects concerning welfare and domestication. An octagonal building (313m2) has been constructed in the middle of the deer park (10ha). The animals

have permanent access to the building, which serves as a refuge in case of bad weather. The fawns are kept in the building after weaning during the first winter. The animals are handled in the centre of the building. The experience gained from this building helps explain and teach certain aspects of animal husbandry, useful in the conception of farm buildings. The main points are to maintain animals calm and to improve domestication and security during handling.

Four beehives allow honey to be collected twice a year. A 24m^2 barn is used for storage (grain bins and some of the hay). The straw and the rest of the hay are stored in round bales. Crops are harvested on 24ha using a four year rotational plan starting with faba beans. The cultivated surface produces sufficient feed for the three herds.

The straight forest is maintained and game for hunting is monitored.

Stables for the housing of healthy propedeutic teaching horses (Alfort campus)

The EnvA owns four healthy horses which are used for the teaching of non traumatic procedures (venipuncture, echography, *etc*.). All the procedures have been submitted to the ethics committee for animal use and have been approved. The horses are housed in pens of about 20 m^2 located in the immediate vicinity of the horse clinic. These pens are in the historical part of the campus and located in a building of the 19th century buildings. Air renewal is static, the ceiling height is about 5 m and the pens are largely open. Animals are kept on straw bedding which is cleaned each day and renewed twice a week. These facilities offer suitable housing considering animal wellbeing, even if they are old buildings that are sometimes difficult to maintain.

Stables for the housing of healthy livestock (Alfort campus)

For the purpose of the teaching of caesarean-section procedure, the reproductive medicine unit owns and houses a small herd of sheep. Animals are group housed during pregnancy and after the recovery from the surgical procedure. They are kept in two 40 m^2 rooms each divided in 4 enclosures. Animals are kept on a rubber floor matting and straw. Air renewal is ensured by a mechanical outlet ventilator. The facilities have been upgraded but the wall-coating in some stalls needs to be improved and actions needs to be taken against pigeons in the building.

Laboratory animals facilities (Alfort campus)

Some of the animals used for teaching purposes are housed with laboratory animals (in compliance with French law, animals used in teaching are considered to be used for scientific use). The animals are essentially rabbits, rats and mice, used in physiology teaching.

Rodents and rabbits are housed in the centre for biomedical research, a 800m^2 building constructed in 2007-2008. Animal rooms are air conditioned and air is renewed at a rate of 15vol/h. Mice and rats are group housed in individually ventilated cages. Rabbits are housed individually in adapted housing cages. These animals are housed according to the recommendations of the European directives (2010-63 and French regulations translating them in national law).

Dogs are housed in a collective pen kennel (three sizes: 16, 9 or 4m^2 depending on the size of the social group. Open pens (16m^2) have a concrete floor which is cleaned daily. Animals have the opportunity of hide in dog houses. Most of the animals are maintained in-house on plant-based bedding. Air is renewed at a rate of about 8vol/h and animals have daily access to an outside run. The facility was a former piggery which has been modified and improved (ventilation, resin, grid systems, infrared heating) and is functional for dogs.

Center of imaging and research on equine locomotor diseases, Goustranville, Basse-Normandie

The CIRALE owns 10 healthy horses used for the teaching of locomotor pathology and diagnostic imaging (non traumatic procedures mostly ultrasonography, and sometimes diagnostic analgesia of the distal part of the limb). These horses, age 5 to 19 years old, were donated for free to the CIRALE because orthopaedic handicaps that did not alter their quality of life but prevented them from participating in any sport activities. Horses are kept in herds of 3-6 horses in the fields surrounding the centre, covering about 7ha divided into 5 paddocks. Each paddock is equipped with a large 2m diameter water bucket and an open 5X3m shelter.

The centre also includes 2 barns with a total of 12 large and comfortable 16m^2 stalls used to house client's horses when present for MRI, CT-scan, scintigraphy or consultation. Stalls (wood-shaving bedding) are cleaned and changed every day. They are also equipped with intrusion and fire

detection systems. Horses used for teaching can be kept overnight in these stalls during training courses for example or other reasons.
Half of the main barn is used for storage (shavings, hay and straw). The hay is stored in round bales (for the teaching horses housed in the field) or in rectangular bales (for client's horses housed in the barn).

6.1.4. Premises used for theoretical, practical and supervised teaching

All the premises are listed in tables 6.2 to 6.5, including those of CAPA and CIRALE.

The majority of practical and supervised work for small and exotic animal medicine and surgery is performed in a major part in the Hospital. Reproduction consultations (CERCA) and Physiotherapy, Rehabilitation (UMES) are performed in two different buildings close to the Hospital.

The premises for clinical work and student training in the hospital are listed in the table 6.2. Premises for group work in the Hospital are listed in the table 6.4.

The equine clinic area encompasses the Hall Marcenac and the Hemicycle (open boxes). Details about the rooms available are listed in table 6.2. The CIRALE works on equine locomotion and equine sport medicine.

Table 6.2: Premises for clinical work and student training

Small animals	Nbr consulting rooms Nbr surgical suites	12 (ground floor), 3 (first floor), 3 (second floor), 2 (CERCA), 2 (UMES) 13
Farm animals	Nbr examination rooms Nbr surgical suites	1 (farm animals, Etable du petit bois) 1 (farm animals, Lagneau)
Equine	Equine clinic (Maisons-Alfort) Nbr examination areas Nbr surgical suites CIRALE Nbr examination areas Diagnostic imaging Sports medicine Horse outdoor examination areas	 4 1 4 4 modalities High speed treadmill video-endoscopy Different tracks + 20x40m covered arena (ridden horses)

Table 6.3: Premises for lecturing

Name of the lecture hall	Number of places
Bourgelat 2A	180
Bourgelat 2B	165
Blin	120
Drieux	115
Lagneau	120
Brion	56
CIRALE auditorium	60
CAPA new building	290
TOTAL	**1106**

Table 6.4: Premises for group works

Name of the room	Number of places
Ferrando	80
Atelier room 1	15
Letard A	36
Letard B	36
Letard computer room	40
Bourgelat multimedia	18
Bourgelat TD 1A	40
Blin salle TD ouest	40
Marcenac roomTD	40
Drieux TD	15
Lagneau TD	40
CHUVA ground floor 1	15
CHUVA ground floor 2	15
CHUVA ground floor 3	15
CHUVA 1st floor 1	15
CHUVA meeting room (1st floor)	10
CHUVA meeting room Mérial (1st floor)	20
CHUVA meeting room (2nd floor)	12
Equine meeting room	20
CIRALE meeting room	16
CAPA new building – TD 1	12
CAPA new building – TD 2	12
CAPA student house	20
TOTAL	**582**

Table 6.5: Premises for practical work

Name of the room	Number of places
Camille Guérin – anatomy 1	36
Camille Guérin – anatomy 2	18
Camille Guérin – pathology	18
Camille Guérin- microbiology - parasitology	36
Camille Guérin - histology	36
Camille Guérin - ostéology	36
Camille Guérin - chemistry	36
Bourgelat 3A	36
Bourgelat 3B	36
CAPA - pathology	12
CAPA - parasitology	12
TOTAL	**276**

Description of health and safety measures in place for practical work and the laboratories

Depending on the type of risk, rooms for practical work are equipped with appropriate protective equipment (fume cupboards for chemical risk *etc.*). Personal protective equipment is available for students: goggles, gloves ... Practical work rooms are equipped with first aid equipment and a means of communication (telephone).

In microbiology, the bacterial strains used in training are non-pathogenic to humans. Part of the first working session is dedicated to the hand hygiene. Moreover, before the beginning of a practical session, faculty members remind students of the instructions relative to health and safety measures. These instructions are also written in the teaching document relative to the practical work.

Health and safety measures are also applied in distant sites. In the CAPA, safety rules are presented to students as they arrive on the site. They must be provided with a coat reserved to the site and boots. For outside visits, specific protective equipment is provided when needed.

Students are also encouraged to report special situations: pregnancy, recent travel to a risk country…

6.1.5. Diagnostic laboratories and clinical support services

Diagnostic laboratories

BioPôle Alfort is a recently created Veterinary Biomedical Platform on the Alfort campus, providing services and scientific support to the EnvA clinics and academic and industrial collaborators/clients. The Platform was born out of the merger of several long established laboratory activities. It offers diagnostic and analytical technologies and expertise in the fields of infectious diseases, pathology, hæmatology, cytology, nutrition, *etc.* The platform also provides pharmaceutical technologies (recommendation, production and supply of extemporaneous preparations for veterinary use). It occupies 1 000m² in the new building dedicated to biological activities (Camille Guérin building).

The main applications of the platform are clinical diagnosis, pre-clinical and clinical trials in various species (dogs, cats, horses and laboratory & farm animals). BioPôle Alfort also participates in the training of veterinary students and residents in pathology.

The Biopôle platform has competitive advantages such as:

- facilities and the recognized know-how of its team (12 veterinarians, 1 pharmacist, 18 technicians, 4 engineers, 1 hospital practitioner), support in the protocol conception of protocols;
- an integrated offer, from sample preparation to statistical analysis for clinical diagnosis, pre-clinical and clinical trials;
- a translational approach, in connection with the Biomedical Research Centre (CRBM), the Animal Clinical Research Institute (IRCA) and the Alfort Veterinary Teaching Hospital (CHUVA).

Central clinical support services

Anaesthesia is performed by two senior clinicians. One works mainly to the small animals and sometimes on equine cases; the second one is in charge of horses and large animals. Both of them supervise junior clinicians specialized either in small animals or equine or large animals.

Diagnostic imaging is currently organised into separate services: small animal and equine services, with very modern equipment. On Alfort site, the CHUVA has the equipments to perform all of radiological and ultrasonic examinations. The Small animal clinic has been recently equipped with a CT scan. The CIRALE is a world leader of horse medical imaging. It has advanced equipment for thermography, MRI of horse standing and lying, digital radiography and high definition ultrasound.

There is also a central pharmacy in the companion animals Hospital, which deliver drugs to customers after prescription by the clinicians. For other hospitals, pharmacy services are de-centralised to each clinical area.

6.1.6. Slaughterhouses facilities

The EnvA has an arrangement with the slaughterhouse at Migennes, fifty kilometers away from the Champignelles Centre. This enables each student to spend here two morning sessions at the slaughterhouse .

This slaughterhouse operates most days from 6 am to 2 pm, and handles cattle and sheep. Total output is about 20 000 tonsnes per year. About 250 cattle are slaughtered each day and 400 sheep three times a week.

The EnvA does not make use of a single slaughterhouse facility for teaching purposes but, as indicated above, and in addition to the two visits of Migennes, all students are required to spend one week on a veterinary public health placement, in a slaughterhouse.

6.1.7. Foodstuff processing unit

Food processing industries (meat, milk and dairy products, poultry, seafood) are studied during 12 hours of lectures in the second year, illustrated with tutorials and picture presentations.

The EnvA has established in the past relationships with several local food processing units, including a commercial caterer, a production plant of smoked salmon and a production plant of Burgundy snails. Unfortunately, because of national level budget cuts, some of these visits were stopped several years ago.

6.1.8. Waste management

On the EnvA Campus, the following categories of waste are collected separately (numbers in brackets are the amounts collected in 2014): garbage (121t), recyclable garbage (packages, *etc.*), paper (45t), glass (3,5t), batteries, printer cartridges, expanded polystyrene, bulky materials (31t), (5t), medical waste (59t), animal cadavers (109t), chemical waste (1,4t) and animal excreta (195t).

The garden unit runs two composting units and this reduces the amount of onsite vegetal waste produced.

Ordinary industrial waste (including recyclable garbage) is managed by the collection of containers placed in 12 waste-islets on the campus. Each waste producing unit is responsible for the transfer and deposit of waste in the right container. These containers are emptied three times a week. Paper, batteries, glass, printer cartridges, polystyrene, bulky waste and electronic waste each are all collected at one collection point(all these being in different areas depending of the type of waste) under responsibility of the producing units.

The units producing animal cadavers are responsible for their transfer to a refrigerated room which is emptied by an external rendering company accordingly to the French legislation. The onsite transfer is performed by means of a specific wheeled trolley for the companion animals which come from the clinical services, and using a fork-lift truck for the heavy animals (cattle and horses) and with hand trolleys for other cadavers (research animals).

In the refrigerated room, depending on the type of animal (the legislation distinguishes between horses, production animals and other animals), the cadavers are either stored in specific containers ,according to their type or for the large ones, the cadaver is hung before being put on the floor for removal by the rendering company. The rendering plant must be individually notified of the presence of horse and cattle cadavers (due to traceability processes) and they are collected on call; other kinds of cadavers is removed once a week.

According to French legislation, there are three categories of animal excreta: companion animal and "farm animal" including horses, and research animals.

For companion animals, excreta (urine and pen washing water) are evacuated by the sewer system. Solid waste is collected and evacuated as medical waste. There are exceptions done for animals undergoing chemotherapies with cytotoxic drugs (chemotherapies in oncology) where the excreta are collected on an absorbent cellulose media and grouped with chemical waste. The excreta and bedding of companion animals used for breeding are evacuated with farm animal excreta.

For production animals and horses, the bedding is collected by a company authorised by a prefectoral agreement to spread this kind of waste in fields. On site this waste is stored in a concrete bedding collection structure. Horse excreta and bedding are mixed with that of the horse riding association housed on the campus and it is not possible to estimate the overall volume produced. The bedding storage area is in poor condition (due to cracks in the concrete and damage causes by the truck and tractor tools used to deposite and remove waste), and also it is not connected to the sewer system; the area protected from rain and birds.

Laboratory animal bedding is treated as medical waste and disposed of following the appropriate procedure.

The medical waste is packaged in specific bags or boxes (sharps) by the producing units and these units are responsible for the transfer of these packages to water-tight containers situated in 4 collection sites scattered across the campus. These containers are emptied three times a week by an approved company and incinerated. This type of waste only remains on site for less than 48hr.

Chemical waste is collected in specific containers by the producing units in three categories: toxic, mutagenic and explosive). The mutagenic waste includes all of the medical waste and excreta produced by animals undergoing anti-tumoral (genotoxic) chemotherapies. These containers are stored in a-bunker and collected once a year by a company specialized in the treatment of chemical waste.

Infectious waste is produced in our two biosafety level 3 laboratories and our three biosafety level 2 laboratories. This kind of waste is inactivated by autoclave treatment and disposed of as medical waste disposal procedure.

Waste management is also applied in CAPA and CIRALE.

6.1.9. Future changes

A real estate plan for the renovation and redesign of the site has been developed to enable a more functional organization, to improve the working conditions and safety and to insure a sustainable financial recovery through the savings it will generate with regard to operating costs,. The project, which covers the period 2014-2020, is based on three main axes:

- structuring a research centre backed by the CRBM, which may relocate a large part of research activities at the EnvA,
- the creation of two clinical teaching centres for large animals (cattle, sheep and horses)
- The creation of a centre for the general educational activities and administration ("Agora").

This project involves:

- renovation of existing surfaces (12 490 m^2)
- the demolition of some buildings (12 130 m^2)
- construction of a new building (8,000 m^2)

The total project cost is estimated at 100 M€, broken down into two parts:

- 60 M€ could be supported under the contract between the State and the Regional Council. A part of 30 M€ from Ministry of agriculture facilities is already assured.
- 40 M€ for which other funding is studied.

6.2. Comments

The school has been fortunate to benefit from new constructions in key strategic areas: clinical for companion animals and the Camille Guerin building, which includes all the activities of the department of biological and pharmaceutical sciences and the central laboratory "Biopôle".

Another chance is to benefit from the two satellite sites, which are very useful for implementing all the requirements of the veterinary curriculum and develop all the necessary skills.

However, there are still many old buildings being operate, and the rationalization depends on the effective implementation of the multiannual real estate plan.

6.3. Suggestions

As already indicated, it is essential for the School to implement the real estate plan. It is particularly important for the equine clinic and the farm animal clinic, even if they have been upgraded to improve biosecurity.

About extramural facilities, even if all the aspects of food hygiene are currently included in the curriculum, the restoration of agri-food industries visits is necessary.

Chapter 7. Animals and teaching material of animal origin

7.1. Factual information

7.1.1. Anatomy

Table 7.1: Material used in practical anatomical training

	Dogs		Ruminants		Equines		Other	
	2013-2014	2012-2013	2013-2014	2012-2013	2013-2014	2012-2013	2013-2014	2012-2013
live animals	4	4	2	2	2	2		
whole cadavers	58	58	10	10	4	4		
parts of these cadavers	116	116			2	2		
parts of cadavers from slaughterhouses e.g. ultrasound					28 distal limbs	28 distal limbs	28 eyes of pigs	28 eyes of pigs
plastinated specimen	Hearts: 80 hearts of dogs, cats and pigs, 20 hearts of large animals Mouth and larynx: 10 of carnivores, 17 of large animals Heads in section: 13 of carnivores, 10 of large animals Brains: 72 of all species Dissected limbs: 20 of horses, 5 of dogs Kidneys: 15 of dogs, 5 of cats Spleens: 15 of dogs Varia: 50 organs of cats and dogs							
specimens in anatomical museum	1151 specimens of anatomy demonstrating all aspects of the anatomy of domestic animals (including birds) 197 jaws used in to the diagnosis of age 192 specimens of teratology Hundreds of bones							
computer assisted teaching	Each lecture has its own website providing texts, images, related web links							

Origin of materials

Whole animals are commercially sourced and prepared by the staff. Limbs of horses and eyes of pigs are collected from slaughterhouses.

Chicken anatomy is now taught during the first semester (2014/2015). It used to be exposed prior to the avian autopsies during last years.

Storage of materials

Formalin was eradicated in 2010. All cadavers are now embalmed with a specific method using zinc chloride. Vessels are injected with coloured latex (small animals) or plaster (large animals). Cadavers are stored in large positive (+4°C) or negative (-20°C) cold rooms for longer periods.

The production of plastinated specimens has been developed since 2006. This material is used for supervised practical training on thematic sessions (for example heart, larynx, para-nasal sinus, central nervous system… mixing species). Old wet preparations preserved in formalin were either plastinaded or preserved in a non-toxic solution. They can be presented to the students in a very safe way.

7.1.2. Pathology

Table 7.2: Material used in practical anatomical training

	Species	Number of necropsies			Average
		2013-2014	2012-2013	2011-2012	
Food-producing animals	cattle	441	354	402	511
	small ruminants	45	29	27	
	pigs	10	6	4	
	other farm animals ([4])	70	77	67	
Equine		67	56	62	70
Companion animals/exotics	dogs	137	109	129	291
	cats	172	127	135	
	others	14	24	25	
Savage wildlife		87	84	85	85

([4]) including rabbits, poultry, deers, ostreches

Autopsies of companion animals are performed by the Pathology department of the School. Cadavers mainly come from the Alfort veterinary teaching hospital or private clinics and owners from the Paris region. Post-mortem examination of Food-producing animals is performed by the Pathology department and by the large-animal clinical department. A lot of autopsies are carried out in the autopsy room at Champignelles. Autopsies of equine are performed in the Pathology department and in the ANSES autopsy room in Goustrainville. Almost all the cases can be submitted for histopathological analysis if necessary.

7.1.3. Animal production

7.1.3.1. On the site of the institution

The stock at the School Farm at Champignelles numbers:

Sheep:
- up to 400 lambs
- 210 crossed bred (Romane x vendéenne) ewes
- 13 Rams

Cows:
- 20 Charolaise cows
- 9 heifers
- 4 beef calves

Deer:
- 50 female deer
- up to 50 fawns
- 2 male deer
- Up to 50 old deers

Bees :
- 4 hives

7.1.3.2. On other sites to which the institution has access

The animal stock is used for educational purposes (listed below) which are taught at least partially at Champignelles:
- Herd fertility monitoring and related activities allowing each student to perform rectal examinations.
- Lameness work and mobility scoring
- Condition scoring
- Calving practices
- Herd health plans
- Husbandry, environmental and management issues
- Nutrition
- Foot trimming

- Ante- and post-mortem diagnosis.
- Lambing practicals
- Foot trimming
- Sheep handling
- Flock health plans
- Flock nutrition plans
- Poultry flock health plans
- Environmental improvements
- Humane dispatch and stunning
- Pig flock health plans… etc.

7.1.4. Food hygiene/public health

The work carried out at the slaughterhouse at Migennes allows students to inspect of carcasses and offal. In addition, there is practical work performed at the Champignelles centre, over thirty pieces of offal (livers, hearts, lungs, kidneys of cattle and sheep) available at each session.

In addition to 10 hours of lectures about food microbiology and 16 hours of lectures on hygiene, quality and safety, there are sessions on the analysis of results in food microbiology and risk analysis (4 sessions of directed work, 1/8th promotion), as well as case studies and hot topic analysis (5 sessions of tutored work, 1/8th promotion), such as:

- endocrine disruptors in food
- the food crisis due to neuroviruses
- nanotechnology and health risks
- *etc.*

The compulsory placement in a slaughterhouse is also contributing to the teaching of public heath approach.

7.1.5. Consultation and patient flow

7.1.5.1. Consultation hours

Consultation hours and emergency services for the different clinics are listed in the table below:

Clinic	Consultations			Emergency service
	Discipline	Day	Time	
Small animals	Behaviour	Thu	08:30-18:00	
	Cardiology	Mon-Tue-Thu Wed	09:00-18:00 09:00-13:00	
	Dermatology	Mon-Fri Tue	08:00-13:00 14:00-18:00	
	Exotic animals	Wed Thu	08:00-18:00 14:00-18:00	24h/day/11 months
	Internal medicine*	Mon-Wed Thu-Fri	08:30-18:00 08:30-13:00	
	Neurology	Mon Tue-Wed-Fri	08:00-18:00 08.00- 13.00	
	Neurosurgery	Thu	14:00-18:00	
	Nutrition	Thu	09:00-18:00	
	Ophthalmology	Mon-Thu Fri	08:30-18:00 08:30-13:00	
	Orthopaedics	Mon	08:30-18:00	
	Physiotherapy	Mon-Fri	09:00-18:00	
	Reproduction	Mon-Fri	09:00-18:00	
	Surgery	Mon-Fri	08:30-13:00	

		Tue	14:00-18:00	
	Vaccinology	Mon-Thu Fri	08:30-18:00 08:30-13:00	
Equine clinic (Alfort)	Surgery elective	Mon-Wed	08:30-18:00	
	Medicine elective	Mon-Wed	08:30-18:00	
	Orthopaedic	Thu-Fri	08:30-18:00	
CIRALE	Orthopaedic	Mon-Fri	08:30-18:00	
Large animals		Mon-Fri	08:00-18:00	

(*) including endocrinology, gastro-enterology, urology, oncology

The table below lists the number of weeks, in the course of the year, during which the clinics are open and the number of consultation days each week:

	Small animals	Equine	Large animals
Number of weeks, in the course of the year, during which the clinics are open	48	48 (Alfort) 52 (CIRALE)	46
Number of consultation days each week	5 & 7 (*)	5 & 7 (*)	5
Consultation hours	Mon-Fri: 08.00-18.00 Emergencies : 24hrs a day		Upon request - appointment by e-mail or by phone

(*) 5 for regular appointments, 7 for emergencies

7.1.5.2. Patient flow

Table 7.3: Number of cases: a) received for consultation, and b) hospitalised in EnvA clinics in the past three years

	Species	Number of cases						Average
		2013-2014		2012-2013		2011-2012		
		a	b	a	b	a	b	
Food-producing animals	Bovine, small ruminants, other ruminants (camelids)	473 (*)		412 (*)		449 (*)		445
	porcine							
Poultry - Rabbits		991	250	893	270	859	276	914/265
Equine (Alfort)		321	183	286	189	400	199	1368/190
Equine (CIRALE)		982	0	1001	0	1114	0	
Companion animals/exotics	canine	20817	1394	20299	1710	21299	1530	32888/2840
	felines	11794	100	10337	987	10472	1179	
	others (**)	1166	204	1144	230	1336	287	

(*) all animals brought for consultation by their owners are hospitalised along with other ruminants

(**) reptiles, guinea pigs, rats, tortoises, lizards, birds

The equine clinic receives out-patients on a daily basis. All day-time patients are examined by an intern, helped by a student and they will receive a further examination by a senior clinician. Emergency rotations are shared between junior and senior clinicians, at night and over week-ends. The intern will receive the patient and present it to the clinician who is on call.

For the farm animal clinic, it is difficult for health reasons to hospitalize animals and then return them to the farm of origin. Therefore, a large majority of the animals that are hospitalised in Alfort are euthanatized and autopsied at the end of the hospitalisation period. The animals are hospitalised in the stable for clinically affected animals situated behind the Letard building. For

years, animals were supplied by a livestock merchant. Recently, the situation has changed because the proportion of referred cases has increased dramatically. This has resulted in an improvement in the overall quality of the clinical cases that are managed in our hospital. It should also be noted that a report is drafted for all referred cases and sent to the referral veterinary surgeon. There are however some exceptions to euthanasia and necropsy, with:

i) animals brought to the school by their owners and this animals are hospitalised in the stable for healthy animals situated in the Lagneau building, and

ii) animals that are managed for reproduction and C-section each year. In addition there are increasing numbers of ruminant autopsies that are undertaken in the Champignelles Centre. They are performed in the autopsy room where poultry and piglet autopsies are already regularly carried out.

The animals which are hospitalised can be transported by their owners to the EnvA but generally the School's cattle truck (bought for the current one by the department of animal production and public health in 2012) is used to fetch them. The animals are mainly ruminants and sometimes camelids (llamas, alpacas, camels…). Pigs are exceptionally taken into the facility (1 to 3 per year, 2 on average): however, they are often companion animals and not farm animals.

All records of hospitalized animals are written by students (generally interns) under the supervision of a teacher and the records have been centralised and computerized since 2000 in order to make retrieval of cases easier.

The EnvA is well equipped compared to private practices: it is well endowed with imaging equipment (various ultrasound and radiography machines) and this together with the level of activity; this has lead to the approval of Alfort for the residency programme with the ECBHM. One resident successfully passed the certification examination in 2014 and is now a junior Diplomat of the College.

In addition, the hospital buildings are outdated. But there is a project which intends to group the offices of all the DPASP staff as well as both stables in the same building. This will lead to the possibility of sharing some technical rooms.

7.1.6. Vehicles for animal transport

At each site, the vehicles used for the transport of animals:

- At Alfort, a recently cattle truck OPEL (bought by DPASP in 2013) for all farm animals;
- At the CIRALE, two vans for the transport of horses (one RENAULT (1999) and one THEAULT (2012);
- At the CAPA, a cattle truck Master Renault (1995) for farm animals.

7.1.7. On-call emergency service

Small animal clinic

An emergency service was started it functions 24 hours per day, 7 days per week. It welcomes patients over 11 months (from September to July) after the owner has called ahead or without being informed that the animal will arrive. The species treated for an emergency are mainly dogs and cats but the number of exotic animals is increasing regularly.

Since 2012, this service is under the supervision of the Director of Clinics, as no senior clinician is available to take in charge this service.

The consultations are performed by the students, under the supervision of one intern and one junior clinician. Four to six students, two interns and two junior clinicians are allocated to this service throughout the week. Students are divided into groups, in order to perform 8 hour-rotations during the day and the night.

This team is reinforced by the participation of clinicians from other services (surgery, medicine, cardiology, ophthalmology, neurology, exotic animals) as needed.

The equipment available in the emergency service is adequate for all the requirement for all the complementary exams that need to be done in an emergency (blood analysis, radiography, ultrasonography…). Surgical rooms are available to perform the surgeries that cannot be delayed and are performed during the night or at the week-end.

When hospitalisation is needed, this emergency collaborates strongly with the intensive care service or the hospitalisation service, which are both located at the same floor of the hospital.

The clinical cases recruited from the emergency service can be divided in two categories:

1 Emergencies: Some of these cases are referred by private practitioners who are not qualified for the management of theses emergencies but the majority of the emergencies are first opinion. These cases require a rapid and appropriate management. They provide students with practical training in emergency.

2 First or second opinion consultations without an appointment: some of the cases presented in the emergency service are not considered as emergencies. The owners come with no appointment to get an immediate consultation either because they are worried about the clinical signs, or because they want a consultation outside conventional. These cases do not require a specific management compared to the consultations that are performed during the day. They provide interesting first opinion cases for our students, and are very similar to the activity of a private practice.

Equine clinic

Emergencies represent a substantial part of the case load for the equine clinic, roughly one hundred of cases per year (16%). They are mainly referred cases and most of the time they are colics or lacerations. An emergency rotation is included in the planning for A4 students as well as for A5 and interns for most of the year. Student undertaking the emergency rotations work for night emergencies as well as for week-ends and holidays. An emergency team is composed to two to three students, one A5 and, depending of the type of emergency, one or two interns.

For the 8 weeks period when no A4 students are available in the clinic, or during the spring when some interns are at ONIRIS (Nantes) for their theriogenology rotation, the nights and week-ends are organised differently. Students and interns are on emergency call once a week and part of each week-end. This system means that students experience to a maximum of emergency cases and are very closely involved in each case. The entire equine clinic and its equipment are available for emergency work-up and an experienced clinician is always present for each of the cases admitted. CIRALE does not receive emergencies.

7.1.8. On farm teaching and outside patient care

7.1.8.1. Ambulatory (mobile) clinic

The Ambulatory Clinic consists in four major axes.

Firstly, reproductive monitoring is performed on 1410 animals in four farms situated in the vicinity of Alfort (less than 50 km). Secondly, clinical services are provided to these three farms (for instance doing surgery acts). Thirdly, health monitoring of 240-350 (up to 400) animals from three or four farms (up to 6, numbers depending on the year), also situated in the vicinity of Alfort, is performed. Fourthly, ambulatory work is organised through an agreement between the EnvA and three or four (according to the year) farm animal veterinary practices. These practices are situated:

- in the Champagne Ardennes region (about 200 km from Alfort)
- in the Normandy region (180 km from Alfort)
- in the vicinity of the Champignelles Centre.

In all cases, students actively participate in the management of the clinical cases, under the supervision of teachers.

Vehicles that are used for the ambulatory clinics are:

- two 5-seater-vehicles (Renault Kangoo, the last one bought in 2010)
- one 2-seater-vehicle (Renault Kangoo)
- two 9-seater vehicles (Fiat Ducato and Renault Trafic, the last one bought in 2013 by the DPASP, department of animal production and public health)
- one 15-seater vehicle (Renault Master)
- one 22-seater vehicle (Volkswagen)

All vehicles are normally driven by the teachers who accompany the students, except the 15- and 22- seaters vehicles, which are driven by a bus driver, once a week on average.

Reproduction follow-ups (pregnancy diagnosis, control of uterine involution, infertility):

A total of 4 farms are monitored, representing a total of 1410 farm animals.

Number of animals:

- Bissy : 360 Holstein cows
- La Tremblaye: 100 Holstein cows and 700 Saanen goats
- Grignon: 120 Holstein cows, 100 ewes
- Plaine Environnement : 30 ewes

Number of visits:

At least 60 visits are performed yearly, of which around 10 are undertaken outside the normal teaching periods.

Herd medicine

Number of visits:

From the Champignelles centre, a number of visits are regularly organised:

- 10 beef cattle farms per year
- 10 pig farms per year
- 10 poultry/rabbit farms per year
- Around 40 dairy farms visits per year

From Alfort, a number of 10-12 visits on average are undertaken each year to study "population medicine" cases referred by field veterinarians.

The average herd size is as follows:

- 40 dairy cows per herd,
- 40 suckler cows per herd,
- 150 sows per herd,
- Poultry and rabbits farms are more variable in size.

Students also accompany the EnvA's farm animal clinicians on farm visits during their two-week rotation in the 4th year of the curriculum.

Table 7.4a: Number of cases seen by the ambulatory (mobile clinics) in the past years (*)

	Species	Number of patients			Average
		2013-2014	2012-2013	2011-2012	
Food-producing animals	bovine	2072 (*)	1867 (*)	1927 (*)	1955
	small ruminants				
	porcine				
	other farm animals				
Poultry (no of flocks)		10	10	10	10
Rabbits (no production units)		0	0	0	
Equine		None			
Other					

(*) including the reproductive monitoring follow-up cases seen at the 4 farms in the vicinity of Paris. A total number of 1410 animals are monitored.

7.1.8.2. Other farm services and outside teaching

The EnvA has formal agreements with a group of pig producers (CIRHyo), a group of poultry farmers (CAFO), veterinary practices (in Pont-Audemer, Vouziers, Le Chesne) and with a group of veterinarians involved in continuing education (GTV89).

The reproductive monitoring activity allows for students adequate training in the field of pregnancy diagnosis and pathology related to bovine infertility. After each visit, producers receive the inspection report with the treatments to be implemented. These follow-ups are performed with the agreement of the veterinarian who provides medical drugs. A young teacher or an intern records all this information on a livestock tracking software.

The training to perform a herd audit (study of a population medicine case, with the help of technical and economic results) is made at the Champignelles Centre, and, more lightly, from the site of Alfort. The protocol used is very similar to that of veterinarians who practice this activity.

Either farmers directly contact the EnvA for a consultation, or the case is referred by the herd veterinarian. In all cases, the EnvA contacts the herd veterinarian, before the audit. The relationship between the EnvA and local veterinarians are excellent. A document is produced after each audit: it contains the data collected, analysis, conclusions and recommendations. Several copies are sent to the herd veterinarian who transmits the report to the farmer. The protocol has been written according to the needs of farmers, veterinarian, and to meet educational goals.

Table 7.4b: Number of herd health visits in the past three years

	species	Number of patients			Average
		2013-2014	2012-2013	2011-2012	
Food-producing animals	bovine	22	16	24	32
	small ruminants		3		
	porcine	10	12	10	
	other farm animals				
Poultry (nbr of flocks)		10	10	10	10
Rabbits (nbr production units)					
Other	None				

7.1.9. Other information

Clinical Specialisation

In the EnvA, consultations are offered in the following areas:

Small animals:

- Anaesthesia*
- Behaviour (1 day a week)
- Cardiology*
- Dermatology
- Diagnostic Imaging
- Emergency and Critical Care*
- Exotic animals*
- Genetic
- Internal Medicine including endocrinology, urology, gastro-enterology
- Neurology* and Neurosurgery*
- Nutrition (1 day a week)
- Oncology (1 day a week) till 2013
- Ophthalmology*
- Orthopaedics*
- Parasitology
- Physiotherapy and Rehabilitation
- Reproduction*
- Soft Tissue Surgery*

All these specialisations are provided as a full-time service from Monday to Friday, except when the activity is mentioned in brackets. In the specialisations indicated with *, the School provides a comprehensive 24/7 service, including out-of-hours emergency cover.

Equine:

- Anaesthesia (2 days a week)
- Dermatology (by appointments only)
- Internal medicine
- Ophthalmology (by appointments only)
- Orthopaedics

- Surgery

Food-producing animals:

- Cattle
- Small ruminants

Relationships with outside practitioners and other organisations

Small animals

The main areas where the School has a relationship with outside practitioners are:

- Referral of cases to the clinics;
- Participation in the 24-hour on-call emergency service;
- Provision of teaching in specialist areas (e.g. exotics (birds, reptiles), behaviour, dentistry) where the University's expertise is limited;

Clinical practice includes both first opinion and referral cases. The distribution between first opinion and referral cases differs between clinical activities. In specialised activities (cardiology, neurology, ophthalmology), referral cases are predominant. In the other activities, most of cases are first opinion or cases sent by general practitioners without any reference letter.

The balance between these cases gives every student the opportunity to experience different levels of difficulty and thus to achieve competence in the full range of skills.

Equine

Referral veterinarians are in regular contact with the Equine clinic, for advice as well as when cases are referred. This close relationship is reinforced with two sessions of clinical case presentations a year, held by the interns, where all referring veterinarians are invited.

The continuous education sessions held in the clinic provides another occasion to maintain adequate connections with outside practitioners.

All the cases the CIRALE receives are referred cases. The clinicians maintain a constant and close relation with the referral veterinarians that are from throughout Europe. A continuous education program managed by Pr DENOIX attracts veterinarians from France and Europe. Since January 2015, a special course designed for veterinarians willing to train in physiotherapy will be held between the CIRALE and Alfort sites.

Large animals

As indicated in chapter 7.1.5, more than half the hospitalised cases are referred to Alfort by practitioners (and give rise to written reports) while a quarter of cases is provided by a cattle dealer who sends calves for instance with omphalitis or growth retardation as well as cull cows that are used for surgery. The remainder of cases consists mainly of small ruminants or camelids that are brought to Alfort by their owners.

Administrative Systems

CLOVIS software is used as the client and patient database for all species. This is used for all billing, pharmacy dispensing, appointments, sales, etc. Much of the hospital management information is retrieved from here. We also use the CLOVIS system to record clinical diagnostic laboratory information. A separate digital image storage system (Pacs) is used for radiographs and ultrasounds.

As well as the electronic records, every patient has a paper case file, as not everything is on an electronic system. For example, some clinicians in dermatology, neurology, ophthalmology use drawings to better describe the lesions. These drawings are not yet in the electronic file.

The financial and administrative information about the clinics is extracted from CLOVIS and analyzed in a software suite: COCKTAIL.

7.1.10 Ratios

see annex 1.1.

7.1.11. Other species

The wildlife clinic (CEDAF) receives about 2000 animals per year: birds (85%) and mammals (15%), belonging to more than 50 different species of urban and peri-urban fauna found in Ile-de-France region. In accordance with National laws, the birds and animals are treated and rehabilitated in specific sectors (for example, birds in aviaries) in order to release them into their natural environment. The veterinary students (100 to 120 per year) who work at the clinic are volunteers and are recruited from the first three years of the curriculum. The students receive both theoretical and practical training during daily rotations.

7.2. Comments

We believe that, in all branches of our clinical services, the standards of the School compare favourably with those of private practices. The information provided elsewhere in this SER indicates the high level of investment that the institution has made, and continues to make, in clinical facilities, both buildings and equipment. A CT-scan has been recently acquired and has been used since July 2014. This equipment should contribute to further development of the Imaging service.

During the past years, teaching has been improved in many domains, and especially:

- the companion animal hospital: the EnvA has one of the largest university hospitals in Europe,
- the farm animal clinic, particularly with the development of an ambulatory clinic,
- food hygiene and inspection, with the introduction of a compulsory placement in slaughterhouses.

7.3. Suggestions

To improve performance monitoring of clinical procedures, to teach new customer relationship management techniques, and to better integrate the clinical software with the financial and accounting information system, the EnvA wishes to implement of a new software system to replace CLOVIS that is planned to be operational in 2016.

Maintaining clinical performance depends on the development of business, as well as related services such as the Biopôle. This development will be defined in the context of contracts of objectives and resources between these units and the Head of the School.

Chapter 8. Library and learning resources

8.1. Factual information

Brief overview of library facilities

The Library was created at the beginning of the school, in 1766. At the end of the century 19th, it was settled down in the 1st floor of the finest School's building, which also houses the Fragonard Museum. This Alfort library owns 180 000 volumes. It is one of the world's richest libraries in the domain of veterinary medicine.

The total area is 800m^2 and provides a great reading room (96 m^2). Two other smaller reading rooms are available for users. There are currently approximately 100 reader places.

It provides the public with 6 computers, 2 printers, 1 scanner, 2 photocopiers and a WiFi system.

Periodicals and on line services

The library provides 2 300 periodicals (2 150 by the freedom file subscription to Elsevier and 150 through other subscriptions). In order to be available at distance, these periodicals are on-line as possible. The choice of the titles was made after consulting research units members. Researchers can also access to INRA[4] and/or INSERM[5] platforms.

The institutional web pages provide the catalog of paper periodicals (600 titles including 200 current periodicals). Students and teachers can access on-line periodicals and services from any computers in the three school's sites.

Books and non-books have been referenced on the library catalog since 1980. "Books" are monographs, congress proceedings, theses of the four French veterinary schools[6], publications of Alfort's researchers, periodicals' special issues.

Exchanges outside the School

The library has links with those of the other French veterinary schools. It has also frequent interactions with the worldwide network of veterinary faculty or school libraries and belongs to the UPE libraries community.

The librarians answer to more than 2 500 requests per year, mostly from libraries of medical, pharmacy and dentistry faculties, veterinary practitioners, laboratories, scientific organizations.

The digitization of ancient books is a major heritage issue. It will allow a wider use of them by researchers, including those working in history and social sciences. The Alfort library has developed a project with the Bibliothèque Inter-Universitaire de Santé de Paris, a department of the Paris V University. Our library is responsible for the choice and web display of the veterinary collection. Up to now, 320 ancient veterinary books are available on the following link (http://www2.biusante.parisdescartes.fr/livanc/?intro=alfort&statut=charge). Dictionaries can be downloaded here: http://www.biusante.parisdescartes.fr/histmed/medica/dictionnaires.htm

The Alfort library is also included in a national program of digitisation by the French National Library (BNF). The oldest veterinary journal, the *Recueil de Médecine Vétérinaire*, was digitised from its first issue (1824) to 1942. The same process was applied to the *Bulletin de la Société Centrale de Médecine Vétérinaire* (1864-1927), *La Clinique Vétérinaire* (1843-1868), le *Journal de Médecine Vétérinaire Théorique et Pratique* (1830-1836)… Up to now, 165 000 pages are available on-line. The process is further conducted.

Full text research can be performed on all periodicals.

Departmental libraries

Four educational units have an organized library: Feeding, Parasitology, Physiology and Animal Reproduction. Students have access to these libraries under conditions.

Opening hours

[4] INRA: National Institute of Agronomic Research

[5] INSERM: National Institute of health and Medical Research

[6] The Library has a file of the four French veterinary school theses since 1924.

The library is open five days a week, from 9am to 6pm. It is closed three weeks in August.

There is a three permanent staff, which provides student support services, welcomes the readers and responds to documentation requests. It is composed of one librarian (full-time), one library technician (full-time), one technical assistant (part-time: 80%).

These three people help students and other users in information retrieval, update the on-line journals, develop the on-line educational materials, index the documents and pay a particular attention to thesis management.

Training

First year students receive a 4 hours lecture to discover how to use the library facilities. This is entitled "Methods of Scientific and technical Information", and explores the search for scientific literature, and the databases. It also gives elements about author rights and bibliographic rules.

8.2. Comments

The major issue for the library is to modernize its functioning. Even if it is a very wide library, it has suffered a lack of long term project. It is keeping a large number of paper documents which are no longer of interest for veterinary studies. Thesis exemplars are very numerous and taking a large part of the storage areas. Periodicals that are now on-line are still in the main part of the library and reduce the space available for the contemporary veterinary books.

8.3. Suggestions

A new librarian was appointed in September 2014. As a curator of the library, she is developing a new library project. The goal is to provide friendly consulting facilities to students and researchers, and to insure the quality of maintenance of documents, printed as well as digitized.

A new organization of the space is about to be proposed. Paper documents that are not in the scope of the library should either be destroyed or sold. A new thesis management will be developed, conducting to a reduced number of paper exemplars and the enhancement of digitized files. This will allow the reorganize the storage areas as well as the consulting rooms.

Chapter 9. Student admission and enrolment

9.1. Undergraduate courses

9.1.1. Undergraduate student numbers

Table 9.1: Undergraduate student breakdown in year prior to visit

Total number of undergraduate students	**614**
Total number of male students	**146**
Total number of female students	**468**
Foreign students	
- from EU countries	**14**
- from non-EU countries	**18**

9.1.2. Student admission

Enrolment into a French veterinary school (FVS) is possible after passing a competitive national entrance exam after two years of study after obtaining the Baccalaureate (high school diploma). The vast majority of students have obtained a baccalaureate in sciences (main topics: mathematics, biology, physics and chemistry, French and a foreign language). The entrance exam for FVS is national, open to all students with the necessary prerequisites, regardless of their social or geographical origin; in addition, the selection process is not regional nor specific for a FVS.

The entrance exam is organized by the Ministry of Agriculture. The admission of a student into one of the four FVS, is determined by his or her admission ranking and choice, as determined before the exam.

The school does not have its own admission committee. It takes part in the final examination juries (final determination whether students are accepted or not once all the tests are finished and grades are assigned) but not in the administration of the written or the oral selection exams.

Each year, a total of 548 students are recruited for the four VS: Alfort, Lyon, Nantes and Toulouse. The number of students admitted by competitive examination is set annually by the Ministry of Agriculture (117 students admitted per year per VS until 2013 and 137 since 2013). An applicant cannot apply more than 2 times, whatever the type of exam.

Five paths exist to enter one of the Veterinary Schools in France:

- Exam A (see www.concours-agro-veto.net) is open to students after two years in BCPST preparatory classes in a secondary school (plant, animal and cell biology, chemistry, physics, geology, computer science; a foreign language. See the BCPST program in appendix 9.1). Students who pass this competitive examination represent 80.34% of those admitted to a VS.
- Exam A TB (www.concours-agro-veto.net) is intended for students in «technology and biology» preparatory classes recruiting students with a Baccalaureate in technological Sciences and Laboratory Technology series (STL biochemistry or bioengineering specialty) or Science and Agricultural and Life Technology series (STAV). The program is the same as the exam A after adding biochemistry and biology techniques and geography. Students who pass this exam represent 1.71% of those admitted to the VS.
- Exam B is for university students enrolled in the 2nd year or 3rd year of a scientific bachelor program in fields related to life sciences. The exams cover animal, plant cellular and molecular biology, genetics, chemistry, mathematics and a foreign language. Students who pass this exam represent 9.40% of students admitted to a VS.
- Exam C is designed to recruit students holding the following university degrees: DUT specialty in Biological Engineering/Applied Biology; some BTS or BTSA. Students who pass this exam represent 7.69% of those admitted to a VS.
- Exam D is open to holders of the state doctor of medicine, doctor of pharmacy, doctor of dental surgery degree or a national diploma predominantly in biology conferring the level of master. In addition to the proof of eligibility based on an activity report and motivation, candidates are

selected after interview. Students who pass this exam represent 0.86% of those admitted to a VS.

Admission to a VS is the result of a long process of training and selection that can be described in several steps:

- The first step is the acquisition of general culture, scientific and biological knowledge enabling the student to successfully pass the Baccalaureate, most often in section the S (i.e., scientific, with tests emphasizing hard sciences and with a high grade).
- In the second step, the student can:
    - be admitted (S Baccalaureate most often with honours, i.e., a general average on exams of at least 14/20) in a preparatory BCPST class. For two years, the student gradually acquires the knowledge as well as the methods and skills needed to pass an entrance examination for one of the major schools of biology. This is the highly selective exam called A.
    - register (regardless of the baccalaureate section) in the first year of a bachelor in Biological Sciences (L1) and then pass the exam called B to enter a VS.
    - take a BTS, agricultural BTS or DUT program characterized by some options and pass the exam called C. Exams A, B and C take place in two steps: a written exam to select students who obtain a minimum overall average, and are so declared eligible. The eligible students then have to pass an oral exam to select the best, who will be admitted in a VS.

The D pass is for candidates (1 candidate per year and per school) who are initially selected based on their previous activities (CV and letter of motivation); after this test of eligibility, they may pass an interview in order to be admitted to a FVS.

The diversity of the entrance exams allows students from various socio-professional classes, including underprivileged classes, to take one of the selection exams. For each method of selection, in the event of failure, the student has the possibility of studying at another institution (an agricultural school, for example) or continuing his or her university studies for a master's degree.

Additional places are available to enrol if they come from foreign country which does not have its own veterinary school. This is called "admission sur titre" and take into account student's academic background. Candidates must possess a diploma justifying the successful completion of the first two years of university studies after the bachelor's degree. At the end of their studies, the students obtain a veterinary degree but they are not allowed to practice veterinary medicine in France. In order to practice veterinary medicine in France, candidates must be nationals of one of the states covered by the agreement on the European Economic Area. They must also pass an exam organized annually by the Ministry of Agriculture.

Table 9.2: Intake of veterinary students in the past five years

Year	**Number applying to admission ([1])**	**Number admitted**	
		Standard intake	**Other entry mode (describe)**
2014	2804	137	0
2013	2785	137	0
2012	2569	117	0
2011	2729	117	0
2010	2625	117	0

([1]) Total number of candidates for all the French Veterinary Schools

9.1.3. Student flow

Table 9.3: Student flow and total number of undergraduate veterinary students

Number of students present after admission in year 1		Number of additionally admitted students
A1	137	2
A2	115	3
A3	114	0
A4	119	1
A5	123	0
Number of undergraduate veterinary students	608	6

Table 9.4: Number of students graduating annually over the past five years

Year	Number graduating (DEFV)	Number graduating (with thesis)
2013-2014	120	130
2012-2013	117	101
2011-2012	115	123
2010-2011	115	55 (*)
2009-2010	107	142
Average	114.8	110.2

(*) due to the 5th year added in the curriculum

Table 9.5: Average duration of studies (distribution of students in years) (year 2013-2014)

Duration of attendance	Number
5 years	608
6 years	6
7 years	0
8 years	0
9 years	0
Average	5,01

9.2. Comments

Upon the entry into a veterinary school, a student masters the scientific basics of biological sciences, and has the general intellectual culture needed to assimilate knowledge and skills imparted during the veterinary program. The number of students admitted by competitive exam is set annually by the Ministry of Agriculture according to its own factors and criteria.

The adequacy of the facilities and teaching program to train the existing number of students is questionable because of the increase in the number of students imposed by the Ministry (+20 students each year per French veterinary school since 2013). Due to the overall facilities and the heavy caseload in Alfort, this has no noticeable impact on clinical training quality. But more generally, as no additional budget is given to the School to ensure the teaching of 17% more students per year, it should induce difficulties, even if the academic staff is mobilized in order to limit their effects.

9.3. Suggestions

Due to the *numerus clausus*, the average number of graduates arriving on the labour market each year remains low. Due to the recent increase in student enrolment, the number of graduates will increase by 80 at the national level. However, the effect of such an increase on the quality of teaching and employability has to be precisely evaluated by the Ministry together with the professional veterinary organisations and the veterinary Schools.

Chapter 10. Academic and support staff

10.1. Factual information

Table 10.1: Personnel in the establishment provided for veterinary training (30th June 2014)

	Budgeted posts (FTE)		Non-budgeted posts (FTE)		TOTAL (FTE)	
1. Academic staff	VS	NVS	VS	NVS	VS	NVS
Teaching and research staff (total FTE)	71	3	2		73	3
Others (AH-PH) (FTE)	3		43.6		46.6	
Total FTE	74	3	45,6		119.6	3
Total FTE (VS + NVS)	77		45.6		122.6	
2. Support staff						
a) responsible for the care and treatment of animals	9.5		24.4		33.9	
b) responsible for the preparation of practical and clinical teaching	2.6		5.2		7.8	
c) responsible for administration, general services, maintenance…	90.45		27.8		118.25	
d) engaged in research work	8.9		22.7		31.6	
e) others (please specify)	8.1		2.4		10.5	
Total support staff	119.55		82.5		202.05	
3. Total staff	196.55		128.1		324.65	

Table 10.2: Allocation of academic (veterinary surgeon and non veterinary surgeon) teaching staff – expressed as FTE – and support staff to various departments (30th june 2014)

Department name	**Academic teaching staff**								**Support staff**		
	Full prof (PR)		**Assistant prof (MC)**		**Assistant (AERC-AH)**		**Other (PCEA - PH)**		**Technical (b+d+e)**	**Animal carers (a)**	**Admin. (c)**
	VS	**NVS**	**VS**	**NVS**	**VS**	**NVS**	**VS**	**NVS**			
DEPEC	11		17				6.6				2.7
DPASP-CEDAF	9		9		3		2		0.7		3.4
DSBP	10		14	1			0.7	2	2.5		3.6
CHUVA-AC					34				1.6	17.7	22.35
CAPA							1		6.6	3.1	1.7
CIRALE					2				10.4	1	3
Research units									18.9	7	2.1
Technical platforms									13.7	8.3	1.4
General services											71.5

Ratios

See Annex 1.1.

Allocation modalities of human resources

As in all public institutions, the EnvA is subject to ceiling or maximum number of jobs imposed by the Ministry of Finances, reducing the possibility to recruit permanent staff and contractual employees. For the school, the job ceiling for permanent staff is set at 200.5 full-time equivalents (FTE). There is also a job ceiling for contractual employees, FTE, which is 111 FTE for 2015, calculated on the basis of the rules defined by the Ministry of Finances. The only agents currently exempt from these job ceilings are the contractual employees paid by research contracts.

The school is also limited in the selection of officials according to their job category (A, B or C) which determines the level of income, the missions and responsibilities.

Allocation of resources within the school

A multi-year (4 years) plan to recruit faculty members was established, taking into account: retirement forecasts, teaching needs and perspectives for internal promotions. This multi-year plan was discussed by the Academic council and presented to the Governing board.

For non-teaching staff, recruitment was decided by the Dean, based on the requirements expressed by unit managers and on the analysis by human resources office of the positions available,depending on the job ceiling. A management planning process of jobs and skills was initiated to determine target organizations for each component of the institution. This planning process will be discussed by the Technical Committee and validated by the Governing board.

Ease/difficulty in recruiting and retaining staff

In addition to the existence of job ceilings, there are mainly two types of difficulties encountered when recruiting staff:

- the low level of pay for officials, especially in the first step in their careers; this is particularly so for teachers and researchers, compared to the salaries offered in the private sector;
- the contractuel staff in technicians and employees jobs have very low pay levels, because their working time is limited to 70 %. The recent law for the future of agriculture, food industry and forest of 9 July 2014 raises this obstacle by allowing full-time recruitment of contractual staff.

These elements are particularly acute in the EnvA, because of the high cost of living in the Paris area.

Strong trends of development of skills over the past decade

The major trend that has emerged in recent years is specialization. The recruitment of specialists, diplomats from European colleges, has become a priority for veterinary academic staff, especially clinicians. The number of specialists has increased greatly over recent years, reaching 40.

Non-teaching staff are encouraged to conduct on-going training sessions within their respective spheres of competence and in more general areas such as: new tools, health and safety, *etc*.

Additional staff related to services

The activity level of service providers such as the CHUVA helps to finance additional positions to take into account the increase of activity. Nevertheless, the growth in activity is limited by job ceilings.

Regulations for work performed by staff outside the school

The law N° 83-634 of 7th July 1983 stipulates that officials and full-time contractual employees must devote the entirety of their occupational activities to the public sector. The Decree 2007-658 of 2 May 2007 permits certain derogations to this principle and gives conditional authorizations.

Opportunities to participate in scientific congresses or to take sabbaticals

The staff, mainly lecturers, who are interested in participating in scientific congresses, submit a request to go to the congress for signature by the Dean. In all cases, it is the employees who communicate their wishes. The travelling expenses are paid using the EnvA's funds.

10.2. Comments

During recent years, various achievements can be highlighted:

- the creation of a human resources management department;
- the establishment of a procedure to welcome newcomers;
- the rise of the use of professional interviews;
- the development of a manager charter and management training;
- the creation of a "real" service marking the will to develop a site management policy over the long term and delivered by experts.

10.3. Suggestions

Human resources management still has to be improved in different ways:

- Better definition of the tasks of each entity and their organization, and support for the provisional management of jobs and skills;
- Generalizing job description forms and job interviews;
- Establish a mission statement for each manager and identifying his/her responsibilities and objectives;
- Refresh the manager charter; strengthen the support and training of managers;
- As soon as possible, allocate more funding for professional development.

Chapter 11. Continuing education

11.1. Factual information

The EnvA has a long tradition of continuing education. The courses provided by teachers to fellow practitioners or public and private sector employees are mostly organized directly by the School itself. An office for continuing education was created on 1st September 1996 and is directed by a teacher. This office comprises of four agents, an agent for the administration of "diploma" formations, an agent for the administrative management of "qualifying" training, an agent for the management of finance, communication and governance and an agent for the management of contracts and vacations logistics (ordering tickets, hotels, meals, booking rooms, *etc.*). Each training organizer, who is a teacher from the school, is specifically in charge of monitoring teaching and scientific training, as well as stakeholder relations.

A Moodle training and e-learning platform, different from EVE and called AlForPro, has been launched in 2013.

In 2013, a partnership with the CloserStill Media Company was signed and Alfort became the educational and scientific partner of the 2 day FranceVet congress, held in Paris in, on the same basis as that of the London Vet Show, which is partnered by the Royal Veterinary College of London. The 3rd session will take place in June 2015.

Table 11.1: Skills training organized during the year 2012/2013

Title of the training	Number of participants	Total hours
Carnivore digestive surgery	42	8 h
Laparoscopic surgery	7	8 h
Orthopaedic surgery	12	8 h
Endurance of horses	13	8h
Introduction to the practice of anesthesia	5	16 h
Measurement of blood pressure	19	8 h
Echocardiography practice for companion animals – first level	30	8 h
Echocardiography practice for companion animals – level 2	14	8 h
Dermatology daily	11	35 h
Pain management by regional anesthesia	13	8 h
Physiotherapy - first level	16	24 h
Physiotherapy for veterinary assistant	5	35 h
Distance education in epidemiology	9	24 h
Trichinellosis	29	16 h
Autopsy of cattle	13	8 h
Behavioral medicine	35	4 h
Training for members of ethics committee	25	16 h
Clinical examination of the lame horse (*)	37	16 h

Title of the training	Number of participants	Total hours
Ultrasonic diagnosis: distal limbs to the suspensory ligament (*)	36	16 h
Ultrasonic diagnosis: proximal limbs and spine (*)	34	16 h

(*) program organized in CIRALE

Table 11.2 : Degree programs organized during the year 2012/2013

Title of the training	Number of participants	Total hours
Training in animal experimentation	81	80 h
Clinical examination of the lame horse (*)	37	16 h
Ultrasonic diagnosis: distal limbs to the suspensory ligament (*)	36	16 h
Ultrasonic diagnosis: proximal limbs and spine (*)	34	16 h
CEAV Medicine of behaviour of companion animals	19	280 h
CEAV Internal medicine (Practitioners)	40	280 h
CEAV Internal medicine (Assistants)	8	280 h
CEAV Internal medicine (module for an auditor)	7	20 h
CES/ MASTER Epidemiology	14	390 h
DE Avian pathology	17	140 h
DE Medicine, nutrition, physiotherapy and micro-nutrition	16	120 h
DE Ophthalmology	24	120 h
DE Man-dog relationship	23	120 h
DIE veterinary medicine for disasters and environment	15	40 h

11.2. Comments

Quality of training:

Each training session is assessed through a questionnaire given to each participant at the end of it. The information collected is then passed on the lecturer who organised the training session so that he/she can adjust the programme. Overall satisfaction is high.

Veterinary involvement in training programs:

In the EnvA, 99% the training is provided for veterinarian practitioners or employees in the public and private sectors, or graduates.

Participation of faculty to other training programs:

Most teachers at the EnvA also take part in continuing education provided in other veterinary or non-veterinarians institutions, or in training organized by various professional organizations. These activities are taken into account when writing activity reports which are required when applying for a promotion.

11.3. Suggestions

Different ways of improvement and development of continuing education are identified:

- Enhancing the training offer in all areas of the school's competence, relying on a consolidated business model;
- Developing better marketing of the label "Alfort;
- Extend the training offer for specialized veterinary assistants (ASV) and non-veterinarians (farmers, technicians, researchers);
- Establish training support contracts for continuing education, in connection with professional organizations;
- Further development of the continuing education eLearning platform AlforPro.

Chapter 12. Postgraduate education

12.1. Factual information

12.1.1 Clinical speciality training (interns and residents)

Table 12.1 : Clinical speciality training (2013-2014)

Clinical discipline	Nbr interns	Residents	
		No	Diploma or title
Interns			
Farm animals	3		
Companion animals	20		
Equine	8		
Residents			
Anaesthesia		1	ECVAA
Reproduction		1	ECAR
Surgery		1	ECVS
Dermatology		1	ECVD
Ophthalmology		1	ECVO
Bovine clinic		1	ECBHM
Pathology		1	ECVP
Clinical pathology		1	ECVCP
Neurology		1	ECVN
Exotic medicine		1	ECZM

In France, the veterinary specialization includes two categories:

- a national category, implying the 4 French Veterinary Schools: it is the DESV system (specialized veterinary diplomas in veterinary sciences, with 3-year programs co-organized by National Organizing Committees, ending by specific exams and a French national Diploma.
- The European category, with the residency programs of the European Colleges

Currently, in the School, 40 clinicians are diplomates of National, American or European Veterinary Specialisation (see appendix 7.1)

7 students are currently enrolled in the DESV of veterinary pathology program; they are also registrated as residents by the European College of Veterinarian pathologists

Five new residency programs have been approved by the corresponding European colleges and were recently opened: anaesthesia, zoological medicine, ophthalmology (joined with a DESV) and two in cardiology.

We expect the opening of new residency programs in internal medicine and diagnostic imaging in the near future. Equine medicine started in December 2014. Concerning the CIRALE, two residents are enrolled in order to prepare a DESV in equine orthopaedic management.

Residents are paid through employment contracts, by the School budget or private contracts with pharmaceutical companies.

12.1.2 Research education programmes

Table 12.2 : Number of research students enrolled in different programmes

Type of degree	Full time	Part time	Duration
Ph.D.	20		3 years

12.2. Comments

Alfort has currently a high number of European specialists, which is an enormous advantage when implementing clinical education.

12.3. Suggestions

We need now to develop the recruitment of residents, in every domain where there are European specialists. A residency charter, to define and harmonise all residency programs has just been written and will be applied starting from next September.

Chapter 13. Research

According to the "*one world-one health initiative*", the EnvA is conducting research several fields of veterinary sciences, including animal and human public health. To achieve this goal, it supervises 8 major joint research units with a total of 131 permanent scientists, in collaboration with other institutions. This represents 47% (≈62 persons) of its permanent staff. Other scientists are hired by the co-supervising institutions, including the French research Institutes (INRA [7], INSERM [8], CNRS [9]), the national regulatory agency for food, environmental and occupational health and safety (ANSES [10]) and Colleges of Human Medicine (UPEC [11] and Université Paris-Diderot). The participation of the EnvA in these Units is recognized by the national Agency in charge of the evaluation of research and educational systems in France (HCERES). It offers a unique opportunity for collaboration between scientists from different topics including veterinarians, agronomists, basic scientists, pharmacists and medical doctors.

13.1. Factual information

Strategic direction of research

The research themes which are developed at the EnvA focus on two main axes involving the majority of human resources. The first research axis is centered on animal infectious and zoonotic diseases and includes the following 4 research units:

- Virology (13 permanent researchers)
- Parasitology ("Molecular biology and immunology of parasitic diseases", 15 permanent researchers)
- Epidemiology of animal diseases (3 permanent researchers)
- Mycology ("Dynamics of colonisation and infection by Aspergillus fumigatus in the respiratory tract in humans and animals", 5 permanent researchers)

The second research axis focuses on muscular, locomotor and reproduction biology and medicine and includes the 4 following research units:

- Equine locomotor pathology and biomecanics (6 permanent researchers)
- Bioengineering and Bio-imaging of osteo-articular tissues (15 permanent researchers)
- Developmental and reproduction biology (25 permanent researchers)
- Two teams from the Mondor Institute of Biomedical research (the Inserm and UPEC research centre):
    - Biology of the neuromuscular system (31 permanent researchers)
    - Pharmacological strategies and experimental therapeutics for myocardial ischemia and heart failure, 18 permanent researchers)

Beyond the research activities described in the above units, the EnvA is also supports research on other specific topics through collaboration with external laboratories (e.g., for food safety, animal behavior, etc). These aspects of research result from the fact that some faculty members cannot find an EnvA laboratory in which to do his/her research. This represents only a small proportion of the EnvA's research activity (6-8 Professors or Associate Professors). In addition to the research units working to basic and translational sciences, the EnvA also supports its own research community and national and international partners through the following facilities:

- A unique Hospital (CHUVA), with an innovative institute devoted to clinical research
- A biomedical research centre (CRBM)
- A clinical biology and pathology laboratory
- An immunology and molecular biology platform

Thanks to the research units and facilities, the EnvA publishes more than 80-90 publications per year in established life science journals (all IF>0.5; peer-reviewed journals). This represents more than one research article per year per permanent member of staff (62 faculty members with significant research activity). The median impact factor typically averages 2.5, which corresponds

7 Institut National de la Recherche Agronomique (http://www.inra.fr/)
8 Institut national de la santé et de la recherche médicale (http://www.inserm.fr/)
9 Centre national de la recherche scientifique (http://www.cnrs.fr/)
10 Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (https://www.anses.fr/fr)
11 Université Paris-Est Créteil (http://www.u-pec.fr/)

to the top-ranking for veterinary journals. Many additional articles are also published in French national veterinary journals and/or books for educational purposes.

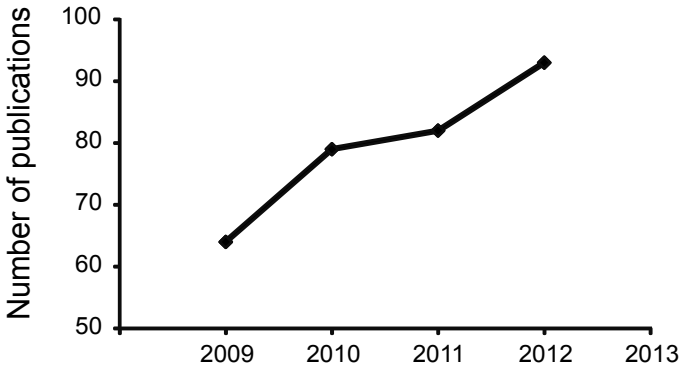


Figure 13.1. Number of publications by EnvA faculty over the last years

Importance of the links between research and learning

All veterinary students can participate in the EnvA's research activities. A special curriculum has been introduced in the learning units which include 1 or 2 conferences from a researcher in order to illustrate the research applications in a theoretical domain. It represents approximately 10-15 h per semester. The "research curriculum" also aims to provide information on the post-graduate programs which can be followed by students.

Currently, approximately 8-10% of our recently graduated students pursue post-graduate studies for a research purpose (Master). These Master students can study within the EnvA's laboratories or in external laboratories. In most cases, the students go on to pursue their studies by a doctoral track. The latter fellowship is supervised by CoMUE University Paris Est.

Approximately 8 PhD theses are presented each year under the supervision of an EnvA's academic staff member.

Therefore, post-graduate students therefore represent a pool of 20-25 PhD fellows and 8-10 Master students under the supervision of the EnvA's academic staff member.

13.2. Comments

The current strengths are identified:

- Eight mixed research units with strategic EnvA partners,
- Strong involvement of the scientific community,
- A strong partnership anchor (UPEC, HANDLES, INRA, INSERM, CNRS, Institut Pasteur), especially in the COMUE and STVE Pole.
- Structures supporting research (Biomedical Research Centre, BioPôle Alfort, Research Institute of Animal Clinics IdfInnov SATT)
- Quality scientific production, in 2012 and 2013, respectively:
    - 82 and 93 rank A publications from the 62 and 61 EnvA's academic staff members and research engineers (PRB indicators)
    - Average impact factors, respectively, 2.37 [1.75 to 3.69] and 2.57 [1.72 to 3.73] (PRB indicators)

13.3. Suggestions

Different ways of improvement are identified:

- Strengthen scientific communication on the activities occurring on the site,
- Strengthen and diversify interdisciplinary interactions and promote the widespread involvement of faculty members, including clinicians, in research units,
- Increase the number of doctoral students,
- Facilitate the development of device monitoring and research agreements signatures.

Appendix 1. Ratios

Table 10.3: Ratios students/staff

		Denominator
R 1 total nbr academic FTE in training / nbr of undergraduate veterinary students	122.6 / 614 = 1 / 5	5
R 2 total nbr of FTE in the faculty / nbr of undergraduate students at faculty	122.6 / 634 = 1 / 5.4	5.17
R 3 total nbr of VS in veterinary training / nbr of undergraduate veterinary students	119.6 / 614 = 1 / 5.13	5.13
R 4 no total VS FTE in veterinary training / no students graduating annualy	119.6 / 114.8 = 1 / 0.96	0.96
R 5 total nbr of FTE academic staff in veterinary training / total nbr of FTE support staff in veterinary training	122.6 / 202.05	1.65

Table 4.6a: Ratios

			Denominator
R6	Theoretical training (A+B+C) / Supervised practical training (D+E+F)		
Core curriculum + Clinics for farm animals (CFA) (not counting placement) (*)	3735.75 / 2171.3	1 / 0.58	0.58
Core curriculum + Clinics for small animals (CSA)	3799.5 / 2999.3	1 / 0.79	0.79
Core curriculum + Clinics for horses (CFH) (not including placement) (*)	3814 / 2785.3	1 / 0.73	0.73
R7	Clinical work (F) / Laboratory and desk-based work + non-clinical animal work (D+E)		
Core curriculum + CFA	1152.5 / 1018.8	1 / 0.88	0.88
Core curriculum + CSA	1963.5 / 1035.8	1 / 0.52	0.52
Core curriculum + CFH	1769.5 / 1015.8	1 / 0.57	0.57
R8	Self-directed learning (C) / teaching load (A+B+C+D+E+F+G)		
Core curriculum + CFA	2418.75 / 7945.15	1 / 3.28	3.28
Core curriculum + CSA	2573 / 8430.9	1 / 3.27	3.27
Core curriculum + CFE	2490 / 8406.4	1 / 3.37	3.37

(*) for clinical sciences in farm animals: clinical placement 420 h; for clinical sciences in horses: clinical placement 175 h.

Table 4.6b: Ratios (cont.)

			Denominator
R9	Total nbr of curriculum hours Food Hygiene – Public Health / Total nbr. of hours vet. curriculum		
Core curriculum including the 2nd year placement (*)	283.5 / 6253.9	1 / 22.0	22.0
Core curriculum + dominant VPH (**)	(283.5+1780) / (6253.9+1780)	1 / 3.89	3.89
R10	Total nbr of curriculum hours Food Hygiene – Public Health / Hours of compulsory extramural work in veterinary inspection		
Core curriculum including the 2nd year placement (***)	283.5 / 43	1 / 0.15	0.15

(*) in the calculation of this ratio, the placement in a "slaughterhouse" in the 2nd year (1 week = 35 h) and the write-up of a report about this placement (estimated as an average of 16 h) were taken into account.
(**) in the situation where the student chooses to follow the ISPV training at the ENSV, the student receives 360 h of teaching in VPH, 300 h of teaching in political science in the domain of feeding and the management of health risks, a 4-mois placement (595 h) and a 3.5-mois placement (525 h). This provides a total of 1780 h of training in Food hygiene / Public health, of which there are 1120 h of extramural placements.
(***) in the calculation, the denominator includes the length of the slaughterhouse placement (35 h), plus the session at the Migennes slaughterhouse undertaken while at the CAPA, in the 2nd semester of the 2nd year during the LU "Meat and meat products" (3 h).

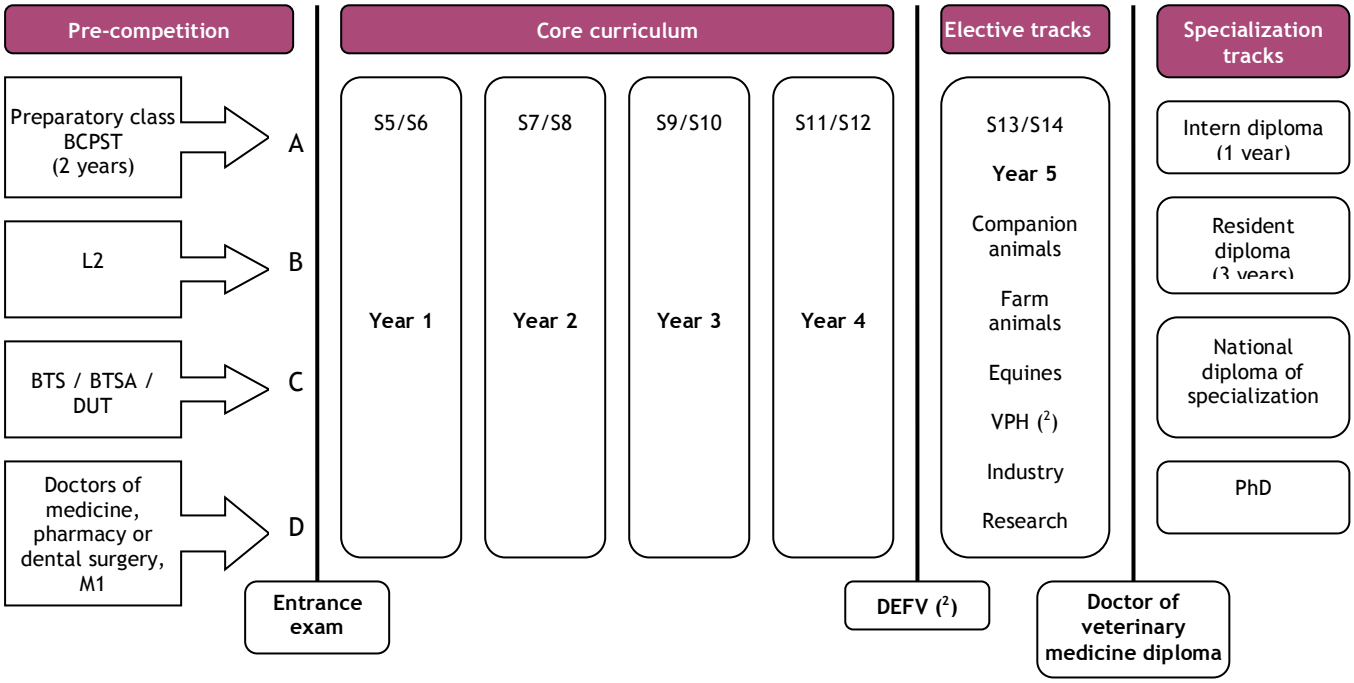
Table 7.5: Animals available for clinical training as ratio to the number of students in last full year of clinical training

	All graduating students	Denominator
R11 nbr of students graduating annually / nbr of food-producing animals seen on the Faculty	114.8 / 445 = 1 / 3.87	3.87
R12 nbr of students graduating annually / nbr of individual food-animals consultation outside the Faculty	114.8 / 1955 = 1 / 17.03	17.03
R13 nbr of students graduating annually / nbr of herd health visits	114.8 / 42 = 1 / 0.36	0.36
R14 nbr of students graduating annually / nbr of equine cases	114.8 / 1368 = 1 / 11.9	11.9
R15 nbr of students graduating annually / nbr of food-poultry/rabbit cases	114.8 / 914 = 1 / 7.96	7.96
R16 nbr of students graduating annually / nbr of companion animals seen in the Faculty	114.8 / 32 888 = 1 / 286.5	286.5
R17 nbr of students graduating annually / Poultry (flocks) and rabbits (production units) seen	114.8 /10 = 1 / 0.09	0.09
R18 nbr of students graduating annually / nbr of necropsies food producing animals + equine	114.8 / 510 = 1 / 4.44	4.44
R19 nbr of students graduating annually / nbr of autopsies of poultry-rabbits	114.8 / 71 = 1 / 0.62	0.62
R20 nbr of students graduating annually / nbr of autopsies of companion animals	114.8 / 291 = 1 / 2.53	2.53

Appendix 2.1. Governing board

President: Hervé GOMICHON	Carrefour SA
Vice-President: Denis AVIGNON	National Council of Veterinary Statutory Body
Representative members	
Mireille RIOU-CANALS	Ministry of agriculture, DGER
Patrick DEHAUMONT	Ministry of agriculture, DGAl
Thierry LELEU	Prefect
Anne-Marie VANELLE	Ministry of agriculture, CGAAER
Béatrice GILLE	Rector of the Academy
Laurence COHEN	Ile de France Région
Liliane PIERRE	Val de Marne Department
Michel HERBILLON	Maisons-Alfort Community
Nominated members	
Hervé GOMICHON	Carrefour SA
Denis AVIGNON	National Council of Veterinary Statutory Body
Marc MORTUREUX	French Agency for Food safety
Muriel MAMBRINI-DOUDET	President of INRA research center of Jouy
Alain BERBEAUX	INSERM
Pierre BUISSON	Union of veterinary practicioners
Alain DEHOVE	World organization for animal health
Isabelle DIEUZY-LABBEY	Zoetis company – Alumni
Olivier FOURCADET	Professor – ESSEC
Yves GRANDMONTAGNE	Microsoft France
Elective members (staff)	
Dominique GRANDJEAN	Professor
Yves MILLEMANN	Professor
Henri-Jean BOULOUIS	Professor
Jacques GUILLOT	Professor
Brunon POLACK	Associate professor
Aude GIRAUDET	Associate professor
Loïc DESQUILBET	Associate professor
Nathalie CORDONNIER	Associate professor
Hélène BACQUE	Support staff
Hélène HUET	Support staff
Thomas LILIN	Support staff
Martine MONTEIL	Support staff
Delphine MAQUET	Support staff
Elective members (students)	
Hélène FROMENT	A1
Céline BROQUIN-LACOMBE	A2
Lucie FROSSARD	A3
Djérène MASO	A4
Clotilde HODENCQ	A5

Appendix 4.1. Veterinary curriculum



(1) Diploma of veterinary fundamental studies

(2) Veterinary Public Health

Appendix 4.2. Decree of April 20, 2007 relative to veterinary studies

May 10, 2007

OFFICIAL JOURNAL OF THE FRENCH REPUBLIC

Text 70 of 228

Decrees, circulars

GENERAL TEXTS

MINISTRY OF AGRICULTURE AND FISHERIES

Decree of April 20, 2007 relating to veterinary studies

NOR: AGRE0752673A

The Minister of National Education, Higher Education and Research and the Minister of Agriculture and Fisheries,

Considering Directive 2005/36/EC of the European Parliament and of the Council of September 7, 2005 relative to the recognition of professional qualifications;

Considering the Rural Code, Book II and Book VIII;

Considering Decree No. 2002-482 of April 8, 2002, as amended with application to the French higher education system in the construction of the European higher education system;

Considering Decree No. 2006-1334 of November 3, 2006 relative to the organization and functioning of the Agency for the Evaluation of Research and Higher Education;

Considering order of June 13, 2003 setting out the rules for competitions giving access to veterinary schools;

Considering the opinion of the National Council for Higher Education and Agricultural, Agrifood and Veterinary Research dated March 13, 2007;

Considering the opinion of the National Council for Higher Education and Research dated March 19, 2007

Do decree as follows:

Art. 1.- Veterinary studies are intended to provide the theoretical, clinical and practical training required by the professional practice described in the professional standards (1).

The curriculum shall include the materials specified in Directive 2005/36/EC of September 7, 2005 referred to above.

Veterinary studies are organized in the framework of Decree No. 2002-482 of April 8, 2002 and according to the provisions of the present Order.

SECTION I

GENERAL ORGANIZATION OF STUDIES

Art.2. - Five years of training are provided within national veterinary schools or under their direct control, after the candidate has passed one of the competitions referred to in Article 1 of the

Decree of June 13, 2003 referred to above. Admission by competition to a national veterinary school is accompanied by the awarding by the institution of 120 European credits for general scientific training completed.

The five years of training in the national veterinary schools include:

- eight semesters of core courses. The instruction in the seventh and eighth semesters, mainly clinical and practical, is devoted equally to production animals and veterinary public health, on the one hand, and pets and horses, on the other hand. For students considering a professional career in research, the last two semesters may be replaced by registration in, and passing the final two semesters of a national master's degree;

- two semesters of advanced courses in one or more of the professional fields mentioned in Article 4 of this Order. For clinical fields, the equivalent of one of these semesters is devoted to the preparation of the veterinarian doctoral thesis.

Art. 3. - During each semester, the training is organized in teaching units. The number of hours of lecture courses must not exceed the hours of practical, clinical and directed instruction. Time sent on clinical training must represent at least thirty percent of the training for the entire first eight semesters.

Art. 4. - The schools organize advanced training in the following professional areas: production animals, pets, equines veterinary public health, research and industry.

Art. 5. - The Board of Directors of each school establishes the organization of training, which includes theoretical lessons, tutorials, practical training, supervised personal work, an introduction o research as well as clinical training and supervised practice trainings. The training provided must enable the student to acquire the skills, knowledge, expertise and competency described in the diploma requirements.

Art. 6. - The basic veterinary degree is awarded to students who have passed the eight semesters of core courses.

Only holders of the basic veterinary degree can access the advanced year, and once this is passed the candidate may defend a veterinary doctoral thesis.

Art. 7. - The organization of veterinary training shall be subject to periodic national evaluation by the Agency for Evaluation of Research and Higher Education, which takes into account the requirements defined in the national and European standards.

Following this assessment, and upon opinion from the National Council of Higher Education and Agricultural, Agrifood and Veterinary Research (CNESERAAV) and the National Council for Higher Education and Research (CNESER), habilitations are given to issue the basic veterinary degree, conferring the rank of master.

The above habilitations are given by a joint order of the ministers of agriculture and higher education.

Art. 8. - The state doctor of veterinary medicine degree is awarded to students after defence of a thesis under the terms of Articles R. 241-1 to R. 241-4 of the Rural Code.

The number of students registered to prepare a veterinary doctoral thesis is limited to two, while the second registration cannot be made once permission to print the thesis has been received.

SECTION II

PLAN OF STUDIES

Art. 9. - Attendance at classes and supervised practice trainings is mandatory.

The terms of attendance at classes, supervised practice trainings and personal work by students, methods of testing their knowledge, completing educational units and obtaining credits as well as the conditions for advancing a year of study are defined by each school in its course regulations. Each year can be repeated only once.

The course regulations of each school are made known to all parties affected at the beginning of each academic year.

Art.10 - During the first six semesters, an internship can be completed in a research structure, especially for students who intend to pursue research.

Art. 11. - Training for part of the ten semesters mentioned in Article 2 is done in a foreign country, either as an internship or at an institution of veterinary education, for a maximum of two semesters.

SECTION III

COOPERATION AGREEMENTS

Art. 12. - The partnership established with universities for the awarding of the state doctor of veterinary medicine degree may be extended by a scientific and educational cooperation agreement for the application of certain provisions of this Order.

Such cooperation may concern in particular the organization of specific courses in the veterinary curriculum and the development of research and doctoral training, or implementation of instruction preparing the student for the national master's degree through a partnership.

These agreements may also be concluded with other universities as well as with institutions of higher agricultural education. They may also be implemented in connection with research and higher education consortia contemplated in article L. 344-1 of the code of research.

SECTION IV

TRANSITIONAL AND FINAL PROVISIONS

Art. 13. - The order of April 12, 2005 relating to veterinary studies is repealed. However, its provisions remain in force for students who, at the date this Order was published, are in their second year of national veterinary school, and until they have completed their training.

These students may continue their education for an additional year.

In case of repetition, they shall continue their studies according to the conditions set by this Order.

Art. 14. - The Director General of Higher Education at the Ministry of National Education, Higher Education and Research and the Director General of Education and Research at the Ministry of Agriculture and Fisheries are responsible, each in his own sphere of responsibility, for applying this Order, which will be published in the Official Journal of the French Republic.

Issued at Paris, April 20, 2007.

The Minister of Agriculture and Fisheries, on behalf of the Minister and on his authority:

The Director-General of Education and Research,

J.-L. BUËR

The Minister of National Education, Higher Education

and Research, on behalf of the Minister and on his authority:

The Director General of Higher Education,

B. SAINT-GIRONS

(1) The appendices can be consulted at the office of higher education, Directorate for Education and Research, 1ter Lowendal Avenue, 75700 Paris 07 SP, and at the veterinary schools of

Alfort, Lyon, Nantes and Toulouse.

Appendix 4.3. Breakdown of students in the different 5th year tracks

	2010-11	2011-12	2012-13	2013-14	2014-15
Clinical sciences in farm animals	21	24	21	15	30
Clinical sciences in companion animals	55	78	71	79	72
Clinical sciences in horses	23	14	18	20	10
Clinical sciences in companion animals and farm animals	6	13	8	(*)	(*)
Research	8	8	8	5	11
Industry / business	1	1	2	0	0
International mobility	2	1	0	0	0
International mobility: Saint Hyacinthe	2	2	2	4	0
VPH	1	1	1	0	2
Year out	0	1	0	**0**	**0**
	119	**143**	**131**	123	125

(*) This track was discontinued after 2013-2014

***Nota bene**: the numbers indicated take into account the inter-French Veterinary School mobility of students in the 5th year. At Alfort, the ratio "incoming mobility" / "outgoing mobility" is often greater than 1. This explains, for example, the high values in 2011-2012 and 2012-2013.*

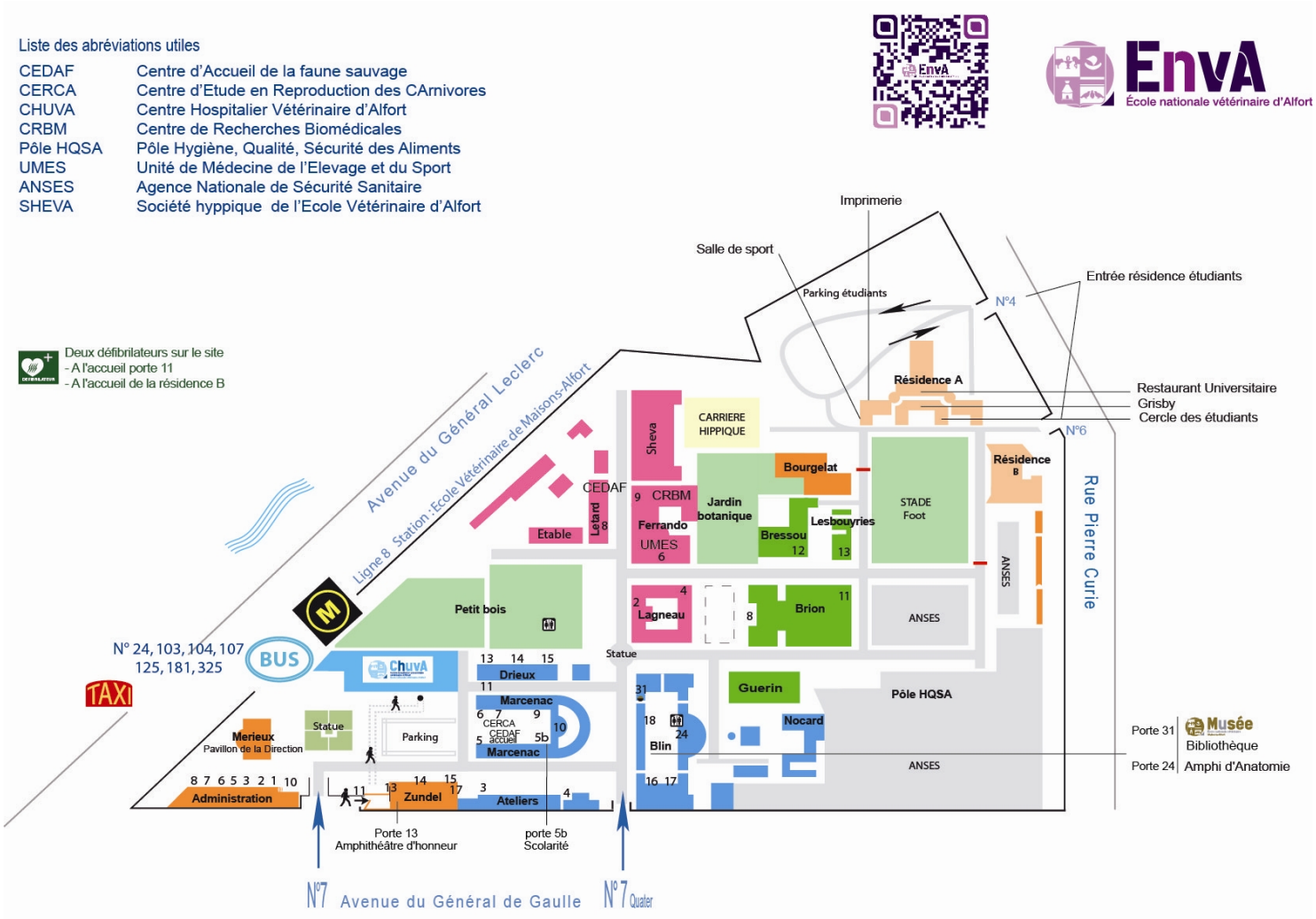
Appendix 4.4. Rotation schedule in 4th year (companion animals hospital)

		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Anesthesia	AM	Anesthesia	Anesthesia	Anesthesia	Anesthesia	Anesthesia		
	PM	Anesthesia	Anesthesia	Anesthesia	Sport	Anesthesia		
Surgery	AM	consultation	consultation	consultation	consultation	consultation		
	PM	consultation	consultation	training	Sport	training		
Surgery	AM	Sterilization cat	Sterilization cat	Sterilization exotic animals	Sterilization cat	Sterilization cat		
	PM	General surgery	General surgery	Sterilization exotic animals	sport	training		
Surgery	AM	General surgery	General surgery	General surgery	General surgery	General surgery		
	PM	General surgery	General surgery	General surgery	sport	General surgery		
Surgery	AM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
	PM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
Emergencies	AM	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies
	PM	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies
Medicine	AM	Neurology	Dermatology	General medicine	Dermatology	Dermatology		
	PM	Neurology	Cardiology	General medicine	sport	Journal club dermatology		
Medicine	AM	Reproduction	Dermatology	Sterilization dog	Dermatology	Dermatology		
	PM	Reproduction	Vaccinology	Vaccinology	sport	Journal club dermatology		
Medicine	AM	General medicine	General medicine	General medicine	General medicine	General medicine		
	PM	General medicine	General medicine	General medicine	sport			
Medicine	AM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
	PM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
Medicine	AM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
	PM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
Reception desk/ Pharmacy	AM	Reception desk	Pharmacy	Reception desk	Pharmacy	Reception desk		
	PM	Reception desk	Pharmacy	Reception desk	sport	Reception desk		
Intensive care	AM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
	PM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
Diagnostic imaging	AM	Radiology	Radiology	Radiology	Radiology	Radiology		
	PM	Radiology	Radiology	Radiology	sport	training		
Medicine	AM	Exotic animals	Ophthalmology	Reeducation	Nutrition			
	PM	Exotic animals	Ophthalmology	Reeducation	sport			

Appendix 4.5. Rotation schedule in 5th year (companion animal track)

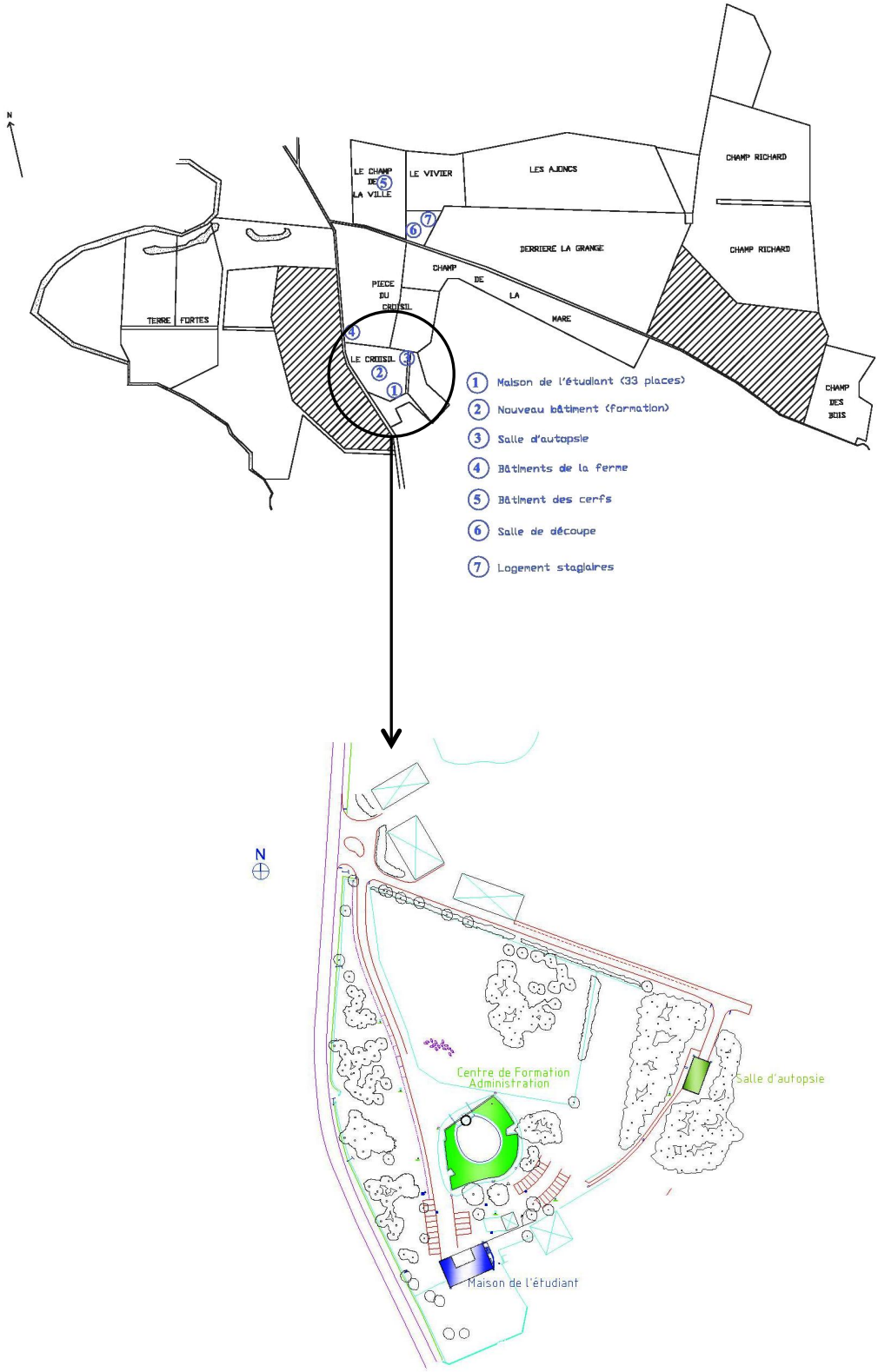
		Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Anesthesia	AM	Anesthesia	Anesthesia	Anesthesia	Anesthesia	Anesthesia		
	PM	Anesthesia	Anesthesia	Anesthesia	Anesthesia	Anesthesia		
Surgery week 1	AM	consultation	consultation	consultation	consultation	consultation		
	PM	consultation	Consultation-orthopedics	consultation	Consultation-neurosurgery			
Surgery week 2	AM	General surgery	General surgery	General surgery	General surgery	General surgery		
	PM	General surgery	General surgery	General surgery	General surgery			
Surgery weeks 3&4	AM	Sterilization cat	Sterilization cat	consultation	Sterilization cat	Sterilization cat		
	PM	General surgery	General surgery	consultation	General surgery	General surgery		
Surgery Weeks 5&6	AM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
	PM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
Emergencies	AM	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies
	PM	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies	Emergencies
Medicine Weeks 1&2	AM	Dermatology	Reeducation	Dermatology	Nutrition	Dermatology		
	PM	Reeducation	Dermatology	Gastroenterology	Genetic (PT)	Journal club dermatology		
Medicine Weeks 3&4	AM	Cardiology	Cardiology	Neurology	Behavior	Ophthalmology		
	PM	Nutrition	Cardiology	Ophthalmology	Behavior	JPT Reproduction/ Ophthalmology		
Medicine Week 5	AM	Exotic animals	Exotic animals	Exotic animals	Exotic animals	Exotic animals	Exotic animals	Exotic animals
	PM	Exotic animals	Exotic animals	Exotic animals	Exotic animals	Exotic animals	Exotic animals	Exotic animals
Medicine Week 6	AM	Surgery Reproduction	Vaccinology	Surgery Reproduction	Reproduction	Reproduction		
	PM	Reproduction	Reproduction	Surgery Reproduction	Reproduction	Reproduction		
Medicine Weeks 7&8	AM	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization
	PM	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization	Neurology Consultation & Hospitalization
Medicine 9&10	AM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization *	Hospitalization
	PM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
Medicine 11&12	AM	Internal medicine	Internal medicine	Internal medicine	Internal medicine	Internal medicine		
	PM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	PT medicine		
Intensive care	AM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
	PM	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization	Hospitalization
Diagnostic imaging	AM	Ultrasonography	Ultrasonography	Ultrasonography	Ultrasonography	Ultrasonography		
	PM	Ultrasonography	Ultrasonography	Ultrasonography	Ultrasonography	Ultrasonography		

Appendix 6.1. Alfort Site map



Appendix 6.2. CIRALE Map (Goustranville site)

Appendix 6.3. Farm animal Champignelles Centre (CAPA) map



Appendix 7.1. European, American and French specialists in EnvA

Type of specialist	Discipline	Name	College
European/American	Pathology	Jean-Jacques Fontaine Edouard Reyes- Gomez Eve Laloy	ECVP ECVP ECVP
	Anaesthesia	Luca Zilberstein Barbara Steblaj	ECVAA ECVAA
	Cardiology	Valérie Chetboul Vassiliki Gkouni	ECVIM-cardiology ECVIM-cardiology
	Surgery	Pierre Moissonnier Bérangère Ravary	ECVS ECBHM
	Dermatology	Geneviève Marignac Noëlle Cochet Faivre	ECVD ECVD
	Equine	Céline Mespoulhès Dagmar Trachsel Aude Giraudet Jean-Marie Denoix Jean-Marie Denoix Fabrice Audigié	ECVS ECEIM ECEIM LA EVCDI ACVSMR LA EVCDI
	Medical imaging	Pascaline Pey	ECVDI
	Contagious diseases	Barbara Dufour	ECVPH
	Internal medicine	Ghita Benchekroun Miguel Campos	ECVIM-CA ECVIM-CA
	Zoological medicine	Charly Pignon	ECZM-small mammals
	Neurology	Stéphane Blot	ECVN
	Nutrition	Bernard Paragon Laurence Colliard	ECVCN ECVCN
	Ophthalmology	Sabine Chahory	ECVO
	Parasitology	Jacques Guillot René Chermette	EVPC EVPC
	Clinical pathology	Christine Médaille	ECVCP
	Farm animals	Karim Adjou Yves Millemann Guillaume Belbis	ECSRHM ECBHM ECBHM
	Pharmacology - Toxicology	Brigitte Enriquez Marc Gogny	ECVPT ECVPT
	Reproduction	Alain Fontbonne Cindy Maenhoudt Cindy Maenhoudt	ECAR ECAR ACT
French	Internal Medicine	Valérie Freiche	
	Cardiology	Emilie Tréhiou	
	Equine biomechanics and locomotor diseases	Lelia Bertoni Virginie Coudry Sandrine Jacquet	
	Total	**40**	

Appendix 9.1. BCPST program

Per week over 30 weeks

1st year				
Discipline	**Lecture**	**TD**	**TP**	**Total**
Math	5	3	-	8
Physics	2.5	0.5	1	4
Chemistry	1.5	0.5	1	3
Computer sci	0.5	-	1	1.5
Biology and geology	5	-	3	8
TIPE	-	0.5	0.5	1
French and philosophy	2	-	-	2
LL1	2	-	-	2
EPS	2	-	-	2
LL2 (optional)	(2)	-	-	(2)
Total (without LL2)	**20.5**	**4.5**	**6.5**	**31.5**

About 2 hours of oral questions per week
Living language 2 is optional and not always offered
The half hour computer science is only offered in the first period

Per week over 22 weeks

2d year				
Discipline	**Lecture**	**Directed work**	**Practical work**	**Total**
Math	5	2	-	7
Physics	2.5	0.5	1	4
Chemistry	2	0.5	1	3.5
Computer sci	-	-	1	1
Biology and geology	4.5	-	2	6.5
TIPE	-	1	1	2
French and philosophy	2	-	-	2
LL1	2	-	-	2
EPS	2	-	-	2
LL2 (optional)	(2)	-	-	(2)
Total (without LL2)	**20.5**	**4**	**7**	**31.5**

About 2 hours of oral questions per week
Living language 2 is optional and not always offered

Appendix 10.1. Teaching departments in EnvA

Dean: Professor GOGNY Marc

Honorary Deans: Professors : COTARD Jean-Pierre, MIALOT Jean-Paul, MORAILLON Robert, PARODI André-Laurent, PILET Charles, TOMA Bernard.

Honorary Professors: Mme et MM. : BENET Jean-Jacques, BRUGERE Henri, BRUGERE-PICOUX Jeanne, BUSSIERAS Jean, CERF Olivier, CHERMETTE René, CLERC Bernard, CRESPEAU François, DEPUTTE Bertrand, MOUTHON Gilbert, MILHAUD Guy, POUCHELON Jean-Louis, ROZIER Jacques.

DEPARTMENT OF SMALL ANIMAL AND HORSE HUSBANDRY AND DISEASES (DEPEC)
Director : GRANDJEAN Dominique, Pr- Deputy director: BLOT Stéphane, Pr

CARDIOLOGY
- CHETBOUL Valérie, Pr*
- Mme GKOUNI Vassiliki, PH
- Mme SECHI-TREHIOU Emilie, PH

EQUINE CLINIC
- AUDIGIE Fabrice, Pr
- BERTONI Lélia, Ass Pr C
- BOURZAC Céline, Ass Pr C
- DENOIX Jean-Marie, Pr
- GIRAUDET Aude, PH
- MESPOULHES-RIVIERE Céline, PH
- TRACHSEL Dagmar, Ass Pr C

MEDICAL IMAGING
- PEY Pascaline, Ass Pr
- STAMBOULI Fouzia, PH

COMPANION ANIMALS MEDICINE
- AGUILAR Pablo, PH
- BENCHEKROUN Ghita, Ass Pr
- BLOT Stéphane, Pr*
- CAMPOS Miguel, Ass Pr
- FREICHE-LEGROS Valérie, PH
- MAUREY-GUENEC Christelle, Ass Pr

BREEDING AND SPORT MEDICINE
- CLERO Delphine, Ass Pr C
- FONTBONNE Alain, Ass Pr
- GRANDJEAN Dominique, Pr
- MAENHOUDT Cindy, PH
- NUDELMANN Nicolas, Ass Pr
- YAGUIYAN-COLLIARD Laurence, Ass Pr C

NUTRITION
- PARAGON Bernard, Pr

OPHTALMOLOGY
- CHAHORY Sabine, Ass Pr

PARASITOLOGY AND PARASITIC DISEASES
- BLAGA Radu Gheorghe, Ass Pr (attached to the DPASP)
- COCHET-FAIVRE Noëlle, PH
- GUILLOT Jacques, Pr
- MARIGNAC Geneviève, Ass Pr
- POLACK Bruno, Ass Pr
- RISCO CASTILLO Véronica, Ass Pr (attached to the DSBP)

SURGERY
- FAYOLLE Pascal, Pr
- MAILHAC Jean-Marie, Ass Pr
- MANASSERO Mathieu, Ass Pr
- MOISSONNIER Pierre, Pr
- RAVARY-PLUMIOEN Bérangère, Ass Pr (attached to the DPASP)
- VIATEAU-DUVAL Véronique, Pr
- ZILBERSTEIN Luca, Ass Pr

EMERGENCY AND INTENSIVE CARE
- STEBLAJ Barbara, PH

EXOTIC ANIMALS
- PIGNON Charly, PH

DEPARTMENT OF ANIMAL PRODUCTION AND PUBLIC HEALTH (DPASP)
Director: MILLEMANN Yves, Pr – Deputy director: DUFOUR Barbara, Pr

QUALITY AND FOOD SAFETY
- AUGUSTIN Jean-Christophe, Pr
- BOLNOT François, Ass Pr
- CARLIER Vincent, Pr

CONTAGIOUS DISEASES
- DUFOUR Barbara, Pr
- HADDAD/HOANG-XUAN Nadia, Pr
- PRAUD Anne, Ass Pr
- RIVIERE Julie, Ass Pr C

PRODUCTION ANIMALS PATHOLOGY
- ADJOU Karim, Ass Pr
- BELBIS Guillaume, Ass
- MILLEMANN Yves, Pr
- ROUANNE Sophie, PH

REPRODUCTIVE PATHOLOGY
- CONSTANT Fabienne, Ass Pr
- DESBOIS Christophe, Ass Pr (attached to the DEPEC)
- MASSE-MOREL Gaëlle, Ass Pr C
- MAUFFRE Vincent, Ass
- EL BAY Sarah, PH

ZOOTECHNY, FARM ECONOMY
- ARNE Pascal, Ass Pr
- BOSSE Philippe, Pr
- COURREAU Jean-François, Pr
- DE PAULA-REIS Alline, Ass Pr C
- GRIMARD-BALLIF Bénédicte, Pr
- LEROY-BARASSIN Isabelle, Ass Pr
- PONTER Andrew, Pr
- WOLGUST Valérie, PH

DEPARTMENT OF BIOLOGICAL AND PHARMACEUTICAL SCIENCES (DSBP)
Director: CHATEAU Henry, Pr – Deputy director: PILOT-STORCK Fanny, Ass Pr

ANATOMY
- CHATEAU Henry, Pr
- CREVIER-DENOIX Nathalie, Pr
- DEGUEURCE Christophe, Pr
- ROBERT Céline, Ass Pr

ENGLISH
- CONAN Muriel, PCEA

BIOCHEMISTRY
- BELLIER Sylvain, Ass Pr
- LAGRANGE Isabelle, PH
- MICHAUX Jean-Michel, Ass Pr

BIOSTATISTICS
- DESQUILBET Loïc, Ass Pr

SPORTS
- PHILIPS Pascal, PCEA

ETHOLOGY
- GILBERT Caroline, Ass Pr

MEDICAL AND MOLECULAR GENETICS
- ABITBOL Marie, Ass Pr
- PANTHIER Jean-Jacques, Pr

HISTOLOGY AND PATHOLOGY
- CORDONNIER-LEFORT Nathalie, Ass Pr
- FONTAINE Jean-Jacques, Pr
- LALOY Eve, Ass Pr C
- REYES GOMEZ Edouard, Ass Pr

GENERAL PATHOLOGY – MICROBIOLOGY - IMMUNOLOGY
- BOULOUIS Henri-Jean, Pr
- LE ROUX Delphine, Ass Pr
- QUINTIN-COLONNA Françoise, Pr

PHARMACY AND TOXICOLOGY
- ENRIQUEZ Brigitte, Pr
- PERROT Sébastien, Ass Pr
- TISSIER Renaud, Pr

PHYSIOLOGY AND THERAPEUTIC
- COMBRISSON Hélène, Pr
- PILOT-STORCK Fanny, Ass Pr
- TIRET Laurent, Pr

VIROLOGY
- LE PODER Sophie, Ass Pr

BUSINESS AND MANAGEMENT
- FOURNEL Christelle, Ass Pr C

Appendix 13.1. Research units in the EnvA

The EnvA conducts research in the main fields of veterinary sciences, with many applications for animal health, human health and environmental safety. The overall goal is closely linked to the "one world-one health initiative", which was already applied by Louis Pasteur when he worked in the EnvA during the 19th century.

The strategy of the EnvA is supported by several joint research units co-supervised with French research institutes (INRA, INSERM, CNRS), regulatory agency (ANSES) and medical universities (UPEC, Université Paris Diderot). This offers a unique opportunity for collaboration between scientists from different domains including veterinarians, agronomists, basic scientists, pharmacists and medical doctors. This is reinforced by the location of the headquarters of the French Food and Environment Agency (ANSES) in the same campus. The College of Human Medicine (UPEC) is also very close and can be reached within 10-15 min using public transport. The faculty includes about 100 scientists who publish 80-100 publications per year in international journals (IF>0.5). Approximately 20-30 PhD students or post-doctoral fellows work at the EnvA.

The first research axis of the EnvA is on **animal infectious and zoonotic diseases**. It focuses on the biology, transmission pathways and/or treatments and vaccines of the viruses, bacteria and parasites of veterinary and public health importance. This includes the following 4 research units:

Joint Research Unit in "Virology" (ANSES-EnvA-INRA; Head: S. Zientara)

This Joint Research Unit investigates zoonotic or epizootic virus of major human and veterinary public health importance. The scientific strategy includes fundamental questions regarding the biology of viral agents but also applied research on epidemiology, vaccinology and mechanisms of interactions between the virus and its host cell. For example, this unit evaluates original diagnostic tools for epidemiological surveillance and phylogenic studies of animal viruses. A special emphasis is placed on orbivirus, picornaviruses, neurovirology of zoonoses, enteric viruses, species barriers, adenovirus-derived vectors and vaccines

Joint Research Unit in "Molecular biology and immunology of parasitic diseases" (ANSES-EnvA-INRA; Head: N. Haddad)

This Unit in parasitology and bacteriology investigates food-born-parasites and tick-born infectious diseases. The aim is to improve knowledge of the transmission pathway of parasitic and infectious diseases, as well as the understanding of the interaction between host, vector and infectious agents. The ultimate goal is to better detect infectious agents in order to improve the early detection of such diseases and their ultimate treatment and prevention.

Joint Research Team in "Epidemiology of animal diseases" (ANSES-EnvA; Head: B. Dufour)

This team investigates several aspects of animal epidemiology, including the following one:
- Development of decision tools in animal health, i.e., hazard and decision modeling and analysis for animal diseases of major importance for veterinary public health, economic analyses in the field of infectious animal disease prevention.
- Epidemiological surveillance, i.e., assessment of the intervention network, economic evaluation and assessment of the accuracy of the alert monitoring systems.
- Epidemiology of zoonoses and wildlife.

Joint Research Team in "Dynamics of colonisation and infection by Aspergillus fumigatus in the respiratory tract in humans and animals" (UPEC-EnvA; Head: J. Guillot)

This research team comprises physicians and veterinarians who collaborate to answer specific questions in relation with to fungal colonisation and infection in humans and animals. The team focuses on Aspergillus fumigatus as an environmental microorganism that may colonize human an animal respiratory tracts. The mechanism of the interactions between respiratory epithelial cells in humans and animals is also investigated, as well as the potential resistance to antifungal drugs (e.g., azole).

The second research axis studies **muscular, locomotor and reproduction biology and medicine**. This includes the following 4 research units:

***Joint Research Unit in* "Equine locomotor pathology and biomechanics" (EnvA-INRA; Head: N. Crevier-Denoix)**

Considering that lameness, performance defects and locomotor diseases are the leading causes of economic losses in horse industry, this research units focuses on the following axes:
- The clinical evaluation, imaging (ultrasound, MRI), biomechanics and therapeutic approaches of joint diseases.
- The biomechanical analysis of the effects of equestrian surfaces on the musculoskeletal system of horses (impact on comfort and safety)
- The propagation of ultrasound in the tendon.
- The clinical research on locomotor disorders in horses.

Joint Research Unit in "Bioengineering and Bio-imaging of osteo-articular tissues" (CNRS-EnvA-Université Paris Diderot; Head: H. Petite)

This unit designs innovative systems that optimize the performance of orthopaedic implants, enhance bone repair through regenerative medicine approaches, and non-invasive modalities for the characterization of healthy and pathological bone. It is divided into 3 teams focusing on bone engineering, multiscale imaging of osteo-articular tissues and improvement of the bone and implant interface.

Joint Research Unit in "Developmental and reproduction biology" (EnvA-INRA; Head: C. Cotinot)

This unit investigates the developmental mechanisms that contribute to the adult phenotype, their regulation by the environment (and the study of long-term effects of early programming on subsequent health and reproductive capacity. Four axes are particular developed:
- Structural and functional dynamics of the embryonic genome during the early stages of development, in relation with the pluripotency mechanism.
- Mechanisms and characterization of gestation and regulation of maternal-fetal interactions.
- Gonadogenesis and fetal gametogenesis, molecular and cellular mechanisms and impact of environmental factors on these processes.
- Adaptation of the embryo and the foetus to its environment, particularly through epigenomic interactions.

Joint Research Team in "Biology of the neuromuscular system (UPEC-INSERM-EnvA-EFS; Head: F. Relaix)

This Team focuses on several aspects of neuromuscular disorders. A subgroup works on Pax3/Pax7 functions during skeletal muscle, neural tube and craniofacial development. Other subgroups work in the field of neuromuscular disorders, such as myotonic dystrophies, macrophagic myofascitis and Duchenne muscular dystrophy. The veterinary geneticists also investigate the genetic bases of canine and feline neuro-muscular disorders, with potential applications for both animal and human health. Canine and feline models of human myopathies are also deeply investigated, particularly in the context of preclinical evaluation of unique therapeutic strategies, such as exon skipping approaches.

Joint Research Team in "Pathophysiology and pharmacology of coronary disease and cardiac failure" (UPEC-INSERM-EnvA-EFS; Head: B. Ghaleh)

The scientific objectives of this unit are to perform physiopathological and pharmacological investigations to develop strategies against myocardial ischemia (i.e., myocardial stunning and infarction, cardiac arrest) and heart failure. The ultimate goal is to establish proof of concepts 1) for pharmacological or technological developments and 2) to promote clinical and translational research. These programs are conducted from cellular to the most integrative levels of cardiovascular pathophysiology and pharmacology. Unique therapeutic strategies are currently investigated such as mitochondrial pharmacological targeting, heart-rate reduction strategies and protective hypothermia through total liquid ventilation.

Beyond its own fundamental research units, the EnvA also supports its own community and national and international partners through the following facilities:

- A unique Hospital (CHUVA), with an innovative institute devoted to clinical research (IRCA)
- A biomedical research centre (CRBM)
- A clinical biology and pathology laboratory
- An immunology and molecular biology platform

Links to other institutions

- ANSES : Agence nationale de sécurité sanitaire de l'alimentation, de l'environnement et du travail (https://www.anses.fr/fr)
- INRA: Institut National de la Recherche Agronomique (http://www.inra.fr/)
- UPEC: Université Paris-Est Créteil (http://www.u-pec.fr/)
- Inserm: Institut national de la santé et de la recherche médicale (http://www.inserm.fr/)
- CNRS: Centre national de la recherche scientifique (http://www.cnrs.fr/)
- Université Paris Diderot (http://www.univ-paris-diderot.fr/)

Glossary

ANSES – French Agency for Food, Environmental and Occupational Health and Safety
BCPST – Scientific preparatory classes
CAPA –Field-station of Champignelles
CHUVA – Alfort Veterinary Hospital, including all animal species
CHUVA-AC – Companion animal Hospital
CIRALE – Horse centre of Goustranville
CoMUE – Community of universities and institutions
CPER – Plan contract State-Region
CRBM – Centre of Biomedical Research
CSF – Clinical Sciences in Farm Animals
CSH – Clinical Sciences in Horses
CSS – Clinical Sciences in Small Animals
CU – Competence Units
DEFV - Diploma of veterinary fundamental studies
DEPEC – Department of Carnivore and Equine Husbandry and Diseases
DGER – Ministry Department of Higher Education and Research
DPASP – Department of Animal Production and Public Health
DSBP – Department of Biological end Pharmaceutical Sciences
DVM – Doctor in Veterinary Medicine
DESV – French National Diploma of veterinary specialization
EAEVE – European Association of Establishments for Veterinary Education
ECTS – European credits transfer system
EnvA – Alfort National Veterinary School
EU – European Union
FTE – Full-time equivalent
FVS – French Veterinary Schools
IAV2F – Agronomy, veterinary and forestry Institute of France
IRCA – Animal Clinical Research Institute
LU – Lecture Units
OIE – World Animal Health Organization
MAAF – Ministry of Agriculture, Food-Industry and Forest
MC – Assistant professor
PH - Senior Hospital practitioner
PR – Full professor
SHEVA – Horse riding association
TICE – Technologies of Information and Communication for Education
VPH – Veterinary Public Health