



# EAEVE

Self-assessment  
Report

# 2014



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# INTRODUCTION







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## STATEMENT OF MISSIONS

## 1. A brief memorandum of general policy

College of the Minister of Agriculture and Agrifood, Oniris develops its missions of education and research in Nantes. Oniris also plays a stronger role in support of public policies and economic sectors of Health and Nutrition.

Until 2010, the Faculty was the Veterinary School of Nantes (ENVN). In January 2010, the merger of the ENVN with an engineer school led to the creation of Oniris, Nantes Atlantic National College of Veterinary Medicine, Food Science and Engineering. Oniris is a more complex establishment that includes a new project whose general objectives are broader with cross-cutting aspects.

Oniris maintains its thematic range including veterinary medicine, animal health and public health, biotechnologies and food domains. Oniris has built its brand by offering an added value through to crossdisciplinarity education in veterinary and engineering. This added value is expressed in numerous courses and research innovations, and especially in veterinary education. Following to evolutions of French laws concerning the higher education and research and the future of agriculture, Oniris expand the previous practice of ENVN by innovating and by emphasizing the modernization of its veterinary education.

A principal mission of Oniris is to train high level professionals able to tackle international challenges in Health and Nutrition sectors, as reflected by its motto "Health and Nutrition at the heart of life".

The acceleration of internalization is a strong element of Oniris development strategy in the coming years which will translate to an increase in enrolments of international students in our programs. Oniris internalization programs aim at a 25% target enrolment rate of international student. To facilitate such plans, Oniris is implementing plans for recruitment of Anglophone lecturing staff, researchers and students. Additionally plans are being finalized for teaching of various courses in English. The internationalization of our doctoral hosting, particularly students from English-speaking students, supported by the post-doctoral researcher hosting from the same countries, constitutes also an element of this programmed internationalization.

Oniris post-graduate level training at Master's degrees level are jointly offered and approved by Rennes and Nantes universities. Establishment of the prestigious PhD research-education program at Oniris was facilitated in part by its excellent reputation has the first french veterinary school accredited to the doctoral degree. Oniris enrolment of PhD students has swiftly increased since 2010 and will continue to increase over the next few years, including international student recruitment. Our goal at Oniris is to increase by 15 % the training of doctoral students and that their education and thesis work is developed under international partnerships programs. By doing so, Oniris aims to attract young researchers from other institutions and to train more doctors among its graduate, including veterinarians, to ensure incorporation of their multidisciplinary curriculum into their core businesses.

As part of the regional patterns of the higher education and research, Oniris plays a differentiating role, especially on international transparency issues for France:

- The creation of a strategic alliance with the University of Nantes on the "One Health" concept through the aspects of safety and nutritional food, public health, and biomedical dimension.
- The structuring of integrated devices "Education-Research-Innovation" on topics that will make the identity of a future Food Research Institute by mobilizing sector industrial companies.

Of course, the readability of Oniris is based in particular on its two main curriculums:

- The veterinary careers. The strength of our veterinary pathologist education is to combine a strong scientific training and skills acquired through a clinical training in early immersion with an innovative education through research in France
- The engineering trades in food science and in "Health biotechnologies". This two specialties, strongly rooted in the industrial fabric, benefit from unique professionalizing tools, including a pilot plant in very similar conditions to those in industry and BioPractis center, a unique platform in France dedicated to biotechnology for the training and continuing education of future engineers and technicians. The intended use of these tools for the veterinary curriculum will bring originality and attractiveness to the Oniris veterinary education in the future.

Oniris is the only French establishment in which may gradually develop an interaction between veterinary and engineers' students. While ensuring that these two courses remain distinct, and specifically by strengthening the veterinary curriculum, we emphasize the initiatives to make that these curriculums interact. The objective is to provide an added value aiming at an originality of skills of our diplomates that ensure them a better employability and in diversified businesses.

This added value, related to the synergy of the two curriculums, is at the origin of our new engineer curriculum in "Health Biotechnologies" in 2012. This training includes an important practical part performed in the BioPractis Center, an hall of health biotechnologies, and closely linked to the industries in the biotechnology sector and with the support of the Pole of Competitiveness "Atlanpole Biotherapies". This practical part also relies on the Oniris Gene Therapy Center, in conjunction with the French Muscular Dystrophy Association (AFM), the GENETHON and INSERM, with the nearby presence of ARRONAX cyclotron.

Oniris wants to expand its integrated approach "Education-Research-Innovation", notably in the framework of three innovative programs developed during the national dynamic of the program «Investing for the Future».

Thus, Oniris conducts the program MANIMAL, labeled "Initiatives of excellence in innovative education" by an international jury. This program involves The Nantes and Angers medicine Universities, and Angers Higher School of Agriculture. It is based on "One Health" concept and is articulated around the doctor/veterinary dual trainer for engineers and biologists. This training is innovative in its multidisciplinary recruitment, by its cross-cutting thematic and by its pedagogical choices. This is the first French program based on the «One Health» concept developed by FAO, WHO and OIE. Certified by the Valorial competitiveness cluster, this program allows a structuring of Pays de la Loire region, on the theme of "public health, food safety and nutrition safety which puts coherence aspects related to education, research and transfer activities in this field.

Oniris also pilot a program that contributes to the structuring of Higher Education and Research and the territorial legibility in the field of food and the challenges of economic development in this sector. This Food'Innov program appears to be food innovation campus based on the creative potential of students. It is led by Oniris, in partnership with the Nantes School of Design, Audencia business school, University of Nantes and ESA school of Angers. As a result of a better education in innovation, the students, from basic courses to Msc and PhD degrees, are able to better meet industry needs, increase their employment opportunities and to start new companies. This campus offers novel teaching practices, in particular an open innovation platform based on "student sourcing". The program, Certified by the Valorial competitiveness cluster, is an interface between companies and potential student creativity.

A third Oniris structuring program, the creation of the "Veterinary Institute of Preclinical Research", is developed around the "One Health-One medicine" concept. Through a research-education integrated approach, this program provides a greater activity to the preclinical research in animal models and more broadly to the preclinical research in the Pays de la Loire region. It includes several laboratories of the biomedical research department and combines the technical platforms of the "Animal Model Expertise Center" resulting from the merging of the Preclinical Investigation Center and the Gene and cellular Therapy Center. It also includes the "Animal Biological Resources Center" and is developing in an environment comprising the Oniris Veterinary Teaching Hospital (VTH) and its "Veterinary Cancer Center".

To expand its research activities, the school has organized four research departments (see research activity report 2013 and 2014), whose units are mixed with INRA, INSERM, CNRS or in partnership with the IFREMER and ANSES:

- . The "Clinical and biomedical research and Animal models" axis;
- . The "Public health and farm animals' health" axis;
- . The "Food quality and safety" axis;
- . The "Food processes, management, and sustainable development" axis.

In parallel, various measures have been taken to ensure Oniris develops as "citizen school". This ambition is directed to students, while continuing to transmit them relevant values as equal opportunities scheme of the type "Cordées de la réussite" (Brio Program), as humanitarian activities, and as cross actions of the enhancement of biodiversity.

## 2. Main features of the history of the School in the period since the last evaluation visit

The management of the Faculty has worked to adapt the educational programs so that they allow an adaptation of the diplomates' skills to the market diversification while consolidating the devices leading to classical job prospects. Thus, in grade 5, in addition to clinical courses offered in the other French Veterinary School, Oniris proposes specific in the domains of:

- Public health and food safety, in the framework of "One Health" concept, thanks to the installation of the unique Manimal Program ([www.man-imal.fr/fr/](http://www.man-imal.fr/fr/)) labeled by an international jury,
- Human and veterinary pharmaceutical industry, by taking accounts the diversity of professions in this sector (research-development, marketing-management, bioproduction). This offer, recently developed after regular interactions with the "French Union for the Veterinary Medicinal Products and Reagents Industry (SIMV)", includes the master entitled "Marketing of Health Products and Services" and an access to Biopractis training Hall allowing the production of biomolecules (monoclonal antibodies, vectors, recombinant vaccines...) in very similar conditions to those in industry ([www.biopractis.com](http://www.biopractis.com));
- The research, by developing a unique training for and through research in the national French veterinary school. This specificity lies in the unique situation of Oniris compared to the other ENVF to award the doctorate and to enroll PhD students (currently 92 PhD students). More broadly, Oniris is the only national French veterinary school that put in place mandatory tools of training for research: "the research passport". This strategy is based on the development of its strategic reflection around areas of scientific research (Departments, Research Units, Platforms);
- The ecosystems, environment, wild Fauna, and beekeeping, thanks to our device designed around The environmental center of ecosystems and wildlife.

The diversity of business activities which provide job prospects for our diplomates is brought to the attention of students on their arrival at Oniris. For 2012, this diversity is reminded at the annual meeting of the career forum carried out with the participation of various professionals which come into direct contact with students.

The school management implemented a four-year program for the recruitment of faculty members which was renewed in 2014. The planned recruitments fill out a detailed specification sheet aiming to amplify the opening of teaching profession. Thus, an opening is targeted towards professionals for example by recruiting of European diplomates colleagues as associate professors. In this context, Oniris planned to recruit a professor in surgery and a director of Veterinary hospital center with a dual degree in marketing management.

The international opening of the teaching profession is also a priority for Oniris which decided to recruit only board certified colleagues from European or American colleges in clinical disciplines and with an international experiences. This required international mobility is complementary to other strategic elements such as the establishment of a semester of courses in English.

The school management shall ensure to modernize the education with innovations in teaching methods and tools. For example, the decision was taken to develop unique tools in the French Veterinary Schools named «Virtual Vet», in order to improve the self-learning of the students. This set includes two first rooms enabling students to repeat gestures on manikins and electronics («Virtual Critical Care Vet»). This virtual approach reflects also a desire to respect animal welfare and the accreditation process by the "Association for Assessment and Accreditation of Laboratory Animal Care International", in which the establishment has started to register in 2014. This «Virtual Vet» also includes a pedagogical approach of the histopathology with the learning software «Virtuoso» and a project of 3D anatomical atlas usable by computer and digital tablet.

The progressive development of a quality system covering gradually the school activities is programmed by the directorate. Its achievement should be fully effective in 2017. This goal is part of a strategy already initiated by the establishment for its units and research platforms, through the recognition by third-party of their organization and skills by the certification and accreditation bodies. Indeed, a quality approach according to ISO17025 and ISO9001 has already been deployed in several units and platforms for their research and analysis activities but also for their continuous training provided (LABERCA, Therapy and gene center, Panther unit).

From 2014, new sectors of activity will benefit of this ratchet effect.

The next step is the certification of all the elements of the system for core education, based on the existing assessment of teaching and the ongoing improvement of professional practices.

The second identified sector is the Veterinary Teaching Hospital. Oniris policy aims to maintain also the culture of the ongoing improvement to ensure the satisfaction of its beneficiaries (students, clients, research partners, etc ...).

To achieve its objectives, the Executive Committee just recruits a quality engineer in 2014 that will join the existing team involved in Quality control.

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### 3. New buildings or major items of equipment related to changes or evolutions of the study program and due to decisions made by the direction of the School

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- Beyond organizational changes specifically affecting the veterinary school since its previous evaluation by EAEVE, the main structural evolution was its association with an engineering school to create Oniris in 2010.

The strategy of the school is to develop transversal tools between the veterinary and engineering courses while ensuring the specificity of the both courses. Thus, in addition to elements specifically related to the veterinary sector, a number of major equipments initially made for engineering students are also likely to improve programs of veterinary education.

- In 2014 a building was constructed for equine intensive care, emergency and soft tissues surgery, so that the equine hospital organized in an «International Health Center Oniris Horse» is now achieved.

- The creation by construction - rehabilitation of buildings was initiated in 2010. In this context, a center of veterinary public health and food safety was completed in 2014. It is part of the Oniris strategy on the development of «one health» concept. This center is also included in regional network developed in Nantes and Angers with the MANIMAL Program and constituting a campus of veterinary public health and food safety and nutrition structured by Oniris.

- Oniris has recently invested heavily in the construction and equipment of radiotherapy and imaging facilities with a range of unique equipments in the French Veterinary Schools. These facilities for education and research are used in several activities and for several animal species. It is one of the strong points of the progressive organization of the Veterinary Cancer Center decided by the Executive Committee;

- Another structuring program, the creation of the «Veterinary Institute of Preclinical Research», is developed around the «One Health-One medicine» concept.

The construction of this device was recently complemented by the development of courses linked to the biotechnology health curriculum, and resulting in the construction and implementation of a building housing the training center «BioPractis». It allows the achievement of initial and further training courses in health biotechnology in situations mimicking industrial conditions and GLP. This development was supported by the State, the Region Pays de la Loire and Nantes.

- In 2013 and 2014, significant human and material investments were decided and made to develop courses of students around the various aspects of clinical communication. These investments are visible in two locations with coordinated objectives: the development of a fully equipped consultation room and the expansion of the welcome area of the hospital in order to developing student's professional competences around the concept of communication and client management.

- In 2013 and 2014, two rooms were rebuilt and equipped to develop a comprehensive learning system using «virtual» models without live animals. These rooms, gathered under the «Virtual Vet» concept (see below) are equipped with cutting edge technologies, including the «Virtual Critical Care Vet» room equipped with electronic animal models and distance learning materials.

- The construction and installation of two other rooms using innovative learning methods of multidisciplinary groups was determined from two partnership programs coordinated by Oniris: Manimal program and Food Innov program. These rooms will be used for different purposes. The collaborative co-design room conceived for Food Innov program is already in operation.

- Some buildings and large equipment designed mainly for Oniris engineer course were recently decided and performed and they will also contribute in years to come in veterinary education. Thus, the expansion of the teaching pilot plant, for food processes is also useful to a better professionalization of veterinary courses using laboratory works in conditions similar to those in industry in the fields of food hygiene, quality of food products and food processes.

- The energizing campus life and improving student housing amenities standing goal at Oniris. For example, the school has invested in 2012 by building a new sport field.

- Recently, it was decided to build a new university residence with 300 rooms in Oniris. The improvement of Living conditions should also promote the attractiveness of the school for both French and international students.

# CHAPTER 1





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## OBJECTIVE

## 1.1 - Factual information

The determination of the general objectives of Oniris and their official list have evolved over time and with the structural change.

Until 2010, the National Veterinary School of Nantes had a development plan with general objectives identified by our steering committee approved by its Executive Board.

In January 2010, the merger of the ENVN with an engineer school led to the creation of new school, named Oniris, Nantes Atlantic National College of Veterinary Medicine, Food Science and Engineering. Oniris is now a complex establishment with a new unifying project comprising broader objectives with cross-cutting aspects between the two curriculums. The main objectives were then determined by a strategic note approved by the Executive Board in 2010 and updated in July 2012 by the Director during his re-nomination and validated by the Executive Board and the Ministry of Agriculture. This was supplemented in 2013 by an official letter of assignment from the line Ministry send to the Director reminding main objectives. Finally, the executive and the steering Committees undertook in 2012 the development of a list of targets and indicators

- Such document including the general objectives of the establishment (school development plan until 2010, detailed strategic note, letter of assignment and the list of objectives and indicators) and their implementation are regularly evaluated by the following governance bodies:

- The executive and Steering Committees,
- The executive Board during its three annual meetings ,
- Line ministry during the annual budgetary and strategic meetings with the school Directorate in November.

## 1.2-Comments

### 1.2.1

In 2014, many of long-term objectives, set in 2002, will be achieved, both in education and research areas, with the development of interfaces "education-research-innovation" with economic sectors.

### 1.2.2

- The school knew how to make decisions and identified ways to modernize its facilities and curriculums during this decade. The objective is now to develop a comprehensive and diversified learning program suitable for the whole range of employment opportunities for the veterinary students with unique features of Oniris.

- In addition to the strengthening of the «classic» clinical training, the school also developed progressively innovative learning methods, for example by using approaches or by taking advantages of the multidisciplinary training (medical, engineering , ....) to optimize the professional skills of its students ...

- An additional strength of Oniris is related to the fact that Oniris is the sole French veterinary school accredited to deliver the PhD degree, an unique situation in France (92 PhD students in 2014 ).

### 1.2.3

Along with these specific strengths, the school still has some weak points or lines of progression.

- Among the weaknesses,
- some are shared by the four French Veterinary School and in relation with the statutes and the national external limitations, including:

The fundamental impossibility to increase staff number employed, even if financial resources permit, because there is a job ceiling determined by the French State, even for contract employment,

A lack of an appropriate status for the veterinarians involved in clinical teaching, such a status does not exist in France

- Some other weaknesses specific to Oniris are partly linked to national weaknesses. However, we hope to solve them in the next two years. In particular, some clinical disciplines (medicine and imaging) do not have clinicians certified from American



or European colleges, which hampers the attractiveness of the school.

- In addition, the Directorate has recognized two main areas of progress to be immediately promoted and in years to come, in order to increase the attractiveness of the school:
  - The distance learning is still in its early days and must be developed by the teaching staff as learning methods for some courses.
  - Although some courses in English language have already been put in place during the past few years, this point needs further development and better organization to increase the school attractiveness with regard to non-french-speaking students.

# CHAPTER 2





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## ORGANISATION

## 2.1 FACTUAL INFORMATION

### ● DETAILS OF THE FACULTY

**Name of the Faculty:** Oniris

**Address:** la Chantrerie - Atlanpôle, CS 40706 44307 Nantes cedex 3

**Phone Number:** 33 (0) 2 40 68 77 77

**Fax:** 33 (0) 2 40 68 77 78

**Website:** [www.oniris-nantes.fr](http://www.oniris-nantes.fr)

**E-Mail:** [direction@oniris-nantes.fr](mailto:direction@oniris-nantes.fr)

**Head of the Faculty:** Professor Pierre SAI

Oniris is not within a university. The competent authority overseeing the Faculty is the Ministry of Agriculture, Agri-food and Forest. The address is the following:

Ministère de l'Agriculture, de l'Agroalimentaire et de la Forêt  
Direction Générale de l'Enseignement et de la Recherche  
Service de l'enseignement supérieur, de la recherche et de l'innovation  
Sous-direction de l'Enseignement Supérieur,  
1 ter, avenue de Lowendal  
75 700 PARIS 07 SP

The Director General is a DVM graduate appointed for a term of five years (one time renewable) by the Minister of Agriculture on the advice of the executive board. He has direct authority over all the institution's staff and students. He appoints the deputy director, heads of Department and the head of administrative affairs (Secretariat-General).

Oniris is administered by an **Executive Board** (CA) (see appendix 2.1) made up of 32 members: 8 representatives elected by faculties (4 full professors and 4 associates), 4 representatives elected by other staff categories, 4 representatives elected by the students and 16 members from outside the institution nominated by the MAAF after proposal by the director, including representatives of the veterinary profession and the Ministry of Agriculture. Based on proposal by the director general, the budget is discussed and then voted every year. The CA defines the strategic orientations of the school in all areas (education, research and development). It is responsible for all aspects of the school's general technical, educational, administrative and financial operations, and meets at least twice a year. The president of the board is elected among the outside members.

**The executive committee** is made of the director, the deputy director, assistant directors, head of administrative affairs and the director of the veterinary teaching hospital (VTH). Its mission is to assist the director in administering the institution by proposing and assessing actions and strategic orientations.

**The steering committee** is made with executive committee plus heads of research and teaching departments. Its mission is to assist the director in administering the institution.

**The teacher council** is made of elected faculty members. All members of the faculty members are invited to participate without voting. It coordinates curriculums, determines the composition of examination juries and establishes examination results and related sanctions. It formulates recommendations regarding programs, organization of teaching, and creation of faculty positions.

**The curriculum and students affairs council** is made of members of the executive board and representatives elected from faculty and students. It examines all questions concerning curriculums and academic affairs and makes proposals regarding the institution's educational policies.

**The scientific committee** is made of elected faculty, researchers and students, and representatives of national research institutions and partners (INRA, CNRS, ANSES and Universities). It formulates proposals concerning scientific policy. It puts forward recommendations on research policy and allocation of research funding, as well as research profiles for new academic and non-academic positions.

**The animal ethics committee** is made of outside members and representatives of faculty, staff, and students. It evaluates animal experimentation activities, as well as research and practical protocols affecting animals.

Other administrative and representative bodies are made of elected or designed persons from the faculties, staff and students. These include the technical committee (CT) in charge of questions related to employment, working rules and salaries of employees directly paid by the school, the health, safety and working conditions committee (CHSCT) in charge of hygiene and safety matters, the lecturer grades commission in charge of evaluating the promotions of faculty members, and the Veterinary teaching hospital council (made of faculty involved in clinical activities) in charge of all technical and organizational matters for the VTH. Lastly, informal task forces are regularly formed combining different categories of staff.

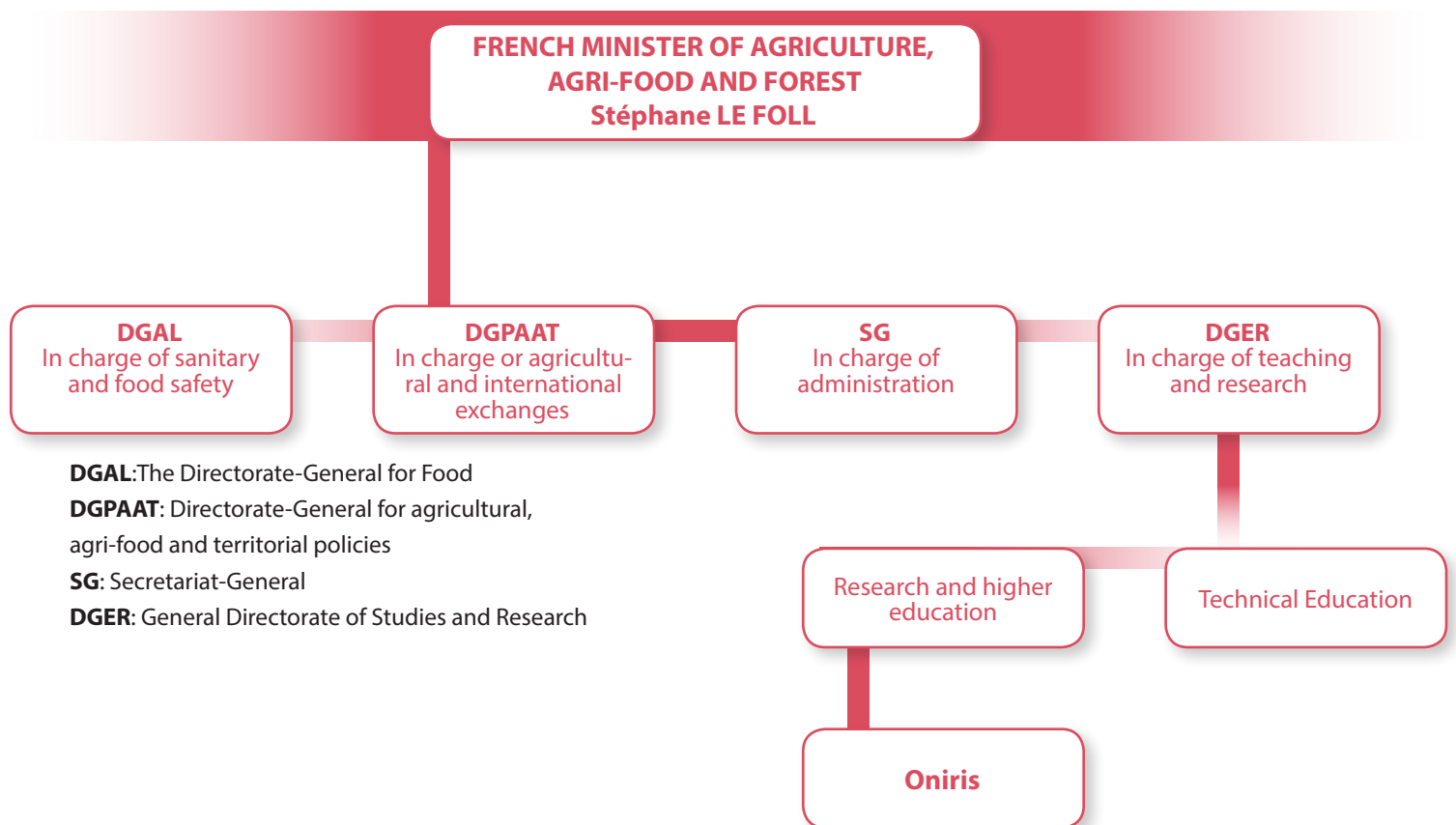
Representatives of the veterinary profession and general public are involved in Executive Board and the Curriculum and Students Affairs Council. They have a direct influence on the strategic orientations of Oniris.

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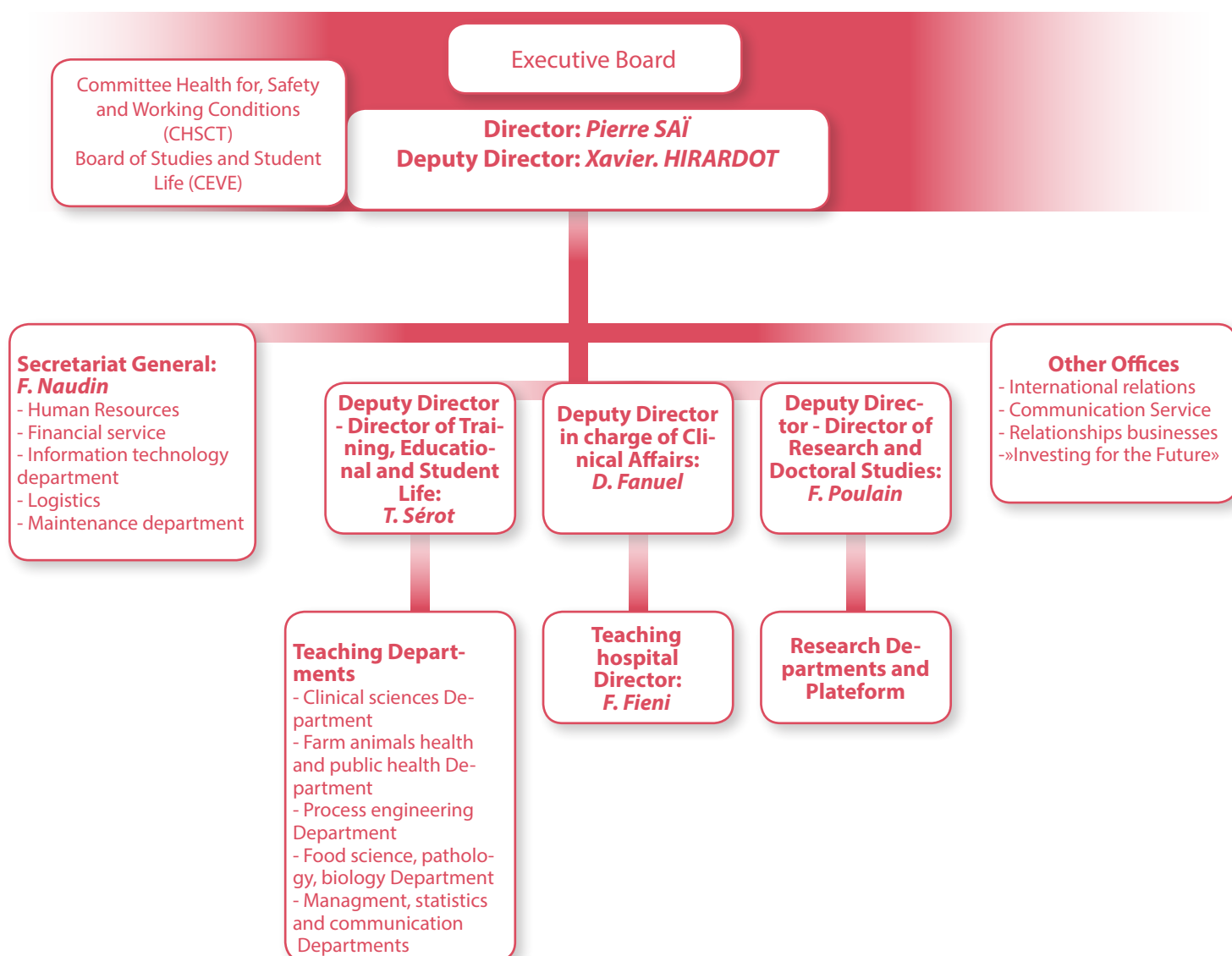
## 2.2 COMMENTS and SUGGESTIONS

Several changes are ongoing or planned in the short term. They will appear in the flow chart of Oniris:

- Oniris made the decision to merge the respective directions of the veterinary teaching hospital (VTH) and the "Animal Model Expertise Center". A veterinarian with a dual degree in marketing management has been recruited for this position. This new organization should strengthen the link between clinical aspects and clinical research. It also should ensure a full time professional treatment..
- Oniris wishes to develop a quality system for the training and the veterinary hospital organization as already mentioned in the introduction. A qualitian will be also recruited in 2014 and its missions will appear in the Oniris flow chart .
- Finally, digital and information systems services will be in place soon. The aim is to develop in particular the distance learning.







# CHAPTER 3







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## FINANCES

### 3.1 FACTUAL INFORMATION

#### 3.1.1 GENERAL INFORMATION

##### ● Accounting and financial model

As a public scientific, cultural and professional establishment (EPCSCP), Oniris is a separate legal entity. It has an administrative, financial, pedagogic and scientific independence as laid down in the educational code and by Article 21 of Decree n° 2009-1642 of 24 december 2009 setting up of the establishment.

##### ● Methods for determining the budget

The budget of the school, as well as the ongoing amending and the year-end financial account are voted by the executive board. They are proposed by the Director on the basis of expected revenues in different sectors of activity: education, research, services.

Source of incomes & allocation modalities

The main source of financing are the following: (sources from authorizing officer's report 2013, see appendix):

- Funds allocated by the State (20%)
- Services: Hospital & Laboratories (18%)
- Research & Development (16%)
- Internal Business (13%)
- Grants from Pays de la Loire & other public authorities (9%)
- Sources from core education (6%)
- Sources from Continuous education (4%)

##### ●● Funds allocated by the State

Oniris received annually grants from the line ministry:

- For the remuneration of a maximum number of official positions. The «job-ceiling» was fixed on the basis of the existing of each establishment in 2011. It is intended to remain stable in order to avoid the inflation of the number of officials,
- For a maximum number of contractual staff: this number is currently under negotiation between the establishments, the line Ministry and the Ministry of Finance,
- For a lump-sum operating grant (the method of calculation is not provided by the ministry),
- For a financial compensation of 50% of exemptions from school fees for students receiving grants,
- For investment credits, upon presentation of projects by the establishment for premises complying with standards but also to ensure accessibility for persons with disabilities and to meet safety and health standards of persons and goods,
- For investment credits associated to the State-region contract plan,
- For a financial package to support scientific research. The amount is based on the number of scientists affiliated to research units, on the number of leading publications and on the number of defended theses directed by the scientists of the establishment. This amount was EUR 397,764 € in 2013.

##### ●● Other sources of incomes

Two other important sources of incomes of the establishment are:

- Services of analysis laboratories concerning the veterinary teaching hospital (VTH) and the LABERCA research unit (EUR 4,473,000 in 2013),
- The collaborative research & development contracts in an amount of EUR 4,000,000 in 2013,

### ● The distribution of the budget between the different departments

#### ●● financial allocations for teaching

#### ●●● Budgets of teaching departments

At the beginning of each calendar year, the Directorate notifies the heads of departments of the financial envelop repartition allocated as follows:

- The « Course Units » (CUs) part dedicated to the learning costs, including consumable purchases for practical works and handout costs,
- A part called « Transversal » destined to faculty members. It allows the acquisition of equipments for course preparation of the continuous education. This part is calculated as a pro rata of the number of faculty members and administrative and technical staff assigned to teaching department,
- The « Contractual » part is constituted of funds to specific actions such as equipment investments .

These financial envelops are based on last year's expenses. They are determined in consultation with the directors of veterinary and engineer curriculum. The heads of teaching units are regularly consulted for the updating of allocations, particularly following to educational reforms. The heads of department are responsible for the repartition and the monitoring of expenditures.

#### ●●● Budgets of teaching temporary works

At the beginning of the calendar year, the heads of department expressed their specific needs in hours of teaching, number of hours of part-time teacher for courses of the following school year. Arbitration is carried out by the executive committee before the official budget notification. A follow-up procedure was established to ensure compliance with decisions before each contract of teaching temporary work is signed.

#### ●● Veterinary teaching hospital (VTH) resources

#### ●●● Activity agreement

At the beginning of each calendar year, an activity contract is established and co-signed by the Director and the Director of the VTH. This agreement contains quantitative, qualitative and financial objectives assigned to VTH. In return, the directorate provides financial, human, property, and educational resources.

#### ●●● Hospital staff resources

In addition to the permanent staff, the VTH recruits annually hospital staff according to the following procedure:

- In the first half year, the VTH director proposes to the director to recruit hospital contract agents, following requests made by the clinical heads after examination by the VTH office.
- An arbitration is carried out to identify the resources in hospital practitioners and assistants but also the hospital part-time clinician for the following school year.
- A recruitment procedure is organized by the VTH direction. A call for application and a presentation in front of an evaluating jury is scheduled yearly at the end of June or at the beginning of July.
- The recruitments made by the jury lead to the preparation of employment contracts of selected clinicians by the human resources department.

#### ●● Other expenditures

The other expenditures, including support and research services, are centralized. The order forms are prepared by the services. They are then approved by the heads of service or department and signed only by people authorized by the officer, namely the director and his deputy, the general secretary and her deputy, and the head of financial service.

#### ● Funding modalities of equipments

Due to its large self-financing capacity of nearly € 1 million and with working capital of nearly € 9 million, Oniris develops an active investment policy for education and research. .

Each year, the school invests from 4 to 6 million euros for the renewal of its scientific equipment, its facility maintenance and

the renovation of premises. These investments are selected in accordance with the establishment strategic choices whose the broad outlines were presented in the introduction of this report.

Oniris uses several other sources of incomes:

#### ●● For small equipments:

- The Pays de la Loire Region participates in the financing of the teaching equipments through an annual call for projects called «Region educational credits». It finances 25% of each selected project. For example, this funding has allowed acquiring manikins for self-learning rooms in 2013.
- A tax paid by the companies. It is managed by the responsible of corporate relations through an annual campaign.

#### ●● For large equipments:

- The Call for Projects allows acquiring new scientific equipments. For example, the ARRONAX program made possible the equipment acquisition destined to new medical imaging platform for both researchers and clinicians.
- The French National Research Agency (ANR) provides financial support for establishments on the basis of scientific projects selected following a call for proposals. Oniris was assigned 10 allocations from ANR for the period 2012-2013. For example, MAN-IMAL is a € 5,2 million teaching program for eight years. A part of the funds will be used to finance a TICE (Technologies of information and communication for teaching) multi-media room.
- Most of equipment projects are carried out within the framework of the five-year State-region contract plan (CPER). This national call for projects allows the support of innovative and strategic projects for the establishments. The projects are subjected to co-financing between the Region, the State and the Establishment, and, as appropriate, with a financial support from General Council, Nantes Metropole (the urban community), and the European Regional Development Fund (ERDF). For the period 2007/2013, these funds from CPER allowed to acquire an SL 25 serie linear accelerator and a SPECT/CT for radiotherapy as well as material for the experimental surgery.

#### ● Funding modalities of investment expenditures

The main immovable property and large equipment investments in recent years are:

Year of entry into service	Sources of financing	Title	Amount
2012	own funds	Expansion and restructuring of pet animal internal medicine pole	350,000 €
2012	own funds	Expansion and restructuring of LABERCA research unit	808,600 €
2012	CPER	The Construction and Procurement of Equipment for New Autopsy Room	1,326,000 €
2012	own funds + local communities	Creating facilities and equipment of Biopractis training center	810,000 €
2013	CPER	Expansion of Boisbonne center	1,623,944 €
2013	own funds + General Council	Creating facilities and equipment of Virtual Vet teaching room	207,700 €
2014	CPER	Creation and equipment of experimental surgery space	1,680,000 €
2014	CPER	Construction and equipment of an radiotherapy platform	1,020,000 €
2014	CPER	Rehabilitation of a part of a building destined to the grouping of several research units and to the development	2,000,000 €

of Man-imal program			
2014	Own funds + campagny Chair + corporate philanthropy	Expansion and creating facilities of the VTH welcome area	325,500 €
2015	Regional Council	Construction and equipment of facilities dedicated to Equine Emergencies [work in progress]	2,500,000 €

### ● Maintenance of buildings

The State supports multi-annual investment programs under the accessibility for persons with disabilities, health and safety of persons and goods. As agricultural higher education institutions, Oniris submits several projects of building restoration each year during an interview of management. For example, the school received € 200,000 in 2013.

At the same time, Oniris finances on its own funds more than € 1 million per year to ensure the maintenance and the complying with standards for buildings. A multi-year investment plan is prepared by the secretariat-general. It takes into account the proposals made by technical experts in health and safety and department heads.

## 3.1.2 INFORMATION ON EXTRA INCOME

In addition to recurring revenues perceived through its allocations, Oniris has exceptional revenue sources. They comprises company chairs and the financing of the region for the equine regional innovation platform .

### ● The company chairs:

#### ●● The « Oniris/Crédit Agricole » Chair:

Oniris and the Crédit Agricole Atlantique Vendée bank share a strong interest in food supply chain and for public expectations in Health and Food. They decided to create a company chair to contribute to the development of actions in this area.

This chair (80,000 € per year for 4 years), includes the following actions:

- The education by financing targeted supervised practice trainings to Oniris students,
- Grants to facilitate international mobility,
- The financing of equipment allowing the development of research in Health and Food,
- The support to share knowledge in Health and Food domains through an annual meeting with academics, researchers, companies and institutional representatives around a societal issue.

#### ●● The « Ecologically Intensive Agriculture » Chair (AEI):

Three cooperatives (Agrial, Terrena et Triskalia) and three prestigious schools (Oniris, Agrocampus Ouest de Rennes, ESA d'Angers) have decided to create a chair dedicated to the Ecologically Intensive Agriculture at the heart of the first agricultural production area in Europe. The three cooperatives invest more than EUR 1 million over 5 years to financing of education and research programmes developed within the three schools.

In operation since 2012, this chair has for main objectives:

- to contribute to train the current and future agricultural stakeholders, farmers and employees to Ecologically Intensive Agriculture,
- to develop a strong research on AEI innovation.

#### ●● « Oniris/Hill's » Chair:

Oniris and Hill's created in 2012 a company chair « for education and research in preventive and clinical nutrition for pets » (about EUR 100,000 pear year and for 5 years). This decision was in line with the conclusions of 2010 general assemblies of health and in particular the objective defined in the axis 2: « «To modernize and adapt the content of teaching to open up new career prospects for veterinarians ». To achieve this objective, actions have to be implemented by the French National

Veterinary Schools. These actions are even more efficient as they are constructed and conducted with the sector professionals concerned.

The major objectives for this chair are:

- To strengthen the Medicine-Nutrition complementarity for healthy or sick pet,
- To professionalize the education of veterinary students, including the setting up of courses in clinic communication.
- The construction of an equine Regional Innovation Platform (RIP) funded by the Pays de la Loire Region, finalizing our «International Center for Horse Health.».

The horse plays a major role in the Pays de la Loire Region. An important economic activity has grown around the equine industry. It involves breeding, equestrian sports, horse racing and tourism. The Pays de la Loire Region has an almost unique position as it concentrates all these activities and training centers.

The Region has decided to finance the installation of an equine regional Innovation platform. This new structure is continuing the investments made by the establishment since 2004 which allowed it to position as a major stakeholder in the training of equine veterinarians.. The RIP expands the Oniris offer towards the equine sector. On the medical level, Oniris has a full cancerology technical platform consisting of an emergency department and intensive care unit, an orthopaedics and orthopaedic Surgery centers and an equine reproduction center with a stallion station.

## OTHER INFORMATIONS

In accordance with the requests of Annex III, we also identify in this chapter the incomes received by Oniris as financial and organizational program manager and which go towards other organizations on the one hand, and the other a state of tuition fees for student.

### ● Retransfers to other organizations

The school is coordinator of the program called Manimal. As such, it cashes 100% of the funding provided by National Research Agency (ANR). The establishment then in turn pays out to the other partners in compliance with agreement signed with the Nantes and Angers universities and ESA. Transfers from the fund have represented EUR 412,000 in 2013 and allow to explain part of the significant increase in revenue and expenditure of core education in the school budget since 2012.

### ● Tuition fees

The institution receives tuition fees paid by students. The amounts are determined by the line ministry and they differ depending on the curriculum followed by the student. Therefore, the tuition fees for the 2012/13 school year were EUR 2,074 and EUR 1,450 for the veterinarian and food science students, respectively. These revenues accounted for € 1,560,209 in 2013.

The grant holder students represent 40% of students enrolled for the 2012/2013 school year. The scholarships are paid by the State to Oniris which in turn pays out to students three times a year. The scholarships given for only one academic year under precise conditions indicated in ministerial circular. The resource ceilings for entitlement to higher education fellowships on social grounds are approved by an order of the State published annually in the Official Journal of the French Republic.

The students who receive higher education fellowships on social grounds are exempt from tuition fees and social security expenses (€ 207). Half of the exemptions is offset by a State grant to Oniris, the other half from Oniris own funds.

The grant holder students on social grounds: 2012-2013 academic year (The students enrolled in internship are exempt only tuition fees. They pay student social security expenses

Year of study	Number of students enrolled	Number of grant holder students	Number of students exempted	Number of students non-exempted
1 <sup>st</sup> year	127	54	54	73
2 <sup>nd</sup> year	113	47	47	66
3 <sup>rd</sup> year	125	55	55	70
4 <sup>th</sup> year	113	43	43	70
5 <sup>th</sup> year	111	44	44	67

Internals	16	0	16	0
<b>TOTAL</b>	<b>605</b>	<b>243</b>	<b>259</b>	<b>346</b>

### 3.1.3. OVERVIEW INCOMES (REVENUES) AND EXPENDITURES

**Table 3.1: Incomes (Revenues)**

YEAR		STATE					
		ASSIGNED OUTSIDE OF THE SCHOOL		ASSIGNED DIRECTLY TO THE SCHOOL			
2009		NON APPLICABLE		3,631,793.44			
2010		NON APPLICABLE		5,468,839.93			
2011		NON APPLICABLE		5,056,966.52			
2012		NON APPLICABLE		5,030,396.91			
2013		NON APPLICABLE		4,951,430.41			
YEAR		ONIRIS					
		OTHER COMMUNITIES	APPRENTICESHIP TAX	TUITION FEES FOR STUDENTS	INCOME FROM CONTINUING EDUCATION		
2009		2,867,677.70 €	77,624.36 €	685,503.71 €	816,865.68 €		
2010		2,697,291.42 €	481,469.23 €	1,413,985.00 €	770,579.54 €		
2011		3,112,658.94 €	467,135.72 €	1,696,032.00 €	796,218.49 €		
2012		5,006,275.70 €	530,556.02 €	1,461,860.00 €	903,240.82 €		
2013		4,659,706.10 €	534,118.44 €	1,560,209.00 €	868,208.87 €		
YEAR		ONIRIS				TOTAL	
		CLINICAL ACTIVITIES	ANALYSES	RESEARCH	OTHER RESOURCES	AMORTIZATION	
2009		1,731,595.27 €	3,303,598.56 €	1,199,044.92 €	1,326,718.71 €	1,221,100.48 €	16,861,522.83 €
2010		1,747,229.59 €	3,429,407.33 €	3,120,925.48 €	1,335,068.71 €	2,322,628.09 €	22,787,424.32 €
2011		2,011,267.60 €	3,496,713.24 €	3,488,101.57 €	1,292,375.84 €	2,200,358.08 €	23,617,828.00 €
2012		2,063,019.43 €	3,275,993.66 €	2,997,750.06 €	1,640,487.29 €	2,161,036.11 €	25,070,616.00 €
2013		2,161,972.02 €	3,305,760.66 €	3,037,196.65 €	2,160,349.64 €	2,111,923.21 €	25,350,875.00 €

Table 3.2: Expenditures

YEAR	WAGE BILL	EXCLUDING WAGE BILL		
		TEACHING SUPPORT	RESEARCH SUPPORT	HOSPITAL SUPPORT
2009	4,348,778.99 €	920,702.16 €	2,895,882.97 €	1,295,268.46 €
2010	6,194,521.45 €	1,241,819.09 €	3,191,792.84 €	1,329,178.29 €
2011	6,995,478.37 €	1,382,771.58 €	3,220,679.10 €	1,491,306.45 €
2012	7,666,945.91 €	2,042,517.28 €	3,643,086.16 €	1,450,085.04 €
2013	8,409,061.43 €	2,411,348.08 €	4,452,271.07 €	1,464,361.91 €
EXCLUDING WAGE BILL		TOTAL		
	ANALYSES	ADMINISTRATION	HOSPITAL SUPPORT	
2009	1,814,292.02 €	4,346,005.70 €	15,620,930.30 €	
2010	1,730,223.78 €	7,202,647.99 €	20,890,183.44 €	
2011	1,938,068.06 €	7,460,337.37 €	22,488,640.93 €	
2012	2,101,480.21 €	8,183,350.35 €	25,087,464.95 €	
2013	2,119,104.80 €	7,249,144.36 €	26,105,291.65 €	

## 3.2 COMMENTS

### ● Impact of reduced state grant

The decrease in State grant for education represents about 2% that is € 105,000 between 2011 and 2013. This decrease is even more problematic as it is concomitant with the increase in the *numerus clausius* students which will lead to the hosting of 100 additional students on Oniris site within 4 years.

At the same time, since 2011, the State does not reimburse it parts of tuition fees of grant students on social grounds, the other half always remaining in charge of Oniris. This amount represents about € 300,000 per year.

Oniris leads a policy of its streamlining spending to compensate as much as possible the decrease of resources by limiting the use of contract staff to replace staff on maternity or sick leave. The payroll is the main item of expenditure (32% of operating expenses).

### ● Autonomy and financial flexibility

As stated in Section 3.1.1, the school enjoyed broad financial autonomy. Thus, the establishment is free to fix its tariffs, to decide services to provide and to choose the investments to make. Since 2011, its autonomy is reduced for the recruitment of contractual agents. Indeed, this number is limited even if the establishment finances permit it.

In terms of flexibility, the school is subject to public accounting rules. These rules impose it to approve the original budget but also the supervised use of funding called « targeted » for a particular expenditure (eg « health and safety » investment credits delegated by the state). , Finally, the school can't rely on debt financing through banks

### ● Levy rate from services

The executive board approves the authorized levy rate on the resources provided by services and research activities conducted in the school. The financial resources generated are mutualised and used for the functioning of support such as Secretariat-General, the research and doctoral studies department, the international relations department, etc.



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### 3.3 SUGGESTIONS

To limit the impact of current budgetary constraints, several actions are carried out by the establishment to increase incomes, to achieve economies in running the facilities and to strengthen legal and accounting security:

For the increase in revenues, the school support may be sought:

- With local public institutions (General Council, Nantes Métropole ... e.g. for equine emergencies)
- With private partners, by contract or by the development of company chairs. Some new chairs may still be studied.

Moreover, Oniris wants to amplify its active approach to collecting the apprenticeship tax from agrifood and pharmaceutical businesses, Oniris suppliers, former students and colleagues.

The operating costs economies are expected by the strengthening of management tools:

- The strengthening of analytical accounting to refine the cost calculations and to review the prices for the services . New evaluation models for business activities are being established for the direction and departments. Parallel to these new models, an enhancement is performed on those that already exist.
- An internal accounting and financial control plan aiming to renovating financial and accounting procedures and processes will be implemented,

Implementation of a quality approach: This work should lead by 2016 to an optimization of services provided to students, staff and users, while controlling operating costs by pooling resources.

# CHAPTER 4





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## CURRICULUM

## 4.1 FACTUAL INFORMATION

In France, veterinary studies last at least seven years. The first two years (Semesters S1 to S4) are out from veterinary schools and conducted in specific classes «the preparatory classes at the national entrance examination to french agronomic and veterinary schools». They take place in about 50 high schools. The next five years are performed in French veterinary schools, in accordance with the Ministerial Decree of 20 April 2007 (Appendix 4.1).

The program of the five-year veterinary curriculum is shown schematically in Appendix 4.2. Each academic year corresponds to 60 credits (related to the European Credit Transfer System):

- four years for the core curriculum (eight semesters: S5 to S12). A student who has succeeded in the four years receives the master's degree (DEFV):
  - o preclinical sciences (S5, S6 and one part of S7): biology of healthy domestic animals; livestock farming methods; searches for information, in particular scientific and critical analysis of the data collected,
  - o clinical sciences (end of S7, S8, S9 and S10) involving clinical diseases of individual animals and populations, food quality and safety,
  - o clinical rotations in the hospitals of the school (VTH) (some S9 and S10 mornings and S11-S12). In S11-S12, these rotations are divided equally between herd animals and veterinary public health, on the one hand, and pets and horses, on the other.
  - o professional knowledge: professional ethics, professional legislation, economics, management, communication (especially clinical communication) are taught all over the first four years, with a continuum for example for clinical communication from 1<sup>st</sup>Y to 4<sup>th</sup>Y.
- one deepening ("pre-specialized") year (semesters S13-S14) which, once completed, authorizes the student to defend the veterinary doctoral thesis. Students have a choice between: veterinary public health, research (Master II), industry (professional masters), Small Animals (SA), Equine (Eq) and Production Animals (PA). Some additional professional knowledge courses are held during the 5<sup>th</sup> year (SA, Eq and PA), especially in marketing. Students are also taught in radioprotection competencies at the beginning of the 5<sup>th</sup>Y.

The curriculum in Oniris meets the objectives defined in the national curriculum (Appendix 4.3) defined by the Ministry of Agriculture. The general program objective is to train veterinarians responding to the needs of society in animal health, welfare and public health.

There is a degree of freedom, not to change the curriculum, but to adapt it to Oniris (Appendix 4.4 and 4.5). Within the Faculty, decisions on course contents and name, allocation of hours and ECTS credits between the various subjects, balance between theoretical and practical teaching and choice of the pedagogical methods result from discussions and votes in many councils: development council (CP) for the veterinary curriculum, then board of studies and student life council (CEVE), then Teacher Council (CE) and then executive board (CA).

All trainings enable veterinarians to acquire skills, knowledge, competencies, people skills and attitudes described in the national degree standard. The Faculty has developed a professional knowledge and skill acquisition program in order to prepare students for the wide range of veterinary profession careers. The main objective of the Faculty is to give to students the knowledge base, the clinical skill set and the communication and interpersonal skill sets in order to form high level biologists and pathologists both by clinical formation and research. The new generation of veterinarians will be able to continue to learn throughout their lives and possibly change professional paths during their careers. About 10% of the courses are given in english language.

In recent years, some subjects have been developed in particular, such as education on animal welfare, professional ethics or other competencies necessary for professional practice (clinical communication, accounting, management, radiation protection, etc).

The veterinary college has an emphasis on international education, requiring students to study English and to spend time abroad as part of their curriculum. So, an externship abroad (min. 6 weeks) is mandatory for all our students as our aim is to train vets able to perform at an international level and with a good mastery of English. Many of them wish to have a professional experience in the US in a veterinary college. Students are also keen on continuing as interns or residents.

#### 4.1.1 POWER OF SUBJECTS AND TYPES OF TRAINING

##### 4.1.1.1 Power of subject

All the subjects in Oniris are “core” subjects, except for an “elective” training in english which is selected by students in a list of permissible subjects. Externship trainings are also mandatory.

#### 4.1.1.2 TYPES OF TRAINING

##### Supervised practical training

Table 4.1: General table of curriculum hours taken by all students (from 1<sup>st</sup>Y to 4<sup>th</sup>Y, including final graduation thesis)

Year	Hours of training							Total
	Theoretical training			Supervised practical training			Other Thesis (G)	
	Lectures (A)	Seminars (B)	Self Directed learning (C)	Laboratory and desk based work (D)	Non-clinical animal work (E)	Clinical work (F)		
First	220	53	46	299	70	0	0	688
Second	267	26	80	238	49	4	0	664
Third	349	33	33	158	41	116	0	730
Fourth	48	18	27	118	79	1014	0	1304
Fifth*	0	0	0	0	0	0	840	840
Six	NA	NA	NA	NA	NA	NA	NA	NA
<b>Total</b>	<b>881</b>	<b>130</b>	<b>186</b>	<b>813</b>	<b>239</b>	<b>1134</b>	<b>840</b>	<b>4226</b>

\* Depending on the choice (see table 4.1bis below) except for the 840 h of final graduation thesis

Table 4.1bis: Table of curriculum hours taken by students in 5<sup>th</sup>Y, except final graduation thesis which is taken by all students

Year	Hours of training							Total
	Theoretical training			Supervised practical training			Other (G)	
	Lectures (A)	Seminars (B)	Self Directed learning (C)	Laboratory and desk based work (D)	Non-clinical animal work (E)	Clinical work (F)		
Companion Animals	99	0	0	0	0	986		1085
Production Animals <sup>a</sup>	170	135	35	70	35	395		840 <sup>b</sup>
Horses	175	32	0	0	90	665		962
Public Health and Environment	100	740	0	0	0	0		840
Research <sup>c</sup>								

a: in Nantes, the final 5th year of the curriculum in the production animals track “Livestick” is mainly devoted to ruminant production and especially cattle. Nevertheless, for those students who would like to emphasize some aspects in other species, an adaptation of the program is possible with a similar schedule applied either on poultry or swine.

b: 48 weeks and 4 weeks of holidays, 35h of work per week; 50% of the curriculum in the 5th year in animal production is devoted to the “Veterinary thesis”: 6 months research project (similar to research project of Msc)

c: depending of the Master.

### 4.1.2. UNDERGRADUATE CURRICULUM FOLLOWED BY ALL STUDENTS

#### 4.1.2.1 CURRICULUM HOURS

Table 4.2: Curriculum hours in EU-listed subjects taken by each student

Hours of training								
Subject	Theoretical training			Supervised practical training			Other	Total
	Lectures (A)	Seminars (B) learning (C)	Self Directed and desk based work (D)	Laboratory animal work (E)	Non-clinical work (F)	Clinical (G)		
1. Basic Subjects								
a) Physics								0
b) Chemistry			6					6
c) Animal biology	1							1
d) Plant biology								0
e) Biomathematics	2	3	4	27				36
<b>Total n° hours</b>	<b>3</b>	<b>3</b>	<b>4</b>	<b>33</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>43</b>
2. Basic sciences								
a) Anatomy (incl. histology and embryology)	45		8	44	58			155
b) Physiology	22	2	6	46	12			88
c) Biochemistry, cellular and molecular biology	4	20	8	32		1		65
d) Genetics (incl. molecular genetics)	15		12	8				35
e) Pharmacology and Pharmacy	37	16	15	44	16			128
f) Toxicology (incl. environmental pollution)	14		4	21		4		43
g) Microbiology (incl. virology, bacteriology and mycology)	38			42				80
h) Immunology	20		5	24		2		51
i) Epidemiology (incl. scientific and technical information and documentation								

methods)	13	14	4	27	4		62	
j) Professional ethics	21		4	8	2		35	
Total n° hours	229	52	66	296	86	13	0	742
3. Clinical sciences								
a) Obstetrics	36	0	7	4	2	3	0	52
b) Pathology (including pathological anatomy)	45	0	0	32	56	2	0	135
c) Parasitology (including dermatology)	71	3	2	71	0	65	0	212
d) Clinical medicine and surgery (incl. anesthetics and intensive care)	182	3	20	39	32	547	0	823
e) Clinical lectures on various domestic animal, poultry and other animal species incl.	0	0	0	0	0	0	0	0
f) Field veterinary medicine (ambulatory clinics)	0	0	0	0	0	35	0	35
g) Preventive medicine	11	5	4	14	0	67	0	101
h) Diagnostic imaging (incl. radiology)	30	0	0	0	0	57	0	87
i) Reproduction and reproductive disorders	34	0	34	0	0	102	0	170
j) Veterinary state medicine and public health	12	8	1	17	0	0	0	38
k) Veterinary legislation and forensic medicine	18	0	3	28	0	6	0	55
l) Therapeutics	3	2	0	7	0	85	0	97
m) Propaedeutics (incl. laboratory diagnostic methods)	39	6	10	31	36	56	0	178
Total n° hours	481	27	71	263	116	1025	0	1983



## 4. Animal production

a) Animal production	5	0	0	6	0	0	0	11
b) Animal nutrition*	54	28	0	18	0	14	0	114
c) Agronomy	0	0	0	0	0	0	0	0
D) Rural economics	8	0	0	11	0	2	0	21
E) Animal husbandry	11	0	2	21	0	19	0	53
f) Veterinary hygiene	3	0		7	0	4	0	14
g) Animal ethology and protection	10	0	1	2	2	0	0	15
<b>Total n° hours</b>	<b>91</b>	<b>28</b>	<b>3</b>	<b>65</b>	<b>2</b>	<b>39</b>	<b>0</b>	<b>228</b>

\*Including nutrition in companion animals, horses and production animals, proximate analysis and feed composition/nutrition values

## 5. Food hygiene/Public Health

a) Inspection and control of AF or FAO and the respective feedstuff production unit	9	3	10	15	23	2	0	62
b) Food hygiene and technology	20	0	13	6	2	0	0	41
c) Food science incl. legislation	11	1	17	4	0	0	0	33
d) Practical work (incl. in places where slaughtering and processing of foodstuffs take place)	1	4	0	5	10	0	0	20
<b>Total n° hours</b>	<b>41</b>	<b>8</b>	<b>40</b>	<b>30</b>	<b>35</b>	<b>2</b>	<b>0</b>	<b>156</b>

## 6. Professional knowledge

a) Practice management	10	10	0	6	0	8	0	34
b) Veterinary certification and report writing	3	0	2	4	0	39	0	48
c) Career planning and opportunities	0	0	0	0	0	0	0	0
<b>Total n° hours</b>	<b>13</b>	<b>10</b>	<b>2</b>	<b>10</b>	<b>0</b>	<b>47</b>	<b>0</b>	<b>82</b>



Table 4.3: Curriculum hours in EU-listed subjects offered and to be taken as electives

Hours of training								
Subject	Theoretical training			Supervised practical training			Other (G)	Total
	Lectures (A)	Seminars (B)	Self Directed learning (C)	Laboratory and desk based work (D)	Non-clinical animal work (E)	Clinical work (F)		
1. Basic subjects								
Upgrading in english			10	10				
Cambridge exam B2 level				18				
Oral training in english				15				
TOEFL English				15				
Personal project (english and another languages)		20						
Internship in English-speaking countries		20						
Spanish level 1				20				
Spanish level 2				20				
Certificate Spanish B2 DELE					20			
2. Basic sciences								
3. Clinical sciences								
4. Animal production								
5. Food hygiene/Public health								
6. Professional knowledge								

Table 4.4: Curriculum hours in subjects not listed in Table 4.2 to be taken by each student, including Diploma work (final graduation thesis or final graduation work)

Hours of training								
Subject	Theoretical training			Supervised practical training			Other (G)	Total
	Lectures (A)	Seminars (B)	Self Directed learning (C)	Laboratory and desk based work (D)	Non-clinical animal work (E)	Clinical work (F)		
Clinical pathology	8	0	0	12	0	0	0	20
Clinical communication	6	0	0	4	0	8	0	18

Health economy	1	0	0	8	0	0	0	9
Environment and health	11	2	0	2	0	0	0	15
English	0	0	0	90	0	0	0	90
Final graduation thesis	0	0	0	0	0	0	840	840
<b>Total</b>								
<b>n° hours</b>	<b>26</b>	<b>2</b>	<b>0</b>	<b>116</b>	<b>0</b>	<b>8</b>	<b>840</b>	<b>992</b>

#### 4.1.3 FURTHER INFORMATION ON THE CURRICULUM

##### ● Highlights and any unusual or innovative aspects of the program

- Courses, in the presence and the absence of faculty members, of basic technical gestures on inert models and manikins in two dedicated rooms (see 5.1.1)
- A modernization of the learning methods, in particular in histology and anatomy, based on learning using reading software for scanned glass slides and the 3D dog anatomy developed with private partners.(see 5.1.)
- Courses in clinical communication since 2013 (see Chapter 7).
- An identified CU of professional ethics (29 hours of teaching per student)
- An identified CU of “management, accounting and human resources” (22 hours of teaching per student)
- Courses in aquaculture and fish diseases (10 hours of teaching per student)
- Courses in wild fauna (a clinical sequence in 4<sup>th</sup>Y)
- Courses in beekeeping (6 hours of teaching per student)

##### ● Parts of the program that must be attended as obligatory and how the attendance is verified

Attendance is mandatory for any training courses and any teaching exercise, as required by academic regulations. Attendance checks are organized during tutorials, practical work and clinical rotations, and also according to the faculty member. Attendance at lectures is less controlled.

The overall information about the regulation on studies (Appendix 4.6), the rules of discipline, the school calendar and the program for each CU are issued for each school year and each graduation year, in the form of an electronic pamphlet called «Student Booklet.»

##### ● Specific information on the practical clinical training

In the 3<sup>rd</sup>Y and 4<sup>th</sup>Y, the students are integrated into clinics.

In the 3<sup>rd</sup>Y, they complete a nurse supervised practice teaching two mornings a week for 28 weeks in the following areas: medical imaging, internal medicine, exotic animals / Central Pharmacy, reproduction, surgery, preventive medicine, dermatology / parasitology / mycology.

In the 4<sup>th</sup>Y, they are into clinics every day from morning to evening for 38 weeks according to a schedule of specific rotation. The Ministerial Order of 20 April 2007 allocates the time spent by each student in 4<sup>th</sup>Y as follows: 50% in companion animals and equine and 50% in animal production and public health. Concerning the companion animals and equine, rotations are two weeks each in internal medicine, surgery, reproduction, dermatology / parasitology / mycology / animals unusual species, preventive medicine and intensive care. In equine, the duration of rotation is four weeks. For farmed animals, rotations are 1 to 6 weeks each in ruminant individual medicine, bovine population, production and pathology of monogastric, ruminant reproduction and control methods of food safety. To these specific clinical rotations must be added transverse rotations in medical imaging (1 week), necropsy (2 weeks), anesthesia / resuscitation (6 weeks), common services / Hospitality (1 week), animal poison control center (1.5 days) and wildlife (1.5 days) affecting all species. Each 4<sup>th</sup>Y student realizes on-call for the

emergency department or is standby for medical emergency duties and intensive care the evenings and weekends. Each year of study has learning objectives (knowledge, know-how and life skills) included in the student booklet and on the Moodle platform. The evaluation of clinical students is based on the achievement of these goals.

Groups are comprised between 4 and 16 students according to activities and are supervised by faculty members, assistants and hospital practitioners. Each group is supervised by at least two persons.

#### ● **Clinical exercises in which students are involved prior to the commencement of clinical rotations**

Students of 1<sup>st</sup>Y and 2<sup>nd</sup>Y participate to on-call for medical emergency duties and intensive care for 30 weeks per year. The time of students of 1<sup>st</sup>Y and 2<sup>nd</sup>Y spent for this activity varies between 5 to 7 days during each of the two years, with domestic animals in the 1<sup>st</sup>Y and with equine in the 2<sup>nd</sup>Y.

#### ● **Student involvement in the emergency and hospitalization activities of the clinics**

Students of 3<sup>rd</sup>Y and 4<sup>th</sup>Y don't perform clinical rotations to medical emergencies. Only students of 5<sup>th</sup>Y in «domestic animals» sector and students in small animal internal medicine perform a clinical rotation to medical emergencies at least three weeks. In contrast, students in 3<sup>rd</sup>Y and 4<sup>th</sup>Y participate to on-call day and night for medical emergency duties and intensive care for 30 weeks (3<sup>rd</sup>Y) or 40 weeks (4<sup>th</sup>Y). The time of students of 3<sup>rd</sup>Y and 4<sup>th</sup>Y spent for this activity is from 5 to 7 days during each of the two school years.

#### ● **Student participation in the activities of the mobile clinic (hours are included in Table 4.2)**

The mobile clinics are included in the figures given in the tables in this chapter. All 4<sup>th</sup>Y students participate and the delocalized teaching are systematically organized during each semester «farm animals»

### 4.1.4 OBLIGATORY EXTRAMURAL WORK

In the program, externship periods are planned all over the curriculum. All students must validate at least 14 weeks of externships before the beginning of the 5<sup>th</sup>Y. If they wish, students can do supplementary externships.

Each externship lasts a minimum of one week. There are generally three externship periods: a period in summer (from 2 to 8 weeks), another in autumn (1 week) and another in winter (2 weeks). These mandatory externships generally take place outside the school, except those in a research unit of the institution. One of the externships must be done abroad for at least 6 weeks.

- this abroad externship should preferably be done in an English speaking country, which is promoted by the accretion of international policies including courses in English.
- one externship, generally in 1<sup>st</sup>Y, is conducted at a ruminant operation; the main objective is to enable students, usually from urban settings, to discover a farm environment. All students have oral and written instructions in the beginning of the 1<sup>st</sup>Y.
- one externship, generally in 1<sup>st</sup>Y or 2<sup>nd</sup>Y, is conducted in a non-clinical veterinary structure; the main objective is to enable students to discover non-clinical veterinary careers such as public health, industry, research, ....
- all the other externships are freely chosen in order to take into account the professional project of the student after discussion with his academic advisor (assigned automatically for the first 4 years, he is one of the instructors in the stream in 5<sup>th</sup>Y).
- in 5<sup>th</sup>Y, the number of obligatory externships depends on choice: SA 0 week, PA 10 weeks, Equine 6 weeks, Research and public health 4-6 weeks.

Students must receive validation on all mandatory externships in order to obtain the DEFV at the end of the 4<sup>th</sup>Y. Before departure, the externship must be approved by the academic advisor of each student. After approval, the student completes and signs the training period assessment form (<http://ent-prod.oniris-nantes.fr/mod/data/view.php?id=116&mode=list&per>

page=1000&search=&sort=0&order=ASC&advanced=0&filter=1&advanced=1&f\_1895=Stages) which must be then signed by the professional, the academic advisor and administratively by the director of the veterinary education and student life (DVESL).

At the end of the externships, an evaluation sheet is completed by the professional and another one by the student (since 2014). Students were also asked to indicate whether they would recommend or not their externship. Each year, from 1 to 5 students do not recommend their externship.

The final evaluation of an externship is determined, either by an oral interview between the student and the academic advisor, or by a written report corrected by the academic advisor. All students are successful for their externships each year; nevertheless, a few numbers of students must write again an unsatisfactory report at the request of the academic advisor.

#### 4.1.5 SPECIFIC INFORMATION ON THE PRACTICAL TRAINING IN FOOD HYGIENE/PUBLIC HEALTH

Practical training in food hygiene and public health is not performed in a slaughterhouse and/or in premises for the production, processing, distribution/sale or consumption of food of animal origin. This practical training is performed at Oniris (group 9) on animal products and carcasses coming from slaughterhouses.

#### 4.1.6 RATIOS

##### ● 4.1.6.1 General indicators types of training

R6:	Supervised practical training (D+E+F)	=	2 186	1.822
	Theoretical training (A+B+C)		1 200	
R7:	Lab and desk based work + non-clinical animal work (D+E)	=	1 134	1.078
	Clinical work (F)		1 052	
R8:	Teaching load (A+B+C+D+E+F+G)	=	4 226	22.720
	Self directed learning (C)		186	

#### ● 4.1.6.2 Special indicators of training in food hygiene/public health

R9*:	Total n° hours vet. curriculum	=	$\frac{4\,226}{154}$	27.442
	Total n° curriculum- hours FH/PH			
R10*:	Hours obligatory extramural work in vet. inspection	=	$\frac{0}{154}$	0*
	Total n° curriculum- hours FH/PH			

\*\* R10 cannot be calculated because practical training in food hygiene and public health is not performed in a slaughterhouse and/or in premises for the production, processing, distribution/sale or consumption of food of animal origin. So there is no extramural work in veterinary inspection. If the number of intramural mandatory teaching hours in veterinary inspection would be taken into account, the value of the ratio R10 will be  $0/154 = 0$ .

## 4.2 COMMENTS

- The veterinary curriculum covers all the various aspects of the veterinary profession (pets, horses, production animals, public health, laboratories and research). For example, teaching in production animals takes into account that the Regions "Bretagne" and "Pays de la Loire" are the first regions for the animal production.
- The veterinary curriculum will be probably reviewed in 2015, by a committee including representatives of the four NVS.
- The major developments in the curriculum are now to improve skills by using manikins and models and in the near future, to improve knowledges by using specific softwares (e.g. in anatomy and histology) and by increasing the part of the e-learning so that a student will be a right stakeholder of his veterinary training.

We welcome English-speaking veterinary students who would like to have an externship in our Hospital. In order to promote students exchange, we offer clinical externships in which English is the primary language of communication and instruction, although French may be used if the student wishes and has the adequate level. The clinical rotations we can offer are anesthesia, small animal surgery, dermatology, small animal reproduction, emergency/intensive care. These rotations have been selected because 1) our clinicians in charge speak English fluently and are diplomates from European or American colleges and 2) there is minimal contact with French speaking companion animal owners. A French language course is organized for international students. This course will help to better integrate the student into clinical activities and intercultural activities.

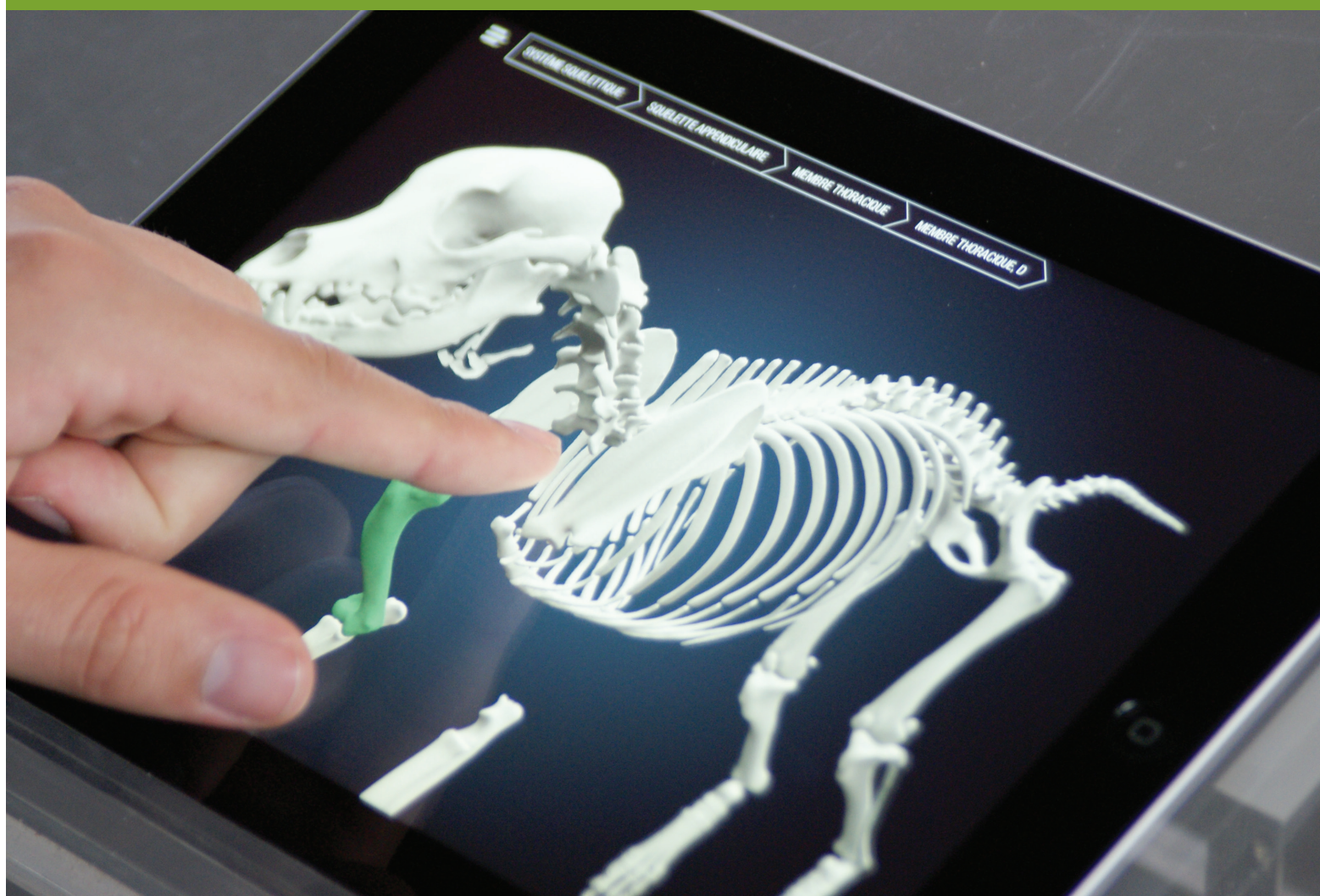
## 4.3 SUGGESTIONS

The ratio R8 is in the recommended range but it might be worthwhile to increase it a little: we could develop an action plan in e-learning (including self-training and self-learning) with clear objectives for the next three years.

About the ratio R10, if hours mandatory hours dedicated to intramural work in veterinary inspection are taken into account, the value is  $0/154 = 0$ , so it is in the recommended range. Otherwise, we can improve this ratio by having a mandatory extramural week in a slaughterhouse.



# CHAPTER 5





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## **TEACHING AND LEARNING: QUALITY AND EVALUATION**

## 5.1 FACTUAL INFORMATION

### 5.1.1 THE SYLLABUS

#### ● Measures taken to ensure coordination of teaching between different departments, sections, institutes and services

The curriculum is organized in several interdependent levels which are coordinated by the veterinary education department. Each CU is coordinated by a faculty member in charge of the unit. He (She) is not necessarily the head of teaching unit or department of education. Within each teaching unit, there are exchanges between faculty members of the discipline. This organization is coordinated within the department of education by the Department Council which brings together all the faculty members of the department as well as representatives of administrative and technical staff.

Oniris has statutorily structures that control and organize various activities. Among these structures, the teacher council, the board of studies and student life (CEVE) and the veterinary curriculum development council (CP) play an active role in the definition of programs and objectives. Each amendment proposed by the departments of education would be referred to these relevant structures. The CEVE and CP are composed of faculty members, students and representatives of the profession. For more than a year, an assembly of non-statutory veterinary teachers, only composed veterinary teachers meets under the director of veterinary training to cover topics of training in connection with the veterinary curriculum and thus prepare the statutory councils.

In addition, the two engineers and veterinary training services, coordinate to organize the interventions of research passport program (chapter 13) and afternoons dedicated to Agora program for the students of these two curriculums.

#### ● Pedagogical approach of the institution

The Oniris policy on veterinary training has evolved in the last 10 years. It is based on a modernization of teaching methods and is organized around four key areas:

- (i) The education organization in Course Units (CUs) which are mostly multidisciplinary. They involve several faculty members from different units and education departments;
- (ii) The active student participation in the construction of their learning. It is stimulated by a clear decrease (about 30%) of lectures in amphitheater. Such lectures are replaced by small working groups (directed studies and practical works), case studies included in numerous CU, the research passport (see chapter 13) which aims to train students for research and by the installation of workspaces;
- (iii) The use of new educational technologies, including the setting up of an e-learning platform Moodle. In particular, this platform includes an online space for each CU, which contains online courses and self-evaluation surveys. Similarly, Virtuoso® is a numerical tool for education dedicated to histopathology, developed by Roche Tissue Diagnostics and installed in 2013. It is composed of training sequences in the presence of a teacher and sequences of self-assessment of students. Finally, an innovative and original program for the setting up of an atlas of anatomy in 3D was initiated to be used on computer and digital tablet. It is developed in partnership with a start-up (3D4Vet) located in Nantes, an interactive designer and the three faculty members from Oniris comparative anatomy unit (entirely scanned dog in 3D to isolate a bone and rotate in 3D with angulations, interosseous spaces, etc ... which are the physiological values encountered in the canine species; edition in three languages (French, English and Latin), fun and interactive quiz).
- (iv) The learning of practical and technical know-hows, called «elementary technical operations» or «basic movements» in a modular room with free access (Virtual Vet® room open in 2014). This room is equipped with multiple workstations focused particularly on manikins and inert models (3 topics: propaedeutic and technical examination, additional tests and diagnosis, care and treatment). Over time, the student builds a « passport » of basic movements. The acquisition of these technical movements will be checked during the 4<sup>th</sup>Y upon arrival in clinical and in contact with live animals. In addition to this educational value, the interest of this learning is ethical (decrease of number of living animals used for training purposes) and economic (substantial savings upon arrival of students in hospital, particularly by saving time and



by lower costs associated with unsuccessful attempts using sterile consumables for single use only. This learning is part of a global educational project built as follows:

- In 1<sup>st</sup>Y and 2<sup>nd</sup>Y: Safely and effectively handle and restrain the major domestic species using healthy living animals; at the same time: learning of essential technical skills using the free-access platform («Virtual Vet») and the constitution of a checklist of technical skills on simulated models;
  - In 3<sup>rd</sup>Y: supervised work on living animals, animal laboratory or in the VTH during nursing training period with essential skills checklist (<http://ent-prod.oniris-nantes.fr/course/view.php?id=480>) to be completed by each student;
  - In 4<sup>th</sup>Y: exclusively devoted to clinical teaching. Students are exposed to a wide range of clinical cases, from basics to referrals via clinical rotations;
- then in 5<sup>th</sup>Y: Student must competently complete all the essential technical and clinical procedures in a reasonable time for safe and efficient professional practice.

This modernization of teaching methods will continue in the coming years:

- (i) The development of Virtual Vet®: the purchase of new manikins is ongoing (including rat, cat and cow) for 2015;
- (ii) The learning of basic and advanced know-hows in emergency and critical care in a dedicated room Virtual Critical Care®. This approach is a unique situation in Europe. It will include manikins very close to the living animal in order to simulate emergency situations and to perform adapted treatment plan. Using scenarios imagined by the faculty members, the student is placed in real situation. For example, during cardiac arrest, the student proposes therapeutic actions and implements them on the simulator as cardiac massage or medication administration. The manikins are connected to monitoring device used in resuscitation as well as a critical care ventilator; this configuration makes it possible to also acquire of sound knowledge in artificial ventilation. Indeed, it is a difficult situation where the ventilation involves the patient breathing time to revive it. The room dedicated to these simulations is divided into two sectors. The first is devoted to resuscitation where technical acts are performed. Therapeutic strategies are taken by groups of 3 students with an instructor (room equipped with 4 cameras focusing on the patient, the applied technical gestures, the monitoring devices). An adjoining sector has a large screen divided into 4 screens that transcribe the scene resuscitation taken by the four cameras to enable the rest of the group (6 students) to follow.
- (iii) The realization of joint courses in preclinical and paraclinical disciplines for students in human and veterinary medicine. This initiative should be operational in 2014-2015 and is part of the pole of Decpartmentalised Health established in Nantes (Oniris, Nantes medicine faculty, Nantes pharmacy faculty). It is based on the concept of «One World, One Health» for which Oniris pilots the MAN-IMAL program (see box n°2).

This pedagogical approach is based on modern tools: building specially constructed to give students free access to rooms equipped with computers connected to the high-speed internet and with Virtuoso®, amphitheatres, tutorial and practical rooms equipped with projectors and also with a socket to connect the teacher laptop to Internet, a tutorial room equipped with a videoconferencing, room Virtual Vet® ...

#### **Box n°2: MAN-IMAL**

MAN-IMAL is a pioneering French training programme based on the «One World, One Health» concept promoted by the WHO, FAO and OIE. In order to insure a transdisciplinary approach, the MAN-IMAL programme is constructed in close cooperation with:

- Oniris, the Nantes-Atlantic National College of Veterinary Medicine, Food Science and Engineering,
- The Faculties of Medicine at the universities of Nantes and Angers
- The Ecole Supérieure d'Agriculture (The ESA Group) at Angers.

The MAN-IMAL programme was created in response to a change in society. Today's production systems and interface management of animal-man-food have demonstrated to be vulnerable and insufficient due to a lack of shared training between the professionals who have a major role to play in public health and food safety. This is reflected by the health crises that have emerged over the past ten years, as well as by the new food production challenges linked to insuring health within the context of food sufficiency.

MAN-IMAL offers both core training for future professionals and continuing education for managers and technicians. The aim is to prepare our students for the team work necessary to take on international public health challenges.

The programme distinguishes itself by the multidisciplinary nature of the teaching involved, its international approach and the use of innovative learning methods. Students from different backgrounds learn to work together, in order to acquire the same shared culture as well as to share their specific expertise. The MAN-IMAL training programme is intended for doctors, pharmacists, veterinarians, agricultural or food-processing engineers, agronomists and biologists. The current degree programmes available are a 2-year Master offering advanced or additional skills and an expert level for PhD students.

● **Extent to which course notes are used to supplement or substitute for the use of standard textbooks.**

Oniris has an efficient reprography department which publishes all handouts distributed for free to students, enabling to cover the majority of the program.

● **Established or contractual arrangements that support undergraduate teaching between the Faculty and outside bodies**

Different agreements have been made with partnerships to improve the core curriculum. This may involve all students or only some of them. The persons involved in the education of all students are:

- Many veterinarians in Pays de la Loire region for the organization of education related to animal production and for Hospital supply in various cases in cattle,
- several farm partners who regularly host students and faculty members for field work (analysis and tracking livestock, individual or collective pathology, reproduction monitoring),
- slaughterhouses,
- collective catering centres,
- The equestrian center of Mazerolles for the training of all students to approach the horse,
- The National Equestrian School of Saumur,
- Many veterinary pharmaceutical laboratories, for visits and the organization of training exercises together.

Other agreements concern only some of them:

- The three other French veterinary schools, for some aspects of upper secondary education, especially for the organization of dominant features of the third professional course (short-term),
- Many international veterinary schools for student exchanges,
- And the University of Nantes.

● **General learning objectives underlying the veterinary curriculum and how this is ensured**

This program ensures that diplomates: (1) know the morphological and physiological characteristics that define a healthy animal and pathophysiology; (2) know all the mechanisms of production, processing and marketing of food for humans and animals; (3) can ensure animals or animal population health, including diagnosis, treatment and prevention of disease; (4) can manage, prescribe, administer, supervise administration, prepare and dispense drugs in accordance with the objectives of public health and animal health; (5) can ensure safety and quality of animal based feed and animal food, prevent zoonotic diseases, protect the environment, contribute to the advancement of comparative medicine; (6) apply best professional practices and ethics; (7) are aware of ethical responsibilities of veterinarians relating to care for an animal, any other professional activities as well as relations with client. This is ensured by the examination system (5.1.3).

● **How the Faculty collects the data required to ensure students are equipped with these Day-one skills**

A complete description of the objectives of all courses and clinical rotations as well as the competencies and skills required for entry level veterinarian can be found in all the student booklets and in the Moodle Platform according to the national professional standards (Appendix 4.3). Within the School, decisions on course contents and name, allocation of hours and ECTS credits among the various topics, balance between theoretical and practical teaching and choice of the pedagogical methods result from discussions and votes in many councils: CP of veterinary curriculum, then CEVE, then CE and then CA. The

results of the examination system (see 5.1.3) ensure that students are equipped with these Day-one skills. So, the assessment of veterinary student performance in mastering the curriculum is measured by individual faculty members through objective testing instruments in the didactic portion of the curriculum and by direct observation during the clinical assignments. The « day-one skills » in clinical domain are assessed over the past three years and are tackled from knowledge and know-how.

### 5.1.2. THE TEACHING ENVIRONMENT

#### ● The available staff development facilities (particularly in relation to teaching skills)

The school has three services: service in support of Educational, Research And Communication called "SAPREC" (see Chapter 8), IT department (see Chapter 8) and human resources department.

Students have access to the «Student Area» website <http://ent-prod.oniris-nantes.fr> with a password. It provides full information about the academic calendar, program regulations, registration, payment of tuition and medical assistance, educational programs, schedules, lists and groups of students, exam schedules, room schedules for each course. It also provides access to the Orientation Handbook (which is a guide for new students) and the platform where the online courses can be found. The site also provides all the forms that students have to fill out and everything they have to do for their supervised practice teaching, thesis, in case of absence and travel.

The human resources department is conducting ongoing training sessions.

Training sessions on various aspects of education, communication, and management are included in the course catalog. The French national veterinary school of Nantes was notably the first to propose, in 1998, a course for faculty members. This course was financed on an experimental basis by the line ministry. It was about 15 hours of training, a little more than three weeks over a year. All aspects of the educational process were covered: the analysis of the training needs, the definition of learning objectives, the cognitive psychology, the teaching methods and the assessment. This training was extended to national level to all higher education establishments of the Ministry of Agriculture in 2001. 25 faculty members participated in this course at the French national veterinary school of Nantes then Oniris.

#### ● The available systems for reward of teaching excellence

There is currently no establishment's device to recognize and reward faculty work.

Nevertheless, each faculty members writes a quadrennial report of activity. This report is submitted when a faculty member applies for a promotion). Similarly, when a professor position is open to internal promotion the eligible assistant professors are evaluated by an internal commission. The ranking is based on a grid which takes into account all the activities performed by the applicants.

#### ● Other measures taken to improve the quality of teaching and of learning opportunities

The school was one of the first to set up a device of teaching evaluation by the students over 20 years ago. The assessment is conducted by the board of studies and student life (CEVE) and is based on a grid which has been improved over the years. All free qualitative assessments given by the students and all quantitative information from this assessment are made public in the establishment via the Moodle platform since 2010 (see 5.1.4).

### 5.1.3 THE EXAMINATION SYSTEM

The examination system is described in the studies regulation which is voted by CEVE, IC and AC. A compulsory examination session (1<sup>st</sup> session in January for the 1<sup>st</sup> semester and in June for the 2<sup>nd</sup> semester) is organized for each CU (course unit) taught during the semester. The 1<sup>st</sup> and 2<sup>nd</sup> sessions are preceded by a period of revision of one week. A remedial session (2<sup>nd</sup> session In August) is held before the next academic year for students who have not obtained all the 60 annual credits. There are no external examiners; nevertheless, in the remedial session, results in each CU are submitted to the advice of a teacher

who did not participated in the teaching of the CU.

Depending on the CU, students undergo an examination that may be completed by a continuous evaluation during the semester. Examinations and evaluations may consist of:

- theory tests (written and/or oral and/or by computer) if possible with a strong focus on reasoning,
- practical or clinical tests with a focus on competency evaluation,
- drafting and presentation of papers or reports in front of student groups, focusing on case analysis.

In 1<sup>st</sup>Y, 2<sup>nd</sup>Y and 3<sup>rd</sup>Y, each examination and each evaluation results in the assignment of a numerical grade. The grade scale is zero «0» to twenty «20». In 4<sup>th</sup>Y, each evaluation is done by a non-numerical method: “A” for competencies fully acquired and “F” for non-acquired competencies. Credits corresponding to a CU are assigned if the grade for the CU is greater than or equal to 10/20 (Appendix 5.1).

At each Examination Commission (director of the veterinary education and student life and each responsible of CUs and clinical rotations), a comparative evolution of the results of different cohorts is presented:

- special attention is paid to students’ results in 1<sup>st</sup>Y. Students who have failed at least 4 CU are called in by the director of the veterinary education and student life to discuss the reasons for the poor results.
- analysis of annual results, particularly the number of CUs failed for each class and analysis of changes in the percentage of students admitted to the remedial session.

Students who have acquired 60 credits are admitted to the advanced year. Students in 4<sup>th</sup>Y also receive a Diploma of Fundamental Veterinarian Studies (DEFV) which gives them the right to work as an assistant in a private veterinary clinic (under supervision).

Students with a grade of less than 10/20 or “F” for one or more CUs need to take the corresponding remedial session exams. Students who have not passed their supervised practice teaching do a new supervised practice teaching during the summer vacation, before the start of the next academic year.

In 4<sup>th</sup>Y, very few students attend the second remedial session. If a student does not pass a clinical rotation, he must repeat it during the month of July.

A student can take only one remedial session per CU and per supervised practice teaching for a single academic year. At the end of the remedial session, the results are examined by the Examination Commission (which includes 2 representatives of the students per year) and then by the CE. Students who, at the end of the remedial session in 1<sup>st</sup>Y, 2<sup>nd</sup>Y and 3<sup>rd</sup>Y, have not validated more than two CUs and are authorized by the CE to repeat, retain the earned CUs. At the end of the 4<sup>th</sup>Y, students must have passed all the CUs, the clinical rotations and the externships without any exception. If the student is authorized to repeat, an education agreement is drawn up by the director of the veterinary education and student life with agreement by the student and the academic advisor. The contract, signed by the student and the academic advisor, mentions:

- the CU (or CUs) failed that the student must take and pass,
- supervised practice teaching to be completed,
- a few CUs and/or supervised training in the VTH for the higher year to be taken and passed in advance, taking into account the course sequence.

Each year can be repeated only once (Article 9 of the Order of 20/04/07 in appendix 6.2). The exclusion of a student is decided by the Executive Director, after proposal by the CE.

### Special case of 5<sup>th</sup>Y

For Industry, Research and Veterinary Public Health streams, passing 5<sup>th</sup>Y is achieved by passing the year in the corresponding academic institution.

For each pure clinical track, the procedure is determined by the head of each track at the beginning of the academic year. The jury of each track (pets, equine and animals production) is made up of instructors from the stream.

Every year in June, the list of students who have not passed 5<sup>th</sup>Y and who are authorized to attend the remedial session and the list of students who have passed 5<sup>th</sup>Y and are authorized to defend their veterinary doctoral thesis is validated by the CE. In 5<sup>th</sup>Y, it is rare for a student not to pass the first session. If a student does not pass a clinical rotation, he repeats it during July; if he does not pass an extramural supervised practice teaching, he repeats a supervised practice teaching during the summer. If

he does not pass the examination of theoretical knowledge in 5<sup>th</sup>Y SA or Eq, he takes the remedial session examination. No students repeat 5<sup>th</sup>Y, with an exception in 2011 for 1 student. Only students who have passed the 5<sup>th</sup>Y examinations are authorized to defend their thesis for the State degree of Doctor of Veterinary Medicine. For 5<sup>th</sup>Y students, quotation of the evaluation is done by a non-numerical method: "A" for competencies fully acquired and "F" for non-acquired competencies.

#### ● Doctor of Veterinary Medicine Degree (professional thesis).

This degree is conferred to a student after defense of a thesis at the Faculty of Medicine of Nantes University. The jury includes a professor from the Faculty of Medicine (president of the jury), the thesis advisor from the veterinary school (1<sup>st</sup> examiner) and another instructor from the veterinary school (2<sup>nd</sup> examiner). Particularly remarkable theses that have earned special mention will be presented to the thesis prize commission to receive an award.

The list of the best theses is sent to organizations and associations wishing to reward excellence (Veterinary Academy of France, College of Veterinarians, etc.).

### 5.1.4 EVALUATION OF TEACHING AND LEARNING

The CUs and clinical rotations are all evaluated by students confidentially through forms in the platform Moodle: for CUs, each semester before the results of the examination, at least once every three years; for clinical rotations, immediately after the end of each clinical rotation in 4<sup>th</sup>Y and 5<sup>th</sup>Y. The examinations are also evaluated by students in the same manner. The raw results of the evaluations are all accessible on line to faculty members and students (<http://ent-prod.oniris-nantes.fr/course/category.php?id=123>). They are summarized by the director of the veterinary education and student life in the form of histograms and short comments and presented and discussed in the CP of the veterinary curriculum and the CEVE, in order to improve the content and the form of the CUs and/or clinical rotations. Discussions between the director of the veterinary education and student life and the responsible of a CU which has a non-favorable evaluation occur in order to search solutions for the next year.

### 5.1.5 STUDENT WELFARE

#### ● Facilities for students

The Veterinary Education and Students Life Office (<http://ent-prod.oniris-nantes.fr/course/view.php?id=227>) manages enrolment of students for the five years and interns, administrative follow-up, thesis files, preventive medicine and records student absences. It assigns an instructor-advisor (mentor) to each student designed among the faculty members who supervises and validates supervised practice training.

The Veterinary Education and Students Life Office organizes instruction, clinical rotations and examinations. It manages externship agreements. It enters and processes grades, records externship approvals, ensures the classification of students in each class. It prepares all tables of results submitted for approval to the council of instructors and then edits transcripts to students.

This office is located close to the central administration and nearby the main classrooms. In the office lobby, students can find documents free for pick-up (externship agreements, requests for leave of absence, etc.) and a «suggestion box» for their anonymous comments, complaints and questions. The staff keeps students informed by mail or by phone.

Sports: The school has football and rugby stadiums with an artificial pitch and changing rooms. It is also equipped with a gymnasium on the Geraudiere campus in which football, basket-ball, and hand-ball are played. In addition, students may access many other sports in university structures.

Housing aid: unfortunately no University Residence exists on the veterinary or engineer Campus. Many announcements are sent to the School for apartments or houses from private owners; the Veterinary Education and Students Life passes these to students. In 2015, a University Residence, depending on the CROUS, will exist on the Geraudière Campus, with university housing reserved for our students.

A university restaurant depending on regional center of school and academic works (CROUS) exists in Oniris; but only for lunch meals.

**Student Clubs and Organizations:** the main student organization is called the «Veterinary Student Union». It offers a variety of services to lighten student life on campus. Other more specific groups exist, such as student branches of professional organizations (AFVAC junior, AVEF Junior, GTV junior, SNVEL junior, Yaboumba Junior, etc) and groups that organize sports or cultural activities (music, theatre, etc.). A student lounge is available to Oniris students. Several rooms are also assigned to students for their various activities (students' association, co-op, printing,...). Numerous other «thematic clubs, coordinated by students' association, exist even if they don't have a dedicated room.

### ● Students confronted with problems

Students are medically examined at the University Preventive Medicine. Doctors and psychologists are present to support students (at least one medical visit per student and per year financed by the line Ministry). All students must be vaccinated against rabies, unless they write a letter of waiver. Students are aware of the physical, chemical and biological hazards before any practical sessions.

Each Student is accompanied by a faculty-tutor assigned to help him and assesses periodically the situation. For any problem, he can discuss with his faculty-tutor or Director of Veterinary Education and Student Life.

## 5.2 COMMENTS

### ● Training Programme

The numerous educational efforts developed at Oniris allows to underline:

- The number of faculty members remains unchanged despite an increase in students number since 2013. Therefore, the number of work groups can't be increased and the number of new teaching methods suited to each student is held back,
- The learning objectives have been identified and prioritized in the majority of CUs, even though a great deal of work will remain to be done on some CUs on that point,
- The educational quality of handouts have been improved substantially for ten years.

### ● The learning environment

Theoretically, education and research activities contributes equally in the carrier system in France . However, the evaluation grids about research activities are very clear while the evaluation grids for teaching activities is still suffering from a lack of clear indicators. This must be corrected at the national level.

The internal promotions of faculty members, obtained in recent years at Oniris, were attributed by an internal commission after the assessment of activite reports. It is based on performance indicators which takes into account all missions of applicants. The promotion of candidates is based on research and teaching criteria. Only the best reports are promoted.

### ● The examination system

The examination system is generally not a major problem. Some exams are not well accepted by students. The reason is often linked to the lack of clear learning objectives.

### ● External Examiners

Although it is often well accepted by the community of teachers, external evaluation is not practiced at the university.

### ● Assessment of faculty members.

The school completely agrees with this approach for many years and there is no resistance, contrary to the situation that exists in other higher education establishments.

### ● Social Service for the students

Given the investments required for the implementation of social and sports infrastructures, solutions have been developed over the past three years. Thus, Oniris joined hands with other close establishments and/or with the CROUS, the regional affiliates of the French national student service agency, to provide services to Oniris students (football and rugby stadiums, university residence, psychological and psychiatric consultations, ...). The accompanying of persons in difficulty works well in Oniris. It enables to the direction of veterinary training to detect, to guide and to assist students in difficult situations.

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## 5.3 SUGGESTIONS

### Improvements in the quality of teaching

The improvement of education should be a permanent quest. It must be done in a quality approach:

- The writing of clear and prioritized learning goals given to students at the beginning of the semester, Thus, this is the way of making the students the actors of their learning,
- The achievement of teaching through methods compliant with commitments. The aim is to encourage active methods (case studies, problem solving) and distance learning, including self-learning (simulation, e-learning) and self-evaluation.
- The application of corrective measures dedicated to the teachings after taking into account the results from annual evaluations of teaching and examinations by students. A bi-annual meeting composed of those responsible for educating teacher, two representatives of students and the director of veterinary studies will be also implemented.



## CHAPTER 6







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## FACILITIES AND EQUIPMENT

## 6.1 FACTUAL INFORMATION

### 6.1.1 PREMISES IN GENERAL

#### ● Geographical location of sites

Since the creation of Oniris in 2010, the school is currently represented on two sites:

- Géraudière site, dedicated mainly to food science curriculum, NHC and professional license, located in the north of Nantes city.
- Chantrerie site, dedicated mainly to the veterinary curriculum, located in the north-east of Nantes.

The Chantrerie site map is presented in Appendix 6.1. The buildings are divided into 5 groups in accordance with subject areas.

#### ● Property assets and premises

The Oniris property is composed as follows:

	Géraudière site	Chantrerie site	Total
Hereditaments	10,53 ha	26,26 ha	36,79 ha
Property Asset	19 700 m <sup>2</sup>	40 500 m <sup>2</sup>	60 200 m <sup>2</sup>
Rooms dedicated to	21 classrooms	22 classrooms	43 classrooms
Education	4 amphitheatres	7 amphitheatres	11 amphitheatres

The space allocation is the following (according to functions):

- Laboratories, operating theatres, animal facilities 59,1 %
- Reception, classrooms, amphitheatres 19,0 %
- Primary circulation, sanitary facilities 21,9 %

### 6.1.2 PREMISES USED FOR CLINICS AND HOSPITALIZATION

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

	Species	Number of places
Regular hospitalization	Cattle	8 stalles et 19 boxes
	Horses	34 (+ 4 for scintigraphy)
	Small Ruminants	8
	Pigs	
	Dogs (or cats)	35
	Cats	30
	Other: exotics Birds	3
	Reptiles, amphibians	5
	Mammals	7
	And incubators	2
Isolation Facilities	Farm animals and horses	2
	Small Animals	4
	Other	
Chemotherapy		5
Radiotherapy	horses	4

### 6.1.3 PREMISES FOR ANIMALS

#### ● Animal facilities (see Appendix 6.2):

Oniris rodent core facilities are located in the Group II of the Chantrerie campus. It was enlarged and renewed in 2011-12 (350m<sup>2</sup> to house up to 3,000 mice and 1,000 rats). This rodent platform includes today three zones (A1, A1+ and A2) and a surgery area. This platform provides supports for:

- basic and medical researches for companion animals (veterinary medicine) or humans,
- service activities including rodent housing, and pharmacological, immunological, metabolic, histopathological characterizations and evaluations of rodent models,
- educations and trainings of veterinary students (in the field of physiology, nutrition, pharmacology, surgery, endocrinology ...) or continuing education.

The experimental animal facilities of Preclinical Investigation Centre (CRIP) dedicated to large animals are also located in the Chantrerie site. They are spread over two distinct buildings. One is dedicated to ruminants (sheep, cattle and goats), and the other is for dogs, rabbits and pigs.

These animal facilities aim to provide human and technical resources necessary for the animal housing in preclinical studies for Oniris research units and external partners. These activities are carried out in accordance with the rules relating to animal experimentation and housing. The acceptance and the planning of studies are subject to approval by ethics committee and by Animal Welfare Committee for the follow-up studies (CRIP/Oniris).

#### ● Pedagogical herds

The equine pedagogical herd is composed of twenty mares housed in a paddock with an open stall, and a stallion that has a separate paddock with shelter.

The second pedagogical herd is composed of 26 dry cows housed in a stall with a controlled outdoor access.

The school doesn't have farms and has chosen to develop outsourced forms of clinical teaching education for farm animals (see Chapter 7). Similarly, there are neither pigs nor poultry at Oniris site. The professional experience of students for these species is done by the externalization of teaching with farm visits.

### 6.1.4 PREMISES USED FOR THEORETICAL, PRACTICAL AND SUPERVISED TEACHING

Table 6.2: Premises for clinical work and student training (appendix 6.3)

Small animals	Number of consulting rooms	17 *
	Number of surgical suits	12**
Equine and food animals	Number of consulting rooms	2 equine and 7 food animals
	Number of surgical suits	2 equine
Other: Exotics	Number of consulting rooms	2 (with one in dermatology)
	Number of surgical suits	

\* Consultation rooms - clinical work: Internal Medicine 2, Preventive Medicine 2, Surgery 1, Reproduction 2, Emergencies 2, Dermatology 1, RMI 1, Ultrasound 2, Radiography 3, Physiotherapy 1

\*\* Surgery rooms: 4 in reproduction ; 6 in surgery ; 1 in dentistry ; 1 in emergencies

Table 6.3: Premises for lecturing

Number of places per amphitheatre							
Hall	Main Hall	Godfrain	G2N	G2S	G3	G4	G5
Places	455	40	140	140	140	140	126
<b>Total number of places in amphitheatres: 1,181</b>							

Table 6.4: Premises for group work

Rooms	212	215	216	217	218	220	221	222	202	312
Places	36	18	10	16	18	40	40	40	40	16
Room	401	406	511	512	513	computer rooms			language labs	
Places	30	19	20	15	8	15 + 36			2 × 28	
Total number of places in rooms for group work:						473				

Table 6.5: Premises for practical works

Room	201	402	405	510	901	902
Places	40	36	19	36	20	20
<b>Total number of places in laboratories: 227</b>						

Health and safety measures are written on a poster that is displayed in each teaching room. Moreover, before the beginning of a practical work, faculty members recall to students the specific instructions relative to health and safety measures. These specific instructions are also written in the teaching document relative to the practical works.

## 6.1.5 DIAGNOSTIC LABORATORIES AND CLINICAL SUPPORT SERVICES

### ● Diagnostic laboratories

Oniris has a multidisciplinary analytical platform with a team of European diplomates (including 2 European Colleges of Veterinary Clinical Pathology and 5 European Colleges of Veterinary Pathology) able to perform and interprets analyses in haematology, biochemistry, endocrinology, immunology, cytology, histopathology and immunohistochemistry, molecular biology, bacteriology, mycology and parasitology, whatever the species (dogs, cats, ferrets, horses, cattle, pigs, poultry, fish, exotics). All these skills are provided to the clinicians and students through a biological laboratory, centrally located within the VTH, and called "the hospital's laboratory". This lab immediately performs the most common biochemical and hematological assays and delivers other analyses to the different specialized laboratories. These specialized laboratories directly send the analytical results to the requesting clinical services, as well as to the hospital's laboratory technicians who record results into Clovis database.

Students and clinicians have a free access to the VTH's laboratory (as well as to the different specialized laboratories of the analytical platform) where they are trained by a staff composed of 2 ECVCP diplomates, 1 ECVCP resident and 3 technicians with teaching and coaching abilities. Hematology and biochemistry analyzers, cytocentrifuge, microscopes, anion-cation and blood gas analyzers and hemostasis screening tests are immediately available to the students in this lab as well as in the emergency departments, where hematology and biochemistry analyzers are also used.

The specialized laboratories are, of course, also opened to the outside and provide veterinary practitioners throughout their range of expertise. That's the reason why their analysis volume is particularly high, as can be seen, for example, for the LDH (Laboratory of hormonal analyses) in the table of Appendix 6.4.

### ● Central clinical support services

#### ●● Medical Imaging

The imaging facilities are large and some are also available for large animals. The imaging department comprises two twelve square metres ultrasound rooms, a large room for the interpretation of x-ray pictures. The premises can accommodate physician-educators, surgeons and students but also two X-ray rooms (small and large animals), an MRI and a block for interventional surgery with digital arch. All these premises are dedicated to daily clinical practice. In addition, there is also a large room with a scan for horses, a SPECT/CT for small animals, and a laboratory which allows the preparation of radioactive solutions.

Two areas of activity are carried out in the imaging department: a clinical diagnostic activity and research activity. The clinical activity constitutes the major part of medical examinations performed in the department. The animals examined from either the hospital (following to immediate consultation or consultation on appointment), or surrounding colleagues. This last activity as a reference centre for surrounding veterinary private practices is marginal in radiography but represents almost 10% of ultrasounds and 40% for MRI. Since 2003, our platform increased its activity by the mean of new materials: one ultrasonography device, one MRI, a SPECT-camera and more recently a SPECT-CT. At the same time, our team gained two technicians and a medical physicist. The volume of examination followed the same way: 72 ultrasonographic examinations in 2004 vs 1,017 in 2013, and 520 radiographic cases in 2004 vs 2,728 in 2013.

#### ●● Anesthesia

The STAR (Transversal Service for anesthesia-resuscitation) provides anesthesia and pain management for all the requiring services in the veterinary teaching hospital (soft tissue and orthopaedic small animal surgery, equine surgery, spay and neuter clinic, imaging department for radiography, ultrasonography, MRI and soon CT scan; exotic animal service, dermatology, oncology, internal medicine). The service anesthetizes 50 to 70 small and exotic animals and 8 to 15 horses per week. The STAR is in charge of clinical teaching to veterinary students (fourth and fifth year) as well as small animal and equine interns. Hospitalized animals can benefit from a pain consultation and an external consultation for animal owners is under development. The STAR is also very involved in continuing education through developing specific courses but also participating to courses organised by the equine clinic, the small animal surgery service, food animal medicine and the wildlife centre. Finally, the STAR provides a continuous service to the pre-clinical investigation centre (CRIP) through designing the anesthesia and analgesia protocols, performing anesthesia on research animals (8 to 12 research protocols a year) and being involved in the post-operative care.

## 6.1.6 SLAUGHTERHOUSE FACILITIES

### ● Teaching on slaughter procedures

Oniris has no structure for the slaughter of farm animals. The teaching on slaughter procedures is carried out during a slaughterhouse visit (duration 4 hours). During the visit, students are divided into groups of 16 persons and have the opportunity to observe the whole process of cattle slaughtering. The slaughterhouse is located in Cholet (about 65 km from Oniris). A total of 350 to 400 cattle are slaughtered each day with a frequency of 55-60 bovines/hour. The teaching is completed by 3 hours of tutorials during which the slaughter of other species (pigs and poultry) methods are described and illustrated with videos.

### ● The necropsy building (appendix 6.5)

We have a new building of 400 m<sup>2</sup> dedicated to manipulations, carcass storage, and other animal by-products for anatomy, necropsy and meat inspection teachings. Built in 2012, it includes:

- 1 changeroom for technical and faculty staff,
- 2 student changeroom (Man & Woman),
- 1 documentation centre (books, computer and internet access),
- 2 teaching rooms of 130 m<sup>2</sup> equipped with 8 necropsy tables, with system of rails and with 4 hoists per room,
- 1 room dedicated to histology for the samples can be mounted.
- 1 room dedicated to preparation of anatomy parts,

- 1 positive cold room of 70 m<sup>2</sup> for the storage of thirty carcasses of large animals,
- 1 negative cold room of 30 m<sup>2</sup>,
- 1 loading-unloading dock equipped with a hoist and an access to system of rails,
- 1 wastewater treatment plant

Two prosecutors and a technical person provide and supervise the cutting of the carcasses for necropsy activities. They also provide the procedures for cleaning and disinfection of the building. The sanitary guidelines operating in this sector are described in the procedure « Biosafety in the animal by-products sector – Autopsy, Anatomy and Meat Inspection activities ». During the 2012-2013 school year, nearly 200 tons of animal by-products were used in the building.

### 6.1.7 FOODSTUFF PROCESSING UNIT

The foodstuff preservation processes are theoretically taught by 4 hours of lecture courses complemented by 3 hours of tutorials and illustrated by a visit (1 hour) of food technology hall located in Géraudière site. During this visit, the main treatments are described (plates or pipes pasteurizers, vacuum autoclave sterilizer, high hydrostatic pressure pilot, ohmic heating, drying cylinder...). In addition, a visit (3 hours) of catering establishments (2 university restaurants and 2 central kitchens) allows students to see the operation of treatment devices of cooking type, fast refrigerating cell, vacuum and in modified-atmosphere packaging machine. The catering establishments visited are the following:

- The Oniris university restaurant located in Oniris: 8 employees, 400 meals a day.
- The Chantrerie university restaurant (about 1 km from Oniris): 17 employees, 900 meals a day.
- The Rezé central kitchen (about 20 km from Oniris): 15 employees, 4,850 meals a day for 34 satellite restaurants.
- The Bouguenais central kitchen (about 23 km from Oniris): 7 employees, 1,500 meals a day for 10 satellite restaurants.

### 6.1.8 WASTE MANAGEMENT

#### ● Organization for Security and risk prevention

In accordance with the rules in force, there is a single document for the evaluation of occupational risks since 2006. It is regularly updated and distributed to all agents. This single document (appendix 6.6) originated from visits of research units, analyses of workplace accidents, inspection and observation reports mentioned in health and safety register. It allows to develop an annual prevention program in health and safety. This program is approved and monitored by a Health and Safety Committee composed of five members of administration and nine members of staff representatives. It meets twice a year. Oniris has a dedicated service to manage health and safety. It ensures and monitors the implementation of preventive and corrective actions. It is composed of health and safety engineer, three assistants in prevention and a delegate network in each research unit. In addition, the medical surveillance of school staff is ensured by a doctor of preventive medicine.

#### ● Safety procedures and protected zones

The VTH and all research laboratories apply the guidelines of good practice for hygiene.

According to the level containment laboratory or hospital activity, formalized procedures are implemented to prevent the risk of contamination related to the pathogens being handled in the laboratories. In addition to pinpoint areas at risk, the access to risk areas are limited by a badge system or biometrics. Specific equipments are used such as microbiological safety work benches, autoclaves, etc.

Activities involving exposure to ionizing radiations are assisted by a competent radiation protection service. This service has implemented the organizational guidelines of radiation protection, the management of unsealed sources and the management of effluents and contaminated wastes. It conducts technical inspections of internal and external radiations but also complements and updates the risk assessments. Oniris invested in substantial structural improvements over the last five years with the creation of radiation protected areas for animals to obtain all mandatory authorizations.

### ● Internal and external control systems

The municipal civil protection commission checks every three years that each public building meets fire safety standards. This commission is also consulted on works.

Two evacuation drills are held annually. They allow to the fire response team and staff to practice the procedure.

Prevention plans are in place for works of more than 400 hours or unsafe works. A preliminary inspection of the site is systematically carried out before the construction starts. An agent of the school is designated to monitor each site.

In addition, Oniris holds public procurement for health and safety protection coordination, for building maintenance ((electric, ventilation, gas, ..) and for the surveillance of premises.

### ● Disposal of animal carcasses and anatomical parts

All wastes generated by teaching activities in anatomy, in pathological anatomy and in Hygiene and Food Quality (meat and carcassee, food pieces) are stored in freezers of the dedicated building. Twice a week, the public rendering service comes to collect and treat them as high risk wastes. The effluents are treated in a chlorination stations.

### ● Disposal of Infectious Healthcare Waste (IHW)

Twice a week, an approved company transports the IHW to the incineration plant. An annual report allows to follow waste generation, stable for several years.

### ● Hazardous wastes management

Each laboratory sorts its wastes and packaged them in suitable containers. They are then deposited at central collection facilities. An agent of the school is present weekly to transmit the containers, to ensure the respects of disposal procedures but also to keep a register of the generated wastes. The procedure for the disposal of hazardous wastes and the modus operandi are available on Oniris intranet (<http://www.oniris-nantes.fr/liens-utiles/intranet/intranet-oniris/administration/hygiene-securite-et-prevention/gestion-des-dechets-dangereux/>).

An approved company picks up the liquid and solid chemical wastes every fortnight. At least one agent by laboratory benefited from training on labeling of wastes.

## 6.1.9 FUTURE CHANGES

### ● Premises which are being finalized

Heavy investments are regularly made to improve the equipments and allow the development of new clinical services. These investments benefit to the training of students, to VTH clients and to our business. In particular, two buildings are being finalized: the radiotherapy center and the new equine hospital mainly dedicated to Emergency and Intensive Care (see 7.2.3).

### ● Building projects

Three new projects are currently being investigated by the State and the Communities under 2015/2019 State-region contract plan (CPER). If successful, these projects should continue to improve the quality of the premises and equipments:

1/ The development of « a center of veterinary public health and food safety ». It aims to bring together several labeled research units of Oniris on the same site and around technology platforms (analytical chemistry, microbiology, bioinformatics).

2/ The creation of a "Veterinary Institute of Preclinical Research" aiming to bring together the research units of the biomedical research department. It will include the technical platforms from the « Preclinical Investigation Center ». As presented in the introduction, it will bring together all necessary tools for preclinical approaches.

3/ Finally, an integrated center dedicated to food innovation could be structured around Food'Innov program. It will be located on Geraudière site and would have less impact on veterinary training.

### ● Infrastructure projects

Oniris wants to develop a real strategy for digital campus. This innovative and ambitious project consists of several components: the development of digital infrastructure (speed and security), mobility (wifi and identity federation), pedagogic innovations (e-learning, massive open online course (MOOCs), Small Private Online Course (SPOCs) and videoconferencing/webconferences), collaborative workspace (security and openness) and renewal of IT teaching rooms.

## 6.2 COMMENTS

The transfer of operating expenses is increasingly. It will thus impact the capacity of self-financing. Therefore, the establishment has to develop its partnerships and its funding opportunities, in particular for the development of infrastructure and the acquisition of heavy equipments (see Chapter 3).

### ● Treatment of animals: ethical compliance

At Oniris, live animals are used for both teaching and research but the scientific or educational value of this use are always considered. All the procedures either in teaching or in research follow the 3R's principles.

For research purposes, compliance with the law (Directive 2010/63/EU) and a perfect ethical behavior are essential principles that are "no project is carried out unless a favorable project evaluation by the competent authority has been received". Each use of animals is carefully evaluated and all the ongoing experimental protocols have been approved by the regional ethical committee. Oniris is one of the institutions actively involved in this ethical committee.

For educational purposes, the principle of the 3R's rules is considered to reduce the number of animals used and to control their handling and care. We recently used simulators to replace live animals or to decrease the number of animal used (Virtual Vet project). Moreover, in teaching classes, all activities are supervised at all times by a veterinary professor. The professor is responsible of the respect of ethical animal handling and ensures that all procedures are conducted only for teaching or training activities to protect animals from unnecessary cruelty.

A peculiar attention is paid to the ethical aspects within the hospital, especially for intensive care unit and emergency service which are particularly suited to difficult situations. Faculty members in charge of these services have a PhD in Medical Ethics. When a delicate situation arises as a therapeutic obstinacy, discussions are held with the same methodology as that used in human medicine ethics committees. The aim is to avoid that decisions are taken with an excess of motivation or non-rational sensitivity.

In addition, the pain is taken into account. Clinicians in charge of anesthesia, emergency and intensive care provide a daily theoretical and practical training. For example, morphinics are widely used under the supervision of a clinician and administrative constraints are never an obstacle to the management of pain. Finally, in general, hospitalized animals and resident herds are treated in humane conditions. Indeed, students are very involved: nursing, walking pets, and animal welfare.

### ● Adequacy facilities/teaching

The adequacy between the facilities and teaching programs is questionable because of the increasing number of students imposed by the Ministry (+ 20 students each year per french veterinary school). The amphitheatres were not designed for 137 students and the school only added rows of chairs in each amphitheater. The classrooms for supervised or practical training by groups of 35-40 students are only 7 in the school; there is no problem in 2013-2014, because only students in 1<sup>st</sup>Y are 35-40 per group. Nevertheless, the school must build from 3 to 5 classrooms adapted to groups of 35-40 students in the next years. Two rooms were remodeled to meet specific learning objectives:

- Two rooms Virtual Vet® and Virtual Critical Care® for the teaching of basic and advanced technical gestures (see chapter 5),
- Two rooms using innovative teaching methods of transdisciplinary groups (Manimal® and Food'Innov® partnership programs coordinated by Oniris (see chapter 5),
- Expansion of the teaching pilot plant located at the Geraudiere site allowing to perform practical works in hygiene, quality of products and food processes in conditions similar to real production units.



### ● Adequacy equipments/teaching

The adequacy between the equipments and teaching program is very satisfactory. Each year, the school has a renewal program of existing equipments and decides the purchase of new non-existing equipments. Thus, amphitheatres and working rooms are all equipped with projectors and some of videoconferencing systems. Similarly, these rooms receive regular upgraded equipments and hardware upgrades.

The school has heavily invested in the construction and equipment for the imaging and radiotherapy platform with an unique panel of equipments in the french veterinary schools. These tools are for education but also research and are used in several topics and several animal species. There are strong points in the structuring of Veterinary Cancer Center, already mentioned several times.

In 2013 and 2014, significant human and material investments were made to develop a comprehensive training program around various aspects of clinical communication with the arrangement of an equipped room and the expansion of the hospital welcome area to professionalize the training of students to client management.

### ● The maintenance of the premises and equipments

Oniris pursues a constant renovation policy of its premises for many years (more than 80 % of buildings have over 15 years). For example, a multi-year replacement plan of door frames on Chanterrie site has been implemented for several years to increase thermal and sonic insulation. Each year, approximately € 800,000 are dedicated to the rehabilitation and reconstruction works (mostly self-financed).

Several premises have been built or recently expanded to meet to the wishes of excellence in teaching. In 2012, a new necropsy building has been put into service. In 2013, a tutorial room and a practical room have been renewed and a new tutorial room was created to take into account of the increase of students. Several rooms will be renovated in the year 2014. The renovation and rehabilitation works are implemented, taking into account the safety aspects (fire, access control) and access to persons with disabilities.

For the coming years, the multi-year replacement plan of door frames will continue, as well as the upgrading of the ventilation and air conditioning systems.

Scientific equipments take place under maintenance contracts and computer equipment is regularly renewed.

## 6.3 SUGGESTIONS

Many heavy investments have been made in recent years and are presented in the introduction and in the chapters of this report (Virtual Vet, Equine Emergencies, MAN-IMAL and the building located in group 5, welcome area and Clinical Communication, radiotherapy). These actions are not yet fully completed and will be in the coming year. In this context, the structuring of a Veterinary Cancer Center is probably one of the most impacting projects for veterinary education.

In addition to the changes already made, the school has chosen to acquire since 2013 videoconferencing systems and web conferencing to enable teachings on diverse sites or with teacher training at a distance. Thus, three videoconferencing systems, including one in a 140-seat amphitheater, have been installed in premises close to the VTH. Another is planned in building located at the group 5 which is currently being renovated for MAN-IMAL teaching program.

In the same purpose of modernization of pedagogical tools, an interactive videoprojector as well as an interactive board will be installed in teaching facilities, which are currently being renovated in group 5. In addition, the school should be equipped with EasyCast Campus® system from 2015. It will be a comprehensive solution to record all presentations of the establishment. This system integrates an automated registration of presentations, restitution in the form of webinars or podcasts and the grouped edition via a central server.

Moreover, the school plans the purchase of new manikins (including laboratory animals, cats, horses, and cattle) for the learning of basic technical in virtual vet® room in 2015.

## CHAPTER 7





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## **ANIMALS AND TEACHING MATERIAL OF ANIMAL ORIGIN**

## 7.1 FACTUAL INFORMATION

### 7.1.1 Anatomy

The figures for animal source materials used for practical teaching of anatomy are presented in the table 7.1 below.

The 22 ruminants include 2 cows, 6 calves and 14 goats. In the «other» category, we distinguish live animals (6 pigs, 40 birds) and animal carcasses (40 rabbits and 48 fish).

The live animals come from official laboratories (dogs), livestock producers (ruminants) and the school. They are euthanized on the day of their arrival. The animal carcasses come from breeders and are kept under refrigeration until their utilization.

Table 7.1: Material used in practical anatomical training

	dog		ruminant		equine		other	
	2012-2013	2011-2012	2012-2013	2011-2012	2012-2013	2011-2012	2012-2013	2011-2012
live animals	6 <sup>(1)</sup>	6 <sup>(1)</sup>	22 <sup>(1)</sup>	22 <sup>(1)</sup>	2 <sup>(1)</sup>	2 <sup>(1)</sup>	46 <sup>(1)</sup>	86 <sup>(1)</sup>
Cadavers							88 <sup>(1)</sup>	48 <sup>(1)</sup>
Specimen								
Other								
eg ultrasound								
computer assisted								
teaching								

(1)<sup>st</sup>Y level / 2 x 12 x 6 students per group. A full week of dissection (5 days x 8 hours).

### 7.1.2 Pathology

Table 7.2: Number of necropsies over the past 3 years

species		Number of necropsies			Average
		2012-2013	2011-2012	2010-2011	
<b>Food-producing animals</b>	cattle <sup>(1)</sup>	221	220	251	363.3
	small ruminants <sup>(1)</sup>	3	3	2	
	pigs	0	0	0	
	other farm animals: Fish <sup>(2)</sup>	130	130	130	
Equine		11	23	21	18.3
Poultry <sup>(1)</sup>		293	299	292	300
Rabbits		5	23 <sup>(3)</sup>	8	
Companion animals/exotic	dogs	107	91	123	214.7
	cats	81	87	123	
	other	12	4	16	

(1) 4<sup>th</sup>Y level / 16 students per group

(2) fishes infected experimentally / 3<sup>rd</sup>Y level / 16 students per group

(3) optional course every two year / 1<sup>st</sup>Y to 4<sup>th</sup>Y level / 16 students per group

Since 2013, in collaboration with the laboratory MSD, a new necropsy service named « Necropsy-service » is offered to veterinarians in the region. At the request of these practitioners, animal carcasses are removed on site at the place of rearing. They

are then transported to the school and autopsied by experts in respecting applicable regulations. Until now, these animals are not used in core education.

This service is also available for horses but the animal carcasses must be brought to school at the moment (the purchase of vehicle is scheduled in 2014).

### 7.1.3 Animal production

Oniris does not breed food-producing animals strictly speaking, but has a cattle herd with 26 dry dairy cows used for the practical training of students (2<sup>nd</sup>Y, 3<sup>rd</sup>Y, 4<sup>th</sup>Y) (animal restraint, propaedeutic).

The students discover the production animals during the farm visits (see Table 7.4.b') and during a specific training period (1 week in 1<sup>st</sup>Y).

Although horses are not considered as production animals, we mention in this chapter the presence of another herd called the equine teaching herd consisting of twenty mares and a stallion. They are the main pedagogical support for the teaching « Approach as handle and restraint of horses » (2<sup>nd</sup>Y) and « Equine Reproduction » (4<sup>th</sup>Y and 5<sup>th</sup>Y).

### 7.1.4 Food hygiene/public health

The food hygiene and public health education is divided into 4 types of activity [the inspection of food stuffs of animal origin (2,408.33 lésions/year), food microbiology (267.00 analyses/year), food processing (66.67 cases/year) and risk analysis in breeding (12.00 breedings/year)] and concerns students of 3<sup>rd</sup>Y and 4<sup>th</sup>Y. The different pedagogical activities and the number of cases are detailed in a table in appendix 7.I.

## 7. 1.5 Consultations and patient flow services

### ● 7.1.5.1 Consultations

#### ●● Food-producing animals

For ruminants, there is little one-to-one consultations at VTH for bio-security reasons and a dense veterinary network around the school. However, the consultations of cattle and small ruminants brought into hospital are done by students. They can examine them 32 weeks per year, 5 days per week, 8 hours a day. Other activities are organized outside the VTH, in outsourced clinique, in slaughterhouse for ruminants and in farm visits (herd health) for all production species (table 7.4b et table 7.4b').

#### ●● Equine

The equine VTH is open 48 weeks per year with a four-week closure in summer (August). During the opening period, consultations are available: sport and internal medicine, orthopaedics, surgery and reproduction. These consultations are scheduled five days a week, Monday through Friday, from 9:00 am to 5:00 pm. In addition, an emergency service receives horses 24 hours a day, 7 days a week (except in August).

#### ●● Companion animals

The companion VTH is open all year with the exception of August. All consultations are available to the public over a period of 40 weeks (the beginning of September to the end of June) and the emergency service provides consultations during the two weeks of Christmas holidays and during the month of July.

Consultations are held every day, Monday to Friday, in all departments of the VTH and are provided by the emergency service on Saturday and Sunday.

The consultation activity is focused on the mornings from 8:30 until 12:30 in most of the services. General and specialised consultations are also available in the afternoon, between 14:00 and 17:30, depending on the services.

### 7.1.5.2 Patient flow

The figures for all animals received for consultation or hospitalized in Oniris during the last 3 years are summarized in Table 7.3 just below.

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

Species	Number of cases						Average
	2012-2013		2011-2012		2010-2011		
	a	b	a	b	a	b	
<b>Food producing</b>							666.6
Bovine	44 <sup>(1)</sup>	467 <sup>(2)</sup>	45 <sup>(1)</sup>	424 <sup>(2)</sup>	74 <sup>(1)</sup>	441 <sup>(2)</sup>	
Ovine, caprine	10 <sup>(1)</sup>	24 <sup>(2)</sup>	10 <sup>(1)</sup>	19 <sup>(2)</sup>	15 <sup>(1)</sup>	37 <sup>(2)</sup>	
Porcine							
Other farm animals <sup>(3)</sup> : fish	130		130		130		
Poultry	96 <sup>(4)</sup>		96 <sup>(4)</sup>		96 <sup>(4)</sup>		96
Rabbits	0		0		0		
Equine	1,679	756	1,712	714	1,828	730	1,740
<b>Companion animals/exotics</b>							22,400
Canine	12,027	1,023	12,446	1,003	12,677	1,064	
Feline	9,910	895	10,407	1,015	9,732	878	
exotic animals	793	23	535	20	570	50	

(1) ruminants received for a reproductive purpose / 4<sup>th</sup>Y level / 8 students per group

(2) ruminants received for consultation and then hospitalized / 4<sup>th</sup>Y (5<sup>th</sup>Y) level / 16 (6) students per group

(3) fishes infected experimentally / 3<sup>rd</sup>Y level / 16 students per group

(4) diseased poultry collected from commercial farms / 4<sup>th</sup>Y level / 16 students per group

The number of companion animals received for consultation is high, although it decreased slightly in recent years. This number now appears to be stabilized at around 12,000 per year for dogs and from 9,000 to 10,000 for cats. For each students of 4<sup>th</sup>Y, the mean number of clinical cases per year averages 203 which seems satisfactory. The number of dogs and cats hospitalized is also decreasing. However, this decrease is less pronounced for cats that are, in fact, better medicalized now in France. The average length of time spent in hospital for companion animals is about 2 days. This downward trend in the number of cases is not alarming for our clinical training but must be analyzed: it may be a result of the economic crisis, but it can also result from a highly competitive environment with the opening of a veterinary hospital in Nantes center.

Recently exotic animals have seen a strong increase after a decline attributed to the lack of a trained staff in this sector, with restricted opening hours until a restart in 2012/2013. However, hospitalizations remains rare in this sector.

After a peak in 2010-2011, the number of equine consultations shows a very slight decrease (-2% between 2012 and 2013) with an average of 1,740 cases per year. Nevertheless, this is an important number of cases, especially for students in 5<sup>th</sup>Y «Equine Pathology». Indeed, approximately 25 students from this track per year are exposed to about 69 cases/student/year. Approximately 40% of horses received for consultation are hospitalized, mostly to undergo surgery or to be monitored medically, but also sometimes for complex orthopaedic check (scintigraphy) and associated treatments. Hospitalizations are mostly short-term (4 days) for most surgical procedures but can be much longer in internal medicine (up to 1-2 months).

For farm animals, the number of ruminants received for consultations *stricto sensu* is low (average of 54 per year) due to regulatory constraints that prevent the return of animals in their farms. Animals are essentially hospitalized for pedagogical reasons and then euthanized. This is most often the donation from farmers. This number is steadily increasing over the past 3 years with an average of about 444 hospitalizations per year. Each animal is hospitalized about 4 days before being euthanized. About pigs, farm visits are organized (19 farms visited per year).

In addition to this activity dedicated to «ruminants», students participate in the outsourced clinical training. The number of ruminants examined and treated in the hospital varied from 628 to 697 animals during the last 3 years.

#### 7.1.6 Vehicles for animal transport

The school has a vehicle to transport large animals (GVM < 1,000 kg).

In addition, animal carcasses from farms are transported by a suited dump truck and used for the activities of «Autopsy -service».

#### 7.1.7 On-call emergency service

There is no real emergency service for production animals. However, they may be hospitalized upon the request from their attending veterinarian during the opening period of the large animal clinics.

The equine emergency service currently works with a dedicated phone line available 24 hours a day, 7 days a week, and 48 weeks a year. Horses admitted after telephone contact are consulted and hospitalized in the appropriate clinical service (medicine, surgery, reproduction). A new building dedicated to equine emergency is under construction and will be delivered in 2014. It will allow a centralized functioning and the pooling of tools. It will also ensure better practical conditions by improving the management of equine emergencies, including colics.

The emergency service for companion animals (exotic included) is open every day, 24 hours a day, 7 days a week, except in August. The activity of this service is significant and is increasing as shown by the figures for the last three years: 2,200, 2,935 et 3,506 consultations were respectively held in this service from 2010 to 2013.

#### 7.1.8 On farm teaching and outside patient care

##### ● 7.1.8.1 Ambulatory (mobile) clinic

For pedagogical reasons and because of a dense veterinary environment, Oniris chose to develop outsourced clinical teaching forms for farm animals (see. paragraph 7.1.8.2).

In equine sport medicine, ambulatory consultations are offered for underperforming horses. Students have the opportunity to participate in conducting field tests and endoscopies (about 12 per year).

In addition, each year since 2011, the equine VTH enters into partnerships with race course companies of Pays de la Loire Region (Nantes, 31 meetings / year, Machecoul 8 meetings/year, and Saint Jean de Monts 5 meetings/year) to provide technical and medical assistance through veterinarian on-call during meetings.

In reproduction, some outside castrations are carried on the premises of horse station.

##### ● 7.1.8.2 Other on farm services and outside teaching

Two types of teaching on production animals are organized outside the school:

- Individual general medicine for ruminants (in outsourced clinical) and individual reproductive medicine (in partner farmers and in slaughterhouse) organized for students in 4<sup>th</sup>Y (see. table 7.4.b). The outsourced clinical is based on part-time teaching contracts with rural practising veterinary surgeons of Pays de la Loire Region (see appendix 7.2). A group of four students assists a veterinarian for all his (her) activities during one whole week. Small groups of students are brought to partner farms or to slaughterhouse. They can practice, under the supervision of a veterinarian teacher, basic gestures during the examination of the cattle reproductive tracts, diagnosis and treatment.



Table 7.4.b Number of patients (individual cases) seen on outside teaching in the past three years

Species	Number of patients			Average
	2012-2013	2011-2012	2010-2011	
<b>Food producing animals</b>				917.3
Cattle <sup>(1)</sup>	948	870	886	
small ruminants <sup>(1)</sup>	16	16	16	
pigs				
other farm animals				
Equine				
Other				

(1) 4<sup>th</sup>Y level / 4 to 8 students per group

- Farm visits are devoted to the discovery of different livestock productions and the learning of population medicine in bovine productions (4<sup>th</sup>Y students) and in all other (pigs, poultry, fish) productions (5<sup>th</sup>Y students) (see table 7.4.b'). These outdoor activities are facilitated by the high density of farms in Pays de la Loire Region. Oniris provides three 9-seat minibus for the student transfer.

Table 7.4.b' Number of herd health cases seen on outside teaching in the past three years

Species	Number of visits			Average
	Year 2013-2012	Year 2012-2011	Year 2011-2010	
Food producing animals				150.7
cattle <sup>(1)</sup>	94	89	94	
small ruminants <sup>(2)</sup>	5	7	5	
pigs <sup>(3)</sup>	19	20	19	
poultry <sup>(3)</sup>	20	19	19	
fishes <sup>(3)</sup>	19	17	11	

(1) from 1 (48 herds) to 20 (1 herd) visits per herd / 4<sup>th</sup>Y (5<sup>th</sup>Y) / 8 (6) students per group

(2) from 1 (1 flock) to 4 (1 flock) visits per flock / 4<sup>th</sup>Y / 8 students per group

(3) 1 visit per herd / 4<sup>th</sup>Y (5<sup>th</sup>Y) / 8 to 16 (6) students per group

### 7.1.9 Other information

#### 7.1.9.1 Other contributions of animals for clinical teaching

During the first years of study, students have several practical works based on the use of animal material: anatomy, biotechnology, physiology, pharmacology. However, practical works with live animals are organized for pre-clinical teaching in 2<sup>nd</sup>Y and 3<sup>rd</sup>Y. These practical works are part of propaedeutic learnings and preparation to hospital activity.

**Propaedeutic:** it is mostly taught in the 2<sup>nd</sup>Y (Propaedeutic and ruminants CUs). It is based on an important number of tutorials using live animals. The three group of species are represented. Small groups of students (1/8 to 1/4 of the student promotion) can thus practice under supervision general clinical examination, examination of digestive, respiratory, cardiovascular and urinary tract, but also genital tract examination on dogs, horses and cattle of Oniris herds.

#### Preparation to hospital activity

The students in 3<sup>rd</sup>Y receive a pre-clinical teaching formalised in CUs (CU 106: clinical Communication and preparation to



hospital activity) which has several teaching modules using live animals:

- acquisition of basic skills of clinical examination of companion animals (2 hours of practical work /15 students/2 dogs) and exotics (2 hours of practical work/15 students/ 1 rat, 1 ferret, 3 turtles, 1 lizard, 3 snakes)
- acquisition of basic gestures of surgical practice (2x4 hours of practical work/30 students/ 5 rabbits)
- nursing supervised training in which very small groups of students (4-5 students / group) are immersed in VTH services 14 mornings per semester and per student (technical skills of nurse degree, validation by a skill checklist)

Finally we recall that Oniris students benefit from new rooms dedicated to the learning of technical skills for animal care and examination. Manikins and simulated models are used for «Virtual Vet» and «Virtual Critical Care» rooms (see Chapter 5). The educational interest of this new type of training is very important, especially because the self-service access supervised by teachers allows to students to repeat as much as necessary. Moreover ethical interest is obvious.

### ●● The Ecosystem and wildlife veterinary center

The CVFSE collects and treats wild animals in distress for their rehabilitation in the natural environment. Animals (birds, mammals, and reptiles / amphibians) come mainly from Bretagne and Pays de la Loire Regions. The CVFSE currently receives more than 1,500 animals per year (Annex 7.3). The students in 4<sup>th</sup>Y spend a morning (3 hours) in this center by group of 3-4 students and during the « Livestock and Public Health» semester.

### ●● The animal and environmental poison control center of the west

The animal and environmental Poison Control Center of the west (CAPAE-Ouest) fulfills three functions: information in toxicology, veterinary teaching, and computerized database. The center receives telephone calls 24 hours a day, 365 days a year. The telephone responses are provided by a team of teachers, veterinarians permanent staff and graduating students. During the 4<sup>th</sup>Y, each student spend two mornings of three hours at CAPAE-Ouest (groups of 3-4 persons) to discover this activity. These sessions aim to contribute to their clinical training with a focus on diagnostic therapeutic approach in the case of suspicion of intoxication.

The center has received over 3 years about 4,000 phone calls with an increase of 20% per year. 2/3 of these calls are from veterinarian colleagues (64% for dogs and 23% for cats).

### ● 7.1.9.2 Regional context, relations with veterinary practitioners, level of services

The west of France, where Oniris is located, is one of the most active regions for agri-food and breeding sectors. Thus, the Pays de la Loire is particularly well endowed in terms of veterinary facilities for production animals and horses. The veterinarians for companion animals are also numerous. For example, several important clinicals and a large veterinary hospital center (CHV) are close to Oniris. The territorial network can be considered dense and Oniris had to react and to find a special place to avoid a weakening of the training of its students with quantitatively or qualitatively insufficient clinical cases. Two decisions have been adopted to promote the understanding and the contribution by referred cases: to engage in a partnership policy with liberal colleagues of Pays de la Loire Region and to provide them technical platforms and expertise for which they may need.

**Partnership charter:** Oniris has a relation policy particularly original with veterinary practitioners since it is the only french school that is engaged with them through partnership charter. The founding documents are available in Annex 7.4. The three major components of this charter (pets, equine, bovine) ensure a robust framework for handling emergencies and individual or herd referred cases, in a spirit of mutual benefit.

Oniris maintains many links with veterinarian colleagues of Pays de la Loire Region:

- These veterinarians provide clinical cases and referred cases to Oniris VTH for numerous species, through hospitalization opportunities, activity of necropsy-service and population medicine.
- The companion animals and equine veterinarians frequently use the emergency services of Oniris VTH outside normal opening hours. The answering machine of veterinary clinics directs clients to Oniris ;
- Some veterinarian practitioners are involved in teaching at VTH (part-time contracts) or outside of the school in the context of outsourced clinical of animal production. Many structures are also approved by Oniris for student supervised trainings especially in the 5<sup>th</sup>Y equine and FA tracks. As such, the colleagues are involved in student assessment.

**Technical inputs and expertise:** VTH provides support to veterinarians of Pays de la Loire Region and to their clients through efficient technical platforms, service platforms, and the expertise of its teams of faculty members and clinicians. In addition to

university qualifications (see chapter 1), Oniris has a large number of board certified clinicians from european and american college specializations (see Annex 75).

For all three groups of species, most of the specialized fields can thus be covered and feed into the policy of referred cases. For production animals, the referred cases represent approximately 40% of cases of individual pathology seen during punctual visits and approximately 18 % of hospitalized cattle. The farm visits represent also 70% of referred cases.

In addition of consultations provided in the equine sector, specialized consultations are available in sports medicine and orthopaedics (by including orthopedic surgery). 100% of sports medicine cases are referred ones. For orthopaedics, 60% of cases are referred cases. In surgery, 80% of surgical procedures are referrals.

For companion animals, consultations and/or specialized activities are available in different services and cover most of speciality fields: cardiology, dermatology, endocrinology, internal medicine, neurology, odonto-stomatology, oncology, ophthalmology, osteopathy, otology, pathology of behavior, urology and nephrology, physiotherapy, endoscopy exams, imaging examinations (ultrasound, MRI). These specialized consultations represent approximately 8-10% of total consultations (about 1,800 consultations per year) and are mostly referred cases.

For all the consultations together, the average of referred cases for companion animals is from 9 to 10%. This percentage is obviously much more important for the most specialized activities (for example MRI).

#### Registration and consultation management system

Within the VTH, data from patients are entered into a software developed by the 4 French veterinary schools called "Clovis software". This software allows all VTH consultations to operate in a network. Clinical data are captured in real-time by students. Thus, each consultation report is immediately available to the entire community. The billing practices and the achievement of a quote are also done with this software.

For production animals, the cases are recorded in the Vetocom software. It is a client management software commonly used by liberal practitioners. For reasons of confidentiality, administrative and medical files are entirely managed by the hospital team (hospital practitioner and assistant and students do not have directly access to these informations).

#### 7.1.10 Ratios

Table 7.5: Animals available for clinical training (in the clinics of the Faculty or seen through the ambulatory clinic) as ratio to the number of students in the last full year of clinical training.

<b>R 11:</b>	n° of food-producing animals seen at the Faculty	666.7		
		=		= 6.061
	n° of students graduated annually	110		
<b>R 12:</b>	n° of individual food-animal consultations outside the Faculty	917.3		
		=		= 8.339
	n° of students graduated annually	110		
<b>R 13:</b>	n° of herd health visits	150.7		
		=		= 1.370
	n° of students graduated annually	110		
<b>R 14:</b>	n° of equine cases	1,740		
		=		= 15.818

	n° of students graduated annually		110		
<b>R 15:</b>	n° of poultry/rabbit cases		96		
		=		=	0.873
	n° of students graduated annually		110		
<b>R 16:</b>	n° of companion animals seen at the Faculty		22,400		
		=		=	203.636
	n° of students graduated annually		110		
<b>R 17:</b>	Poultry (flocks)/rabbits (production units) seen		19		
		=		=	0.173
	n° of students graduated annually		110		
<b>R 18:</b>	n° of necropsies food producing animals+equines		381		
		=		=	3.464
	n° of students graduated annually		110		
<b>R 19:</b>	n° poultry/ rabbits necropsies		300		
		=		=	2.727
	n° of students graduated annually		110		
<b>R 20:</b>	n° of necropsies companion animals		214.7		
		=		=	1.952
	n° of students graduated annually		110		

### 7.1.11 Other species

Concerning the other food-producing animals, 130 fishes are already mentioned in the previous tables. These are live fishes, experimentally infected, and then examined by students during tutorial works. These fishes are then euthanized and necropsied by the same group of students.

Similarly, the 96 poultries shown in the table 7.3 are examined living by the students and will be then necropsied.

## 7.2 Comments

### 7.2.1 Structuring of hospital

Following to the EAEVE report of 2003 and on the basis of the experts' analysis, the structuring work of the hospital has been widely amplified with stated objectives of decompartmentalisation and the pooling of tools, the mutualised operating rules, improvement of public service results (extension of opening hours, emergency services) and to referring veterinarians (strengthening of expertise, establishment of technical platforms). At present, the VTH is a real solid pillar of the clinical training of the students with a functioning administratively unified: a hospital director (veterinarian and faculty), supported by an administrative assistant and an office, staff assigned to VTH and a dedicated budget (see appendix 7.6).

The efforts to structure the VTH also focused on outdoor activities in the field of production animals. The organization and the achievement of contracts allowed the increase of medicine cases of cattle, the implementation of aquaculture activities, and a skill improvement in pig and poultry.

### 7.2.2 Pre-clinical and transversal teaching

The pre-clinical teaching has been structured and developed: the students have a broad access to healthy animals and to virtual teaching models before the beginning of their clinical training at the Oniris VTH.

#### ● Necropsy

Concerning necropsies, the R20 ratio reaches the recommendations. Given the number of consultations carried out on companion animals, the ratio is not high. We can explain this disappointing by difficulties of functioning (aging building, understaffed ... reduced time slots). Corrective measures have been taken and a new building is now operational (it was opened in 2012). It meets current safety standards and also allowed to increase the possibilities of large necropsy animals (cattle, horses).

To strengthen the teaching team and expand the opening hours of the service, the recruitment of a fourth specialist in veterinary pathology, as assistant professor, is planned in 2014.

Also, the new necropsy service (necropsy-service) dedicated to charged necropsies and opened on 2012, especially focused on bovine necropsies, is planned to meet the need for equine necropsies from the west part of France. Both of these developments should allow for the development of the clinics for necropsy, as we plan to use the equine and bovine necropsies as teaching material for the 4<sup>th</sup>Y veterinary students.

### 7.2.3 Clinical teaching

The recommendations made by the experts during the 2003 evaluation helped us to evolve our clinical teaching by strengthening in the sectors deemed deficient in human resources and/or materials. Renovations were made, new buildings have been built and equipped, faculty members were trained or recruited, by promoting the strengthening of our teams with board certified colleagues. The effort also focused on the student supervision by technical and hospital staff. All these improvements require choices that are presented below by different sectors.

#### ● Production animals

Following to the last assessment by EAEVE and recommendations made by the experts about production animals curriculum, we made the choice to strengthen our teaching in individual pathology of ruminants by acting on two levels:

- A significant increase of the activity of hospitalization and the chaining hospitalization-necropsy which is a real asset in the training of students. They are thus exposed to many and varied cases (the average over the last three years is 537 versus 278 in the 2003 report). Moreover, they are involved in the diagnostic approach. In 5<sup>th</sup>Y, the students take in charge the total healthcare of sick animals during their medicine surgery sequence. They also practice surgical procedures in total autonomy

and link clinical and lesion tables.

- The implementation of the outsourced clinic, that allows students to see the variety of cases in which a rural veterinarian is confronted daily.

These changes have allowed us to increase significantly the R11 ratio. It compensates R12 ratio which is still low but satisfies recommendations (R12 = 8.339 instead of 8.325).

In addition, it seems important to emphasize a specificity of our vet curriculum: the teaching in production animals is strongly oriented toward the discovery of breeding and population medicine through educational activities in small groups of 6 to 8 students. This choice supports the overall development observed in our region toward preventive and care of collective medicine and production animal problems. Oniris is involved in this effort during the 5<sup>th</sup>Y track « production animals » organized in sequences, complemented by supervised practice trainings which meet these learning objectives: medicine and surgery, health herd management, audit in breedings with problems and the behaviours to be adopted according to the grounds of appeal.

At the same time, the teaching of bovine theriogenology, essential for rural activity, has undergone a restructuring which emphasizes the progress in time for students with sequences in 2<sup>nd</sup>Y (propaedeutic practical works). This reorganization also emphasizes animal production topic weeks in 4<sup>th</sup>Y and 5<sup>th</sup>Y and is based on both internal and external animal resources (slaughterhouses, farm visits). The pedagogical choices preserve acquisition of skills needed to individual exercises (obstetrics ...) and sequences dedicated to the pathology observed in breeding: pregnancy diagnosis, sexing and infertility.

### ● Equine

For equine as shown in the R14 ratio, the total number of cases is satisfactory and the variety of cases provides to the students a rich and diversified training. However, the total number of patients tends to decrease despite a constant financial report. A possible explanation is the effects of the economic crisis on the French equine sector: fewer horses are brought to the VTH but the level of care has increased in valuable horses.

At a qualitative level, numerous additions of services and strengthenings of technical platform have been made since 2003:

- The opening of equine emergencies in 2009 with the recruitment of an ECVS assistant professor and a service now open 24 hours a day and seven days a week. Since september 2013, surgical colic are treated to emergencies. Since its creation, the activity of this service has a rapidly grown and allows to students to participate directly in the admission and treatment of these patients.
- Equine scintigraphy facilities in 2012.
- The construction of a new building funded by the Pays de la Loire dedicated to equine emergencies with two consultation rooms, 4 boxes for intensive care, 10 conventional boxes, 2 recovery boxes and a surgery room. This new building should lead to double of the current hospitalization capacity.
- The acquisition of new high-tech equipments: diode laser, surgery table, endoscopy, anesthesia, and resuscitation equipments
- A positive audit on facilities and education in equine chemotherapy allowing us to treat cancer patients

4<sup>th</sup>Y and 5<sup>th</sup>Y students are directly and actively involved in the care of horses received at the VTH. Clinical rounds take place every morning, where all hospitalized horses are visited. Complementary examinations and treatments are then explained by clinicians. Each evening, students participate to a surgery round table. The preoperative check and the surgical planning are discussed and explained for each animal which need be operated the next day. Every friday afternoon a thematic round table is organized and cases seen in clinics are presented by students under the supervision of clinicians. Specific rounds of surgery and medicine are also made every week. In addition, there are practical and tutorial works (lameness, bandages...) during rotations.

### Practical and clinical training of equine reproduction

For equine reproduction, except castrations and the activity of the stallion station, the number of cases received at VTH is relatively small. For most of them, they are taken care by their attending veterinarians. That is why the training of Oniris students is based on the use of the teaching herd (21 mares and one stallion in 2013-2014). This training has been implemented for several years and has shown its effectiveness, particularly in terms of recognition by the profession. It is well structured around dedicated teaching sequences, complementary to propaedeutic in 2<sup>nd</sup>Y: in 4<sup>th</sup>Y with 3 sessions of tutorial works during the equine rotation and in 5<sup>th</sup>Y with a full practice week. For example, in 2012-2013, the students of 4<sup>th</sup>Y have faced a total of about 480 cases covering all common situations of practice (8 cases / session, 3 sessions / week, 20 weeks a year).

### ● Companion animals

The analysis of figures shows that clinical teaching in this sector is based on an important number of cases. In addition, our system of rotations among clinical services leads to exposure to all situations of common practice. The training of our students for companion animals is satisfactorily assured.

However, we would like to increase the percentage of referred cases. The local context does not encourage this redistribution, especially due to the existence of two very competitive structures in Nantes' urban area, which have specialists and receive many referrals.

In addition to overall volume of activity, an intensive work has been done in order to create and develop sectors since the last assessment by EAEVE:

- The strengthening of intensive care unit whose activity has significantly increased with the recruitment of an assistant professor diplomate and a professor position in emergency medicine. This progress is both quantitative (increase in the number of hospitalized animals) and qualitative (level of care provided, degree of specialization of interventions, creation of a blood bank). In addition, a virtual learning room dedicated to resuscitation on manikins (Virtual Critical Care) will be put into use in 2014. It will contribute significantly and ethically to learning needs of specific skills in this sector.
- The clear identification of a specialized activity in oncology (consultations and chemotherapy), with the opening of specialized consultations (2 ½ days a week), construction of facilities dedicated to chemotherapy and the hospitalization of animals in chemotherapy according to current norms.
- The oncology is bound to develop with the installation of a center of radiotherapy and nuclear medicine at the beginning of 2014-2015 school year. Thus, new treatments will be available within the VTH: treatments of superficial and deep tumors by external radiotherapy or brachytherapy, innovative therapeutics (radioimmunotherapy of canine lymphoma, radionuclide therapy of aggressive breast cancer and brain cancer). The imaging platform for oncology is extremely efficient: PET/CT imaging, three-dimensional scintigraphy (see appendixes 7.7 and 7.8). The progressive structuring of the veterinary cancer center will be based on these elements in an essential multidisciplinary context.
- The creation of a clinical unit of physiotherapy (hydrotherapy equipments, electrotherapy and lasers).
- The strengthening of consultation sector and hospitalization of exotic animals.
- The integration of nutrition consultations in the heart of preventive medicine and internal medicine.
- The establishment of a new teaching in clinical communication.
- The restructuring of welcome area.

### Clinical communication

The need to develop specific skills in veterinary clinical communication has been recognized for a long time but has never been formally organized in french veterinary schools. The veterinary curriculum at Oniris now offers to students the opportunity to gain specific skills in clinical communication. These courses are required for students in 3<sup>rd</sup>Y, 4<sup>th</sup>Y, and 5<sup>th</sup>Y. All 3<sup>rd</sup>Y students participate in clinical simulations with trained stakeholders who improvise and adapt to the student's behavior. The selected clinical situations provide students with opportunities to practice and acquire communication skills for building client/patient relationship in a controlled and safe environment. All the simulated scenarios were developed by veterinarians from Oniris to cover basic areas of client situations: angry clients, bad news, clients with financial constraints, difficult decisions ... The simulations take place in an especially designed simulated examination room in the veterinary teaching hospital. In addition to the standard equipment required in a veterinary examination room, this room is equipped with a one way

mirror, video and audio recording equipments, as well as computer workstations for collecting data from students and clients.

Closely linked to this teaching and to expose our students to telephone contact, to book appointments, as well as advice and sale dimensions of their future profession, a restructuring of welcome area was built. It provides benefits to all VTH users.

### 7.2.3 Biosafety in Hospital

Biosecurity is an essential element of good hospital practices. The appropriate prevention and control of infections are fundamental for the implementation of a medical and veterinary surgery of high level.

The VTH is both a clinical structure and a veterinary education establishment. It seems essential that most appropriate measures in this area are implemented.

A very important analysis work was carried out and resulted in a document that summarizes the biosecurity measures applicable within the VTH in 2014 (Appendix 7.9). They were developed in a collegial manner by all stakeholders involved in the VTH clinical activity. These measures have been put in place to adapt as best as specific health constraints of Oniris VTH activity and in its geographical context.

## 7.3 Suggestions

In general, the clinical veterinary teaching in France is based on a strong involvement of students: they do many things themselves and are encouraged to do more than look carefully. In particular, Oniris attaches considerable importance to positioning students as active learners. The VTH can be considered as an important support of clinical teaching which largely provides the number of cases necessary for practical education. This training is only possible under a close and quality supervision. We already highlighted in the assessment of 2003 the importance of clinician staffs of the school: hospital practitioners and assistants. We expressed the desire to create a body of hospital practitioners which is, to date, not fully effective (recognition of the profession, but in the body of Research Engineers). They are nonetheless essential to maintain small size groups and to develop the autonomy of each student. Similarly, the status of «Clinical Professor» does not exist in France and this weakness has already been highlighted in the objective and academic staff chapters. Most of comments and suggestions about the clinical teaching is focused on the problem of group size and the ratio number of groups / number of supervisors. The increase in incoming flows of students, if it continues, should lead obviously to the increase of the number of clinical supervisors, in which the nursing staff should be included (and increased). We can note that this increase will impact also the practical teaching of anatomy, presented at the beginning of this chapter (group size / animal source materials).

### ● Production animals

Ideally, it would seem important to preserve teaching sequences in small groups, a guarantee of educational quality. The diversity of activities in individual and collective pathology must also be maintained. It is a real source of strength and our originality. If external constraints were relaxed, this would involve an increase in the supervision potential by the recruitment of expert clinicians to enhance all activities in this sector. Indeed, an improvement target identified in bovine individual medicine concerns the number and the variety of interventions carried out, especially in surgery. Therefore, the medicine and surgery sequence in 5<sup>th</sup>Y benefits to groups of 6/7 students. They can take full advantage of this sequence even if it is short: 10 half days over 2 weeks for each group. This limit in our training of production animals in 5<sup>th</sup>Y could be offset by the increase of human resources, in particular expert clinicians.

Similarly, the educational role of necropsy-service is not yet fully developed but it would deserve to be.

Moreover, it is important to note that, despite the accreditation obtained by Oniris for the degrees of veterinary internship and residency in bovine medicine, these training are not taught regularly, in the absence of candidates. The students who wish to look further into their competences are recruited as assistants in VTH. Therefore, they do not see clearly the added value of an additional year of training which is non-remunerated. The way to deepen this sector would be to merge the AH/ intern and PH/resident statutes.



### ● Equine

The activity of the equine VTH has increased considerably over the last 3 years (R14 > 15). In addition to the number of cases, it is important to note the high percentage of referred cases. In the future, if the volume of activity continues to increase, it may be important to increase the number of nursing staff and teachers, in parallel with the increase of the capacity for housing the patient.

The opening of the new building dedicated to equine emergencies will improve the learning environment. Rooms dedicated to interpretation of imaging examination are planned. Cameras for viewing surgical procedures will allow to monitor remotely the surgical interventions in the operating room. The increase in the number of consultation rooms will allow to examine animals in conditions more favourable to learning.

The increase in activities, especially in emergency and imaging, if it persists, may require the increase of supervisors to potentially create services and to integrate teachings specific to these activities.

The creation of a space dedicated to orthopaedic consultations must also become a short-term priority for Oniris. Indeed, the growth of this activity within the establishment and the degree of requirement of professionals in horse sector require it. The current lack of consultation and examination areas leads us to make undesirable compromises in terms of safety and biosecurity.

### ● Companion animals/exotics

In quantitative terms, the activity of the VTH is largely satisfactory as shown by the R16 ratio. The new developments listed above must contribute to increase the number of cases and will significantly improve patients care and the level of the quality of care. In particular, we expect an increase in the percentage of referred cases, which will consolidate the position of our VTH as a french reference center. In parallel, the strengthening of the number of cases, which feeds into the basic clinical training and the structural balance of VTH, is also an objective.

In qualitative terms, the policy of recruitment of specialized clinicians must be now amplify and will concern faculty members and hospital practitioners positions. For example, recruitments are necessary in small animals, medical imaging and internal medicine. They will set up of residency programs in these disciplines. In parallel with the recruitment of specialized clinicians, the strengthening of healthcare and technical teams by qualified staff is important. All these resources will be more effective in a context of collegial working. They would emphasize the decompartmentalization and the mutualization of resources such as for the radiotherapy platform. Similarly, the development of exotic animals medicine must rely on the recruitment of an specialized clinician.

The need to strengthen the teams by two categories of staff, specialized clinicians and nurses, is expressed widely in all sectors of the VTH and must be taken into account in the future.

Finally, more generally, and for all species, the policy of our VTH is moving toward the need to take into account the quality of services and the biosafety in the hospital. An important analytical work was conducted in 2014 and will lead to a first group of remedial actions.

### Biosafety

The document produced in 2014 led to the establishment of a monitoring system: the application procedures should allow us to take into account the capacity of the VTH and to prevent the introduction and release of infectious agents.

We will also continue the improvement in this area by:

- The identification of deficiencies of protection system and their degree of severity
- The implementation of remedial actions that may be required.

Here we are in a real quality approach: clear procedures, verification and validation systems, anomalies investigations, assurance of the implementation of remedial actions. Such work should be conducted for the smooth functioning of hospital sector. It will appear in the position description of the quality specialist who will be recruited in 2014.



# CHAPTER 8





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## **LIBRARY AND LEARNING RESOURCES**

## 8.1 FACTUAL INFORMATION

In order to respond very closely to documentary requirements of users, the missions of the documentation center were defined as follows:

- To make documentation resources and document infrastructure available for a targeted audience (faculty members (71), teachers (2), researchers (31 including INRA researchers), students (615), PhD students (67) and a specialized external audience (veterinary practitioners, companies and consultants). The objective is to allow them to perform their tasks in the best conditions.
- To allow an access to specialized documentation resources in line with the expectations of faculty members and to enhance them to users
- To host, communicate, and train internal audiences (students and PhD students) to their use. The objectives are to raise awareness to the mastery of documentation tools, bibliographic writing, the respect of copyright, the use of new information materials, and of the assessment of the relevance of the information found.
- To manage the purchase of documentation resources to set up a specific fund in Veterinary Sciences and Food, in the form of:
  - Specific monographs of veterinary field: books (6,064), state theses (21,692), postgraduate theses (830), conference proceedings (830), special issues (713), encyclopedias ... and multimedia resources (CD-ROM - DVD audio and video (208)).
  - electronic serials subscriptions, about 15 000 titles via the platform of aggregator AtoZ (<http://atoz.ebsco.com/Titles/ECOL8B2F?lang=en&lang.menu=en&lang.subject=en> ).
  - 1,930 search sessions in 2010 and 2,660 in 2013
  - electronic serials subscriptions, 96 titles, including 70 in veterinary field.
  - specialized online bibliographic databases (Ten bases for which the figures are presented in appendix 8-1)
  - offprints or scientific papers specific to research, approximately 300 requests in 2013.
- To make these documentation resources available to all internal users (for free) and external (with an access card), in the form of a library catalogue available on the internet (OPAC: Online Public Access Catalog, with customized profile), to meet their different documentary needs.
- To promote the internal productions of students: veterinary state theses, engineering end-of-study dissertations, internship reports .
- The budget for these documentation resources is about 200 K€ for teaching and research which represents an investment rate of 0.25% per user (faculty members, students) and 0.008% of school budget.

### 8.1.1 LIBRARY AND OTHER INFORMATION TECHNOLOGY SERVICES

The documentation Center is located on two geographic sites: Geraudière site specialized in food sciences and Chantrerie site specialized in veterinary sciences.

A team of eight people are involved in the development of activities (for a full-time equivalent of 6.3). Each documentary unit is managed by a documentalist who is also site's coordinator. They are specialized on their thematic (food sciences or veterinary sciences) and are accompanied by their teams [three documentalists of category A: research engineer, design engineer, assistant Engineer, three library assistants of category B, two with an administrative secretary status, a library technician and three library agents of category C]. The documentary unit dedicated to veterinary sciences is composed of four people (for a full-time equivalent of 3.1 ) and two counselors students for permanently-manned from 5:30 pm to 7:00 (six hours per week).

The opening hours are:

#### During teaching periods:

Monday to Thursday from 8:30 am to 7:00 pm

Friday from 8:30 am to 5:00 pm

#### During school holidays:

Monday to Friday from 9:00 am to 5:00 pm

The service is under the supervision of the general secretary and develops close relationships with the director of studies and student life.

A user committee (fifteen representatives of teaching and research departments and students) contributes to the accomplishment of the missions. It allows to make documentary strategic choices. An internal regulations defines the rules of access to documentary spaces, the reception conditions, and the tariffs of services approved by the Executive Board.

#### ● On the veterinarian chantrerie site

The users can continuously access to documentary spaces about 50 hours per week.

They have 600 square metres of space with 140 seats and ten self-service computer work stations installed in a specific room. Two copiers (one black & white, one color) are available with function «scan to email» in order to adopt reflexes as good citizens on the consumption of paper and illegal photocopies.

The balance sheet of 2013: 439 active readers for 2,028 lending of books which represents an average of 12 lendings per person. The maximum of lendings per person is 78. The most borrowed document is a propaedeutic CD (61 times).

The catalog of the veterinary documentary space has 32,000 references with 21, 692 veterinary state theses (theses from the four french veterinary schools since their creation. For the most recent theses, there is a link to the full text).

Some resources are available on IP address recognition of the school, others on the learning platform Moodle and others with login and password. A project of roaming access is being studied.

#### ● The assistance and the training of users on the use of documentary resources represent a significant investment of documentation service

On the Chantrerie site, a presentation of the documentary space is included in the curriculum of students in 1<sup>st</sup>Y (eight times one hour). As part of this unit CU, two hours of lessons, three sessions of tutorial works and a restitution session of two hours are given to students. Presentations of documentary tools are also made in amphitheatres on the request of an enough group of interested people (one hour). Henceforth, a presentation of these tools is integrated into the curriculum of students in 3<sup>rd</sup>Y. As part of Man-imal master, the students receive this training in english. Individual trainings are by appointment only.

The valorisation of internal productions of students is a significant activity with 3,300 Nantes veterinary state theses and 3,800 end-of-study dissertations and internship reports in various branches.



All Nantes state theses since 1999 are available on the institutional website at the following address: <http://www.oniris-nantes.fr/ecole/center-de-documentation/theses/>. Readers have a link to the full text of some state theses. In 2013, 114 veterinary state theses were defended in Nantes and 98 are online.

The bibliographic records of state theses are listed in the Kentika Chantrerie catalog at the following address: <http://kentika.oniris-nantes.fr/Main.htm> with search criteria: Author Name, Title, Keywords. On-site consultation is very high. These theses can also be borrowed for a period of 15 days. In 2013, 381 theses were lent to readers against 667 in 2010. The public probably prefers the electronic theses.

### 8.1.2 Computer resources

Excluding library, users have on veterinary campus (Chantrerie site) two distinct computer rooms (36 and 16 seats, respectively) and internet access in all teaching rooms. Free Wi-Fi is also available in specific areas.

#### ● The e-learning platform «Moodle»

This unique platform is used by students of veterinary and food science curriculums. The veterinary students can access all the resources put online by faculty members free of charge, 24 hours a day and 7 days a week. These documents include all handouts in pdf format, all powerpoint presentations that served as supports for lectures, practicals and tutorials but also, videos and all self-learning tutorials for each CU.

This platform also allows the creation of online activities: dedicated collaborative spaces (faculty members, students...), collaborative forums by themes, questionnaires and surveys (assessments, skill passports ...), data archiving from databases (internship proposals, job offers ...), self tests or for exams (languages, specialities ..)

Moreover, Oniris has an institutional messaging with a private storage area for data.

## 8.2 COMMENTS

A set of methodological resources are made available to students on web pages of the documentation center and on e-learning platform Moodle. These resources can also be transmitted through courses and projects: support documents for searches and bibliographic writing, reader's guide, expert search guide for catalogs, user guide for suggested electronic resources.

More than 80 pages are an « orienting compass » in the documentation resources on web pages of Oniris websites with a dozen of topics.

- <http://www.oniris-nantes.fr/ecole/center-de-documentation/accueil-center-de-documentation/>

Twenty pages focused on the use of documentation resources for an educational objective are available on the e-learning platform Moodle.

## 8.3 SUGGESTIONS

#### ● Commitments made since 2010

The involvement in the network Couperin (University Consortium of Coordination of actions in favour of Scientific and Technical Information (IST), access to the platform of the National licences which has been approved in April 2013.

The active participation in the network of documentalists of the « Conférence des Grandes Ecoles (CGE) », which allowed an opening on national projects in the sector of information and documentation: French digital scientific library (BSN), Excel-



lence Initiative for Information called ISTEEX (massive national procurement policies for online access to retrospective collections of the scientific literature in all disciplines), open archives.

The integration in the network of SUDOC (University Documentation System) libraries has encouraged the development of relationships with the university libraries.

#### ● **Projects which are being studied in 2013-2014**

- The reporting of university theses in the STEP application (interface for professionals who manage theses) and their digital deposit in STAR application (national implementation for the deposit and promotion of university theses) of the Bibliographic Agency for Higher Education (ABES), in partnership with Oniris research and doctoral studies office (DRED) and the online platform LUNAM Docteur (management and monitoring of doctoral training).
- Regular discussions are being traded within the network of documentalists from the four french veterinary schools. A reactivation of this working group is planned in the framework of the implementation of national discussions on the french agonomic, veterinary, and forest institute in order to analyze the common documentary problems.

The ongoing issue of the documentation center remains the adaptation of the document base to teaching and research topics, the needs in specialized documentation resources for faculty members, PhD students and students, faced with major technological and societal changes.

#### ● **Medium-term projects (3 years)**

- To create a real digital working environment (ENT) for veterinary students in core education by moving towards a second version of Moodle but also by developing in each discipline of teachings the information and communication technologies (TICE), which include self-learning and self-assessment modules and which give access to the main digital documentation resources for these teachings (via links with the IT platform of documentation center).
- To develop online teachings internally (such as SPOC (Small Private Online Classes) in disciplines and on topics chosen collectively.
- To create a continuing education programme for veterinary diplomates in the form of paying teaching digital ; these modules must use TICE but also include a self-assessment and provide differentiated digital documentation resources to learners (via links with the IT platform of the documentation center ).
- To get access to documentation resources in the form of e-books readable on computers, on digital tablets and smart-phones for Oniris scientific community.

# CHAPTER 9





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## ADMISSION AND ENROLMENT

## 9.1 UNDERGRADUATE COURSES

### 9.1.1 UNDERGRADUATE STUDENT NUMBERS

The minimum number of years (MNY) allowing in to successfully complete the veterinary curriculum in Oniris and in France is 5.

Table 9.1: Undergraduate student composition in year prior to visitation (2013-2014)

Total number of undergraduate students	614
Total number of male students	152
Total number of female students	462
Foreign students*	
- from EU countries	20
- from non-EU countries	13

\* The 33 international students are not included in the 614 number of undergraduate students.

### 9.1.2. STUDENT ADMISSION

The access to french veterinary schools is based on a competitive national examination two years of study after obtaining the Baccalaureate (Bachelor's degree). The vast majority of student diplomates come from a baccalaureate in sciences: mathematics, biology, physics and chemistry, French and a foreign language.

The entrance examination for National Veterinary School (NVS) 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 to a NVS. The general organization of competitions is under the authority of the Ministry of Agriculture. The admission of a student into one of the four NVS is determined by his or her admission ranking and choice, as determined before the competitive examinations. 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 oral selection exams.

All competitions recruit between 450 and 550 students for the four NVS each year: 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 NVS until 2013 and 137 since 2013). An applicant cannot submit more than 2 times, all competitions combined. Five competitive exams are set for entering the National Veterinary Schools in France, regarding the scholar background of student:

Competition A ([www.concours-agro-veto.net](http://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 the NVS. Competition A TB ([www.concours-agro-veto.net](http://www.concours-agro-veto.net)) is intended for students in «technology and biology» preparatory classes recruiting diplomates 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 competition A adding biochemistry and biology techniques and geography. Students who pass this competition represent 1.71% of those admitted to the NVS.

Competition B ([www.concours-agro-veto.net](http://www.concours-agro-veto.net)) is accessible to university students enrolled in the 2<sup>nd</sup>Y (after L2 approval) or 3<sup>rd</sup>Y of a scientific bachelor program in the 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 examination represent 9.40% of

students admitted to the NVS.

Competition C ([www.concours-agro-veto-bordeaux.fr](http://www.concours-agro-veto-bordeaux.fr)) is designed to recruit students holding the following university degrees: DUT specialty in Biological Engineering/Applied Biology; some BTS and BTSA. Students who pass this examination represent 7.69% of those admitted to the NVS.

Competition D ([www.concours-agro-veto.net](http://www.concours-agro-veto.net)) 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 master level. In addition to the proof of eligibility based on the file and motivation, candidates are selected after an interview. Students who pass this competition represent 0.86% of those admitted to the NVS.

Admission to a veterinary school 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 knowledges enabling the student to successfully pass the Baccalaureate, most often in section S (i.e., scientific, with tests emphasizing hard sciences and with a high grade).
- In the second step, the student can:
  - o 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: Ecole Normale Supérieure (training of future university professors, top-level scientific administrators, etc.), Agricultural Schools and Veterinary Schools. This is the highly selective competition called A.
  - o register (regardless the baccalaureate serie) in the first year of a bachelor in Biological Sciences (L1) and then to enter the competition called B to enter a NVS.
  - o take a BTS, agricultural BTS or DUT program characterized by some options and enter the competition called C.

Competitions A, B and C take place in two steps: a written part to select students who, above a minimum overall average, are declared eligible; an oral part to select those to be admitted among the eligible students.

Competition D is for candidates (1 candidate per year and per school) who are first selected from on their record (CV and letter of motivation); after this test of eligibility, they are definitively admitted after an interview.

The diversity of competitive examinations allows students from various socio-professional classes, including underprivileged classes, to take one of the selection examinations. 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. In addition, volunteer students, with the support of the administration, explain the possibilities of studying at a "Grande Ecole" like the NVS («cords of success») to secondary school students from underprivileged social classes. Through the BRIO initiative (national social inclusion programme), Oniris collaborates with upper secondary schools to encourage students from economically disadvantaged families to pursue higher education goals. Participants are students in their second to last year at upper secondary school who come from economically disadvantaged backgrounds. Participants are mentored by small groups of student tutors from Oniris and the other "Grande Ecole" for their final two years of school; mentoring takes place in the form of workshops held 2-3 times a month addressing various topics including current events, professional presentations, international cultures, theatre and the arts, and practical aspects of post-secondary study. Company visits, cultural outings and trips abroad are also a part of the programme.

Additional admissions may be authorized through admissions on title. These admissions concerns primarily foreigners from countries without their own veterinary education. 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 accepted students obtain a university degree that doesn't allow the practice of veterinary medicine in France. To practice veterinary medicine, candidates must be nationals of one of the Member States of the European Union or of one of states covered by the agreement on the European Economic Area. They must also pass a knowledge exam organized annually by the Ministry of Agriculture.

Because of the increasing number of students imposed by the Ministry (+ 20 students each year per french veterinary school since september 2013), the school must adapt to this change without any additional budget. In some subjects where live animals are used, the teaching methods must change because there are from 2 to 5 additional students per group in supervised

practical trainings. Moreover, the Faculty must adapt the capacities of its auditoriums and classrooms (see 9.2).

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

Year	Number applying for admission	Number admitted		
		'Standard' intake		Other entry mode (describe)
		4 NVS	Oniris	
N* (2013)	??	548	137	0
N – 1 (2012)	??	468	117	0
N – 2 (2011)	??	468	117	0
N – 3 (2010)	??	468	117	0
N – 4 (2009)	??	468	117	0
Average		484	121	0

\* year prior to evaluation

### 9.1.3 STUDENT FLOW

Table 9.3: Student flow and total number of undergraduate veterinary students (year 2013-2014)

	Number of students present after admitted year 1	Number of additionally admitted students**
1 <sup>st</sup> year*	142	5
2 <sup>nd</sup> year	128	7
3 <sup>rd</sup> year	110	4
4 <sup>th</sup> year	123	2
5 <sup>th</sup> year	111	0
6 <sup>th</sup> year	-	-
>6 <sup>th</sup> year	-	-
<b>Number undergraduate veterinary students</b>	<b>614</b>	<b>18</b>

\* mark year matching MNY

\*\* number of students who repeat their year

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

Year	Number graduating	
	DEFV	Exercise Thesis
N* (2013)	111	114
N – 1 (2012)	106	100
N – 2 (2011)	117	97
N – 3 (2010)	97	54
N – 4 (2009)	121	95
Average	110.4	92.0

\* year prior to evaluation

Table 9.5: Average duration of studies (distribution of students in years)\*

Duration of attendance	Number
Year 0**	557
Years 1	51
Years 2	5
Years 3	1
Years 4	0
Years 5	0
Years > 5	0

\* year prior to visitation

\*\* year matching MNY allotted to the veterinary curriculum

A compulsory examination session (1<sup>st</sup> session) is organized each semester for each course unit (CU) or clinical sequences taught during the semester. A remedial session (2<sup>nd</sup> session) is held before the next academic year for students who have not obtained all the CUs or clinical sequences. Students who, at the end of the remedial session in 1<sup>st</sup>Y, 2<sup>nd</sup>Y and 3<sup>rd</sup>Y, have failed no more than two CUs are authorized by the teacher council to repeat and thus retain the earned CUs. At the end of the remedial session in 4<sup>th</sup>Y, students must validate all the CUs, all the clinical sequences and the 14 weeks externships without any exception. At the end of the remedial session in 5<sup>th</sup>Y, students must validate all their year without any exception and then must defend their theses for the State degree of Doctor of Veterinary Medicine.

Each year can be repeated only once (Article 9 of the Order of 20/04/07). The exclusion of a student is decided by the Director, after proposal by the teacher council.

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## 9.2 COMMENTS

For each competition, upon the entry into a veterinary school, a student masters the scientific plan in biological sciences, and has the general intellectual culture needed to assimilate knowledges and skills imparted during the veterinary program.

The number of students admitted by competitive examination is set annually by the Ministry of Agriculture according to its own factors and criteria. The opinion of the Faculty is requested each year but the Ministry is not required to follow it.

The adequacy of the facilities and teaching program to train the existing number of students is questionable because of the increasing number of students imposed by the Ministry (+ 20 students each year per french veterinary school). The amphitheaters were not designed for 137 students and the school only added rows of chairs in each auditorium. The classrooms for supervised or practical trainings by groups of 35-40 students are only 7 in the school; there is no problem in 2013-2014, because only students in 1<sup>st</sup>Y are 35-40 per group. Nevertheless, the school must build from 3 to 5 classrooms adapted to groups of 35-40 students in the next years.

The school ensures that satisfactory progress are made by students in their studies. An academic advisor, a teacher, is assigned by the Veterinary Studies Office for each student at the entry to the school. Students who encounter difficulties or who seek advice on their careers can consult their academic advisor or the director of the veterinary education and student life. The director of the veterinary education and student life also built a personalized program of study for each student who is repeating. Postponement of examinations or courses is possible for students who encounter health problems or serious personal problems. The director of the veterinary education and student life is always available to receive and advise students regarding any school or personal problem.

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## 9.3 SUGGESTIONS

The Ministry of Agriculture decided to increase the number of students admitted in the french veterinary schools from 117 to 137. Oniris thinks that the developed arguments are probably not the good ones: (i) the reference year is a year without any graduated student in France because of the reform in 2007; (ii) this is not because the number of students increases as graduated students will go to more work as veterinary in production animals; (iii) this is not because the number of students increases in France that the number of students going to study veterinary medicine and surgery in other countries (Belgium, Romania, ...) will decrease. Furthermore, no additional budget is given to the schools to ensure the training of 17% more students per study year. So we believe it is necessary to make a qualitative and quantitative assessment before continuing with this increase of 20 students per year and per school.



# CHAPTER 10





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## **ACADEMIC AND SUPPORT STAFF**

## 10.1 FACTUAL INFORMATION

Table 10.1: Faculty staff provided for veterinary training

	Budgeted posts		Non-budgeted posts		Total	
<b>1. Academic staff</b>	<b>VS</b>	<b>NVS</b>	<b>VS</b>	<b>NVS</b>	<b>VS</b>	<b>NVS</b>
Teaching staff	40.4	2			40.4	2
Research staff	27.6	2.5			27.6	2.5
Others (specify)		1.5	24.82		24.82	1.5
<b>Total</b>	<b>68</b>	<b>6</b>	<b>24.82</b>	<b>0</b>	<b>92.82</b>	<b>6</b>
<b>Total</b>	<b>74</b>		<b>24.82</b>		<b>98.82</b>	
FTE providing last year teaching						
<b>2. Support staff</b>						
a) Responsible for the care and treatment of animals	19.55		19.1		38.65	
b) Responsible for the preparation of practical and clinical teaching	19.78		12.35		32.13	
c) Responsible for administration. general services, maintenance, etc.	43.4		21		64.4	
d) Engaged in research work	36.37		85.15		121.52	
e) Others (specify)	10		24		34	
<b>total support staff</b>	<b>129.1</b>		<b>161.6</b>		<b>290.7</b>	
<b>3. Total staff</b>	<b>203.1</b>		<b>186.42</b>		<b>389.52</b>	

Academic Staff: Others = PLPA, PCEA, Hospital practitioners and assistants

e) others = analysis laboratories, veterinary education department, Manimal, continuing education, Directorate for research and doctoral studies.

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

DEPARTMENTS	ACADEMIC STAFF							AUXILIARY STAFF							
	Pr		Ass Pr		A Ass Pr		AH	PH	AUTRES	TECHNIQUE			ADMINISTRATION AND GENERAL SERVICES	TOTAL	
	VS	NVS	VS	NVS	VS	NVS				TEACHING	RESEARCH	OTHER			
TEACHING															
BPSA	6.75	0.5	3.4		0.5						11.3				22.45
MSC									1.5						1.5
SAESP	3.5	1	8		1						11.03				24.53
SC	4.4		7		2.5	0.5				0.5	7				21.9
Manimal														7	7
RESEARCH															
DEPARTEMENTS															
Human Health, Biomedical research and animal models	4.5	0.5	8.4		0.5	0.5				0.5		18.9			33.8
Food quality and safety	2.5	1	1									67.22			71.72
Animal Health Control and public health	3		5.5		0.5	0.5						10.05			19.55
PLATEFORMS															
Preclinical research and Investigation Center (CRIP)															
Environmental Veterinary Platform	1		0.2									18.75			19.95
Gene Therapy center									1.5			6.6			8.1
HOSPITAL	0.6				0.5		18.82	6					38.65		64.57
Analyses	0.25												13.6		13.85
General services														80.6	80.6
Total389.52															

Pr: Professor

Ass Pr: Associate Professor

A Ass Pr: Adjunct Associate Professor

Table 10.3: Ratios students/staff

<b>R1</b>	n° Undergraduate veterinary students	615	
	n° Total academic FTE in veterinary training	98.82	6.223
<b>R2</b>	n° Undergraduate students at faculty	1025	
	n° FTE total faculty	147.52	6.948
<b>R3</b>	n° Undergraduate veterinary students	615	
	n° VS FTE in veterinary training	92.82	6.626
<b>R4</b>	n° Students graduating annually	110	
	n° VS FTE in veterinary training	92.82	1.185
<b>R5</b>	n° FTE support staff in VT	290.7	
	n° FTE academic staff in VT	98.82	2.942

#### ● Allocation modalities of human Resources

As in all public institutions, Oniris is subjected to job ceilings imposed by the Ministry of Finances, reducing the possibilities for recruitment of permanent staff and contractual employees. For the school, the job ceiling for permanent staff is set at 291 full-time equivalent (FTE), and corresponds to the number of Oniris Officials in post in 2011. The job ceiling for contractual employees was 72 FTE, determined on the basis of the rules defined by the Ministry of Finances. This job ceiling is currently under negotiation. The only agents currently exempt from these job ceilings are the contractual employees paid from Oniris funds (from 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 incomes, the missions and responsibilities. Staff in category B cannot be replaced by staff in category A. Similarly there is no flexibility between positions of faculty members and administrative and technical staff (IATOSS).

In contrast, the choice of category and job profile of contractual employees are determined by the school.

#### ● Allocation of resources within the school

Target organizations have been established for several years and generalized in 2013 to manage better the workforce but also to meet the anticipation of personal flows, given developments in professions and job ceilings. This procedure allows to identify areas which need to be strengthened but also to determine the resource allocations according to strategic priorities and the changes in the missions.

This monitoring helps to determine the workforce assigned to the main missions of the school and to evaluate better the costs and the efficiency of each sector.

The requests for contract staff are made in the form of turn-around file. Each recruitment is decided by the Directorate-General given to the opportunity, financing opportunities and job ceiling.

#### ● Easiness/difficulty of recruiting and retaining staff

In addition to the existence of job ceilings, the difficulties of recruiting staff are of various types:

- The length of the administrative recruitment procedures for permanent staff: a recruitment campaign lasts about 6 months due to the intervention of the line ministry which is the statutory employer, and the consultation periods of bodies of social dialog prior the mobilities of officials.

- The absence of recruitment pool for permanent staff for some missions. Some trades are not insured by officials: animal keeper, specialized technical personnel (for example electromechanical workers), manager responsible for Relationships businesses ... However, these positions are offered initially to staff before recruiting contract staff, which increases the time of recruitment.

There is no problem of retaining staff within the school for which turnover is very low (1%). Management rules for contractual employees were put in place for several years to adjust their status to officials status and to that of permanent staff in terms of salary and career development, which increases the attractiveness for these persons.

### ● **Strong trends of development of skills over the past decade**

Two major trends have emerged in recent years: specialization and professionalization. The recruitment of specialists diplomates from European and/or American colleges has become a priority for veterinary faculty members, especially clinicians. The targeted opening toward professionals is a strategic choice to strengthen teaching staff and expand the scope of expertise in certain disciplines (e.g. surgery). It is the same with for the professionalization of some functions within the school. In addition, Oniris mentions in all job profiles the need for international experience and promotes the recruitment of teachers-researchers who were mobile.

Regarding more specifically the non-teaching staff, they are encouraged to conduct ongoing training sessions within their respective spheres of competence and in more general areas: new tools, health and safety ...

### ● **Replacement of vacant positions**

#### ●● **For faculty members**

Oniris put in place a true recruitment policy based on a four-year plan for positions of faculty members. This plan was created to meet developments of curriculum and the need to ensure internal promotions plan while using external resources to bring new skills. It allows Oniris to have a medium-term vision on future developments.

This plan has been approved within the various Oniris bodies (teacher council, scientific committee, executive board) before being submitted to the line ministry that organizes and conducts the recruitment procedures.

The management of the school, depending on activities and strategic directions, can allocate finances on its own budget.

In the field of research, staff changes are generally related to the signature of research agreement and partnership with INRA, INSERM and Nantes University.

For teaching, a specific number of hours provided by temporary workers is fixed annually, taking into account the programs, the number of teachers in each discipline and their service obligations.

#### ●● **For administrative and technical staff (IATOSS)**

The vacant positions are systematically examined to verify the necessity of a position substitution. Some positions may be redeployed to other activities considered as a priority. It is in this way that two positions of gardener were not renewed in 2012. The management has made the choice to use a service provider and redeploy both jobs on other missions.

**Note:** Due to the length of the recruitment procedures of officials, the school may have to recruit contractual employees or temporary workers on own funds to ensure continuity of service.

### ● **Additional staff related to services**

The activity level of service providers such as analytical laboratories or Oniris VTH helps to finance, if necessary, additional positions to take into account the increase in activity. Nevertheless, this growth in activity is limited by job ceilings.

### ● **Work regulations performed by staff outside of the school**

The law N° 83-634 of 7 July 1983 stipulates that officials and full-time contractual employees must devote the entirety of their occupational activities to their employment in 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 faculty members, interested in participating in scientific congresses, submits a mission order for signature by Directorate-General. In all cases, it is the employees who communicate their wishes. The travelling expenses are paid for out by own funds.

The leave entitlements are specified by law n° 84-16 of 11 January 1984 (officials) and by the amended decree of 17 January 1986 (contractual employees). Among the range of possibilities, the leave for personal reasons dedicated to contractual employees may be granted by the employer. It is subjected to the interest of the service and limited to three years for workers under permanent contracts. Officials may request to be on extended leave of absence (Article 51 of the 1984 law) for a maximum period of 10 years. These two types of leave correspond to sabbatical leaves granted in the private sector. During this period, the agents are not paid and don't contribute to public pension systems. They may exercise any other profession as employees or self-employed workers.

## 10.2 COMMENTS

### ● Number of staff in different categories

The analysis of the table 10.1 leads to the following observations:

Teaching staff involved in the veterinary curriculum fall into two categories: teachers-researchers in permanent or contractual positions. The number of contractual faculty members is about 25%. It is also necessary to recruit temporary teachers such as veterinary practitioners to cover all training needs. These employees bring an added value to our professional training but their salaries are fully supported on the Oniris own funds. Given the constraints already mentioned several times and related to the job ceilings, Oniris has decided to keep these temporary recruitments to ensure the quality of teaching.

As discussed in Chapter 7, the number of employees assigned to animal care could be increased: they represent only 10% of the support staff.

### ● Remuneration levels , particularly in connection with the private sector

For administrative and technical staff, the remuneration level of officials for categories B and C is statistically higher than in the private sector. The opposite is true for employees belonging to category A.

The remuneration level proposed by the state for higher education is not sufficiently. Therefore, the school is facing competition from the private sector to recruit specialized teachers, especially in clinical disciplines.

### ● Percentage of veterinarians compared to the academic staff

Oniris academic staff, involved in veterinary education, includes only six non-veterinarians. This is a deliberate choice that aims to bring specific skills to the school in different fields: radiological physics, molecular biology, management, aquaculture pathology and hygiene and safety in foodstuffs of animal origin.



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### 10.3 SUGGESTIONS

The main problem of human resource management for the school comes from the very strong constraint imposed by the job ceilings.

A proposal was made to the ministry by the directors of four french veterinary schools so that some activities may be exempt from this device. In particular, service providers are able to self-finance a number of positions. A decision is expected by the end of 2014.

To overcome these constraints, the institution implements an employment and skills management policy with several actions, including a four-year employment plan, which will be extended for administrative and technical staff in 2015.

#### ● **Improvement of ratios of the teaching capacity**

All our ratios exceed recommended values. Despite our comments on the number of contractual and temporary employees that imply important budgetary charges for the school, Oniris covers all teaching needs. However, if the increase in incoming flows of veterinary students were to continue, our capacity of student supervision would be in jeopardy. For 137 incoming students each year, it would increase the academic staff of 11 people in 4 years to keep the same ratio R1 ... which seems impossible in terms of job ceilings.

# CHAPTER 11





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## CONTINUING EDUCATION

## 11.1. FACTUAL INFORMATION

### ● Regulatory bases

The continuing education in France is regulated by a specific legislative framework: Act No. 2009-1437 of 24 November 2009, Act No. 2014-288 of 5 March 2014 related to professional training and Oniris received a prefectural agreement as vocational education faculty: registration number: 52 44 05890 44

For veterinary medicine, actions are coordinated in France by a professional association the CFVC (Committee on Veterinary Continuing Education, see appendix 11.1), composed of representatives of the forces of law, the public service unions, french veterinary schools, publishers and associations or companies of continuing education approved by the CFVC. The committee requests that veterinarians acquire (on a voluntary basis, it's not mandatory) 10 points CFC, per period of 5 years.

In addition, the DGER (General Directorate of Studies and Research of the french ministry of agriculture) has recently developed (in collaboration with the responsables of continuing education from various institutions under its control) a vademecum intended to serve guide to govern administration.

### ● Special rules at Oniris

Oniris has an administrative department dedicated to continuing education. The staff of this department is composed of a research engineer, a responsible for forecasting and information and two secretaries, one for degree training, the other for non-degree training. Since 1<sup>st</sup> January 2010, a director of the continuing education was created within Oniris. He is responsible for leading the reflection and monitoring the implementation of the continuing education policy. Its missions are to develop the activity of the department, in particular by helping the faculty members to make proposals for permanent training to professionnals. The objective is to persuade professionals of the value of these trainings and the development of new technologies in a changing world.

Oniris has put in place in 2014 a procedure for the management of continuing vocational training activities, which explains precisely the administrative and financial rules for all continuing education. The department of continuing education assists project managers on the administrative and financial level (agreements and contracts, planning, invoicing ...). This procedure allows teachers and researchers to rely on the competence of specialized department in the delivery of a comprehensive and accurate information. The trainings provided are very well organized with a high level of quality and at a justified price.

A platform dedicated to continuing education was created in 2009. It provides mainly the standing offer and is constantly updating at the following address: <http://www.oniris-nantes.fr/professionnels/formations-continues/>

### ● Continuing education programs

There are 3 kinds of offers:

#### ●● Degree trainings

- For the french specializations: 3 CEAV (Certificate of Special Studies in veterinary medicine, training approved by the Directorate General for Food of French Ministry of Agriculture): Management for health and quality in poultry and rabbit production, Management for Health and quality in pig production, companion animal internal medicine (in partnership with three other national veterinary schools)
- School diplomas: 3 in collaboration with other schools (= DIE for inter-institution diploma) beekeeping and beekeeping pathology, veterinary osteopathy, veterinary medicine in disasters and environment, 2 specific diplomas (=DE) animal experimentation (levels I, II et III) and animal surgery on laboratory animals.
- CES (Graduate Certificate) in dermatology organized in partnership with the veterinary school of Lyon and a professional organization AFVAC.

### ●● Other trainings

- In the catalogue: specifically designed for professionals and directly applicable in accordance with our areas of expertise (Initiation to new technologies, readjustment of knowledge).
- Trainings on request: We receive throughout the year single requests for training. As soon as a sufficient number of participants is reached, a training session can be programmed.
- Personalised pathways by mutual agreement between Oniris and the participant. It is essentially practical training within the different departments for improvement and refresher training (especially for the VTH).

### ●● Participation of faculty members to other continuing education trainings

- Historically, the continuing vocational training of french practitioners was organized by professional bodies of AFVAC (small animal), AVEF (horses), and GTV (animal production). These very active structures request Oniris teachers to participate in off-site trainings. These outsourced activities of continuing education are taken into account in annual activity reports requested in the context of faculty career progression.

### ●● Assessment of continuing education

- For the learners, the assessment is made by CFC points according to the nature of trainings (lecture, practical or tutorial works) and level (degree or non-degree)
- For the faculty: the certificate for the training or diploma is given after transmission of the evaluation sheet of the training on the basis of satisfaction questionnaire (scientific level, form and content, hospitality). This assessment should enable the organizer to ensure the quality of the training. For the department of continuing education, this document allows the improving of reception conditions.

Summary tables of trainings (data presented in calendar years because the continuing education in France does not depend on the Education Code but on French Tax Code ).

	2011	2012	2013
Sales revenues	906,878.54	850,696.59	951,171.02
Total number of trainees	700	741	760
Number of training hours	27,595	23,976	39,785
Number of trainees for degree trainings	175	401	489
Number of training hours for degree trainings	11,062	21,680.5	31,690
Number of trainees for refresher trainings	525	225	271
Number of training hours for refresher trainings	16,533	2,295.5	8,095

There is a clear increase in 2013, after a slight decline in 2012. It is important to note that for calendar reason and time constraints, a same training can be programmed two times in the first or second semester, which modifies the calendar year of training. On average, sales revenues is 900 K€ per year and more than 700 annual trainees.

## 11.2. COMMENTS

**Quality of trainings:** Since the creation of the department of vocational training, the Directorate-General has made available human and material resources needed to implement of quality trainings. More specifically, two modular meeting rooms equipped with audio-visual material (overhead projector, slide projector, video projection with laptop) are available. These rooms have a capacity of 30 to 60 people. All other amphitheatres and classrooms of the school are equipped with video projection. The reception staff of the school is particularly keen to offer the best quality level for the organization and implementation of trainings, which allows Oniris to enjoy a reputation for friendliness.

The educational quality of trainings is based on the joint participation of faculty members and professionals. The emphasis is focused on the practical application of concepts taught by combining conferences and case studies with demonstrations and practical works.

The evaluation forms show a general satisfaction higher than 3,5 (with a maximum of 5) for all sessions. Most of the comments concern problems related to welcome of the participants (lunch catering) and the premises. Generally, teachers have a score > 4 (with a maximum of 5). Equipments and demonstrations have the best scores but the run-down state of some premises (screen visibility, overall comfort, no wifi) is often criticised.

**Veterinary involvement:** Due to the specificity of our institution, the public concerned is essentially composed of veterinary practitioners and colleagues. Oniris participates fully (about one trainee in continuing education for one student in core education) to the continuing education entitled throughout life, necessary for a quality veterinary practise.

## 11.3. SUGGESTIONS

Several axes can be defined to support the development of this department:

- Due to the recent development of commercial market of continuing education in France, it is important that educational institutions stand out in the quality of trainings by developing teaching methods focused on practice (case studies such as demonstrations and practical works). These methods are permitted through the existence of technical platforms, the presence of high-level specialists, and by the implementation of formal and degree trainings.
- The use of new technologies and socio-professional networks to promote self-learning continuity with core education and continuing education:
  - \*To conduct a survey of needs that will develop a demand rationale, poorly developed in other schools.
  - \*To propose massive open online course (MOOC), through its support services, to present the continuing education activities. This measure is expected to attract visitors to the website of continuing education and to help creating a network of users (veterinarians and technicians) candidates for training.
- To provide trainees with assistance: Facilitate the access to trainings for practitioners, particularly in helping them to find funds from vocational training organizations (label of the school) and in facilitating their travels.
- To improve the welcome of candidates by renovating the equipment of reception rooms, in particular by a modernization of IT equipments.





# CHAPTER 12





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## POSTGRADUATE EDUCATION

## 12.1 FACTUAL INFORMATION

### 12.1.1 CLINICAL SPECIALTY TRAINING (INTERNS AND RESIDENTS)

Table 12.1: Clinical specialty training

VETERINARY INTERNSHIPS	2012-2013	2011-2012	2010-2011
Companion Animal	12	14	8
Equine	2	5	0
Farm animals	0	0	0

RESIDENCY PROGRAMMS	2012-2013	2011-2012	2010-2011
European College of Animal Reproduction	1 (1 <sup>st</sup> Y)	1 (3 <sup>rd</sup> Y)	1 (2 <sup>nd</sup> Y)
European College of Bovine Health Management			1 (3 <sup>rd</sup> Y)
European College of Equine Internal Medicine	1 (3 <sup>rd</sup> Y)	1 (2 <sup>nd</sup> Y)	1 (1 <sup>st</sup> Y)
European College of Porcine Health Management	1 (1 <sup>st</sup> Y)		
European College of Veterinary Comparative Nutrition	1 (3 <sup>rd</sup> Y)	1 (2 <sup>nd</sup> Y)	1 (1 <sup>st</sup> Y)
European College of Veterinary Clinical Pathology	1 (3 <sup>rd</sup> Y)	1 (2 <sup>nd</sup> Y)	1 (1 <sup>st</sup> Y)
European College of Veterinary Dermatology	1 (3 <sup>rd</sup> Y)	1 (2 <sup>nd</sup> Y)	1 (1 <sup>st</sup> Y)
European College of Veterinary Pathologists	2 (1 <sup>st</sup> Y) 1 (3 <sup>rd</sup> Y)	1 (3 <sup>rd</sup> Y) 1 (2 <sup>nd</sup> Y)	2 (3 <sup>rd</sup> Y)
European College of Veterinary Public Health	2 (2 <sup>nd</sup> Y) 1 (3 <sup>rd</sup> Y)	2 (1 <sup>st</sup> Y) 1 (2 <sup>nd</sup> Y)	1 (1 <sup>st</sup> Y)
European College of Veterinary Surgery (large animal surgery)	1 (3 <sup>rd</sup> Y)	1 (2 <sup>nd</sup> Y) 1 (3 <sup>rd</sup> Y)	1 (1 <sup>st</sup> Y) 1 (2 <sup>nd</sup> Y)

Oniris also provides trainings in several national specialties: Diploma of Specialized Veterinary Studies (DESV) in companion animal internal medicine, dermatology, anatomy-pathology and equine reproduction and can receive french residents in these disciplines.

## 12.1.2 RESEARCH EDUCATION PROGRAMMES

Table 12.2: Oniris key indicators linked to doctoral training

Year	Number of PhD Students	Number of diploma awarded annually	Number of PhD Students enrolled in Oniris	Number of PhD Students with DVM diploma		The average length of PhD Thesis (in months)
				Full Time	Part-time	
2013	92	11	67	6	5	40
2012	76	19	62	6	3	
2011	70	8	55	6	3	

Table 12.3: Distribution of the different doctoral fellowships for the PhD students with DVM diploma

Kind of fellowship obtained by Oniris PhD Student with DVM diploma	Number
CIFRE (Industrial Agreement of Training through Research Contract)	2
Salaried employees	7
Co-funding with INRA	1
Funding by local authorities	1
Research association	1
Own funds	1

Table 12.3 shows the sources of funding to PhD students with DVM diploma are varied. They include both public and private origins. The figures demonstrate the interest of a significant number of veterinarians to orientate their career in public research. It is also interesting to note the important number of salaried doctoral students.

## 12.2 COMMENTS

### 12.2.1. Clinical specialty training

Oniris is accredited for three veterinary internship programmes: in companion animal clinic for 16 medical interns per year, in equine clinic for 6 medical interns per year and in bovine medicine for 5 medical interns per year. The objective of the internship is to train high-level general practitioners and who can easily perform later an activity of specialist. This Internship includes trainings in all medical and surgical disciplines with a mandatory activity in medical emergencies. The medical interns are considered as students engaged in a training. For the first two supervised practice trainings, the recruitment is organized at a national level between the four veterinary schools. Students admitted to the internship program choose their school based on their ranking. The figures in Table 12.1.1. correspond to medical interns trained at Oniris during the three reference years. These figures show that Oniris has not reached its full capacity. The 2010-2011 academic year is special since our school did not graduate students in 5<sup>th</sup>Y due to a change in curriculum.

The internship in bovine medicine failed to receive any students during the last three years for the reasons already discussed in Chapter 7 (in particular the non-remuneration).

Regarding medical residents, 10 programmes were operated during the reference years for a total of 19 medical residents trained and graduated or soon graduated. They have a clinical training through a specific program of their discipline and approved by the College. They participate in the VTH functioning and in the training of interns and externs in medicine, under the supervision of faculty members and by accompanying the hospital assistants and practitioners. Due to specific training times (research, outsourced training), their involvement in the VTH is not a full-time which affects their salary lower than hospital practitioners.

These medical residents are funded on the basis of an arrangement that combines three sources: Oniris funds dedicated to residencies, VTH funds, and an agreement associated to the research activity. Their salaries are equivalent to those of hospital assistants.

### 12.2.2. Research education programs

Oniris is the only french veterinary school which has been accredited within graduate schools due to its research capacity, a high potential of doctoral supervision and its desire to play an active role in the scientific and educational animation of graduate schools.

Oniris is co- accredited to award the doctorate within three graduate schools:

- VENAM (Plant-environment-nutrition-agri-food-sea)
- BS (Biology-Health)
- SPIGA (Science Engineering, Geosciences, Architecture)

The school is also associated with the graduate school called DEGEST (Law Economics and Management Sciences, Sociology, Geography).

The spectrum of the scientific topics covered within the four graduate schools is broad and closely linked to Oniris areas of expertise in public health, food and nutritional safety, animal health and food processes.

In this context, Oniris provided forty doctoral degrees since 2011. Its number of doctoral students has also increased significantly and reached a record of 92 in 2013 (Table 12.2).

The percentage of Oniris PhD students with DVM diploma is of the order of 12%. It is constant over the past three years. Moreover, the PhD students with DVM diploma work for the majority of them at full-time on their research activity. The part-time activities concern only PhD student employees who have decided, in addition to their professional activity, to achieve a postgraduate thesis. Whatever the source of funding, the PhD students with DVM diploma have chosen to participate in the development of research studies in order to pursue their career in research.

## 12.3 SUGGESTIONS

### 12.3.1. Clinical specialty training

As already discussed in chapter 7, Oniris has chosen to improve its range of expertise by moving toward the level of specialization required in the main clinical disciplines. The faculty members and clinical specialists educated or recruited in recent years have already put in place 10 programmes of residency. The effort should be continued with the aim to receive residents in all disciplines. Oniris is convinced that the presence of medical residents in the VTH and their supervision are factors that contribute to a permanent dynamism, contributing to the excellence of Oniris educational program.

The Oniris determination to amplify the number of medical resident is the basis of another program being finalized: in anesthesia-analgesia with the co-supervision for an european diplomate of the Lyon veterinary school.

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### 12.3.2. Research education programs

Oniris wishes to increase to 15 % the number of PhD students doctors from its own training curriculum.

To achieve this objective, the school has already initiated a number of measures for its students and would like to extend them. Thus, three doctoral fellowships were funded in 2014, in the framework of partnership programs in health and food fields, with the need of co-supervision with institutional partners. These fellowships allowed the recruitment of four doctoral students including two students from Oniris training curriculum.

Moreover, Oniris wants to increase the number of theses in joint guardianship with its international partnerships. Its objective is to increase its international openness by promoting the recruitment of colleagues with an european diploma or international students.

Oniris wants with these measures to attract young researchers from other institutions, but also to train more doctors among its veterinary diplomates. The objective is to enable veterinary diplomates to insert in diversified domains with a doctoral degree complementary to the veterinary degree and which constituting an additional force.

## CHAPTER 13







## RESEARCH

## 13.1 FACTUAL INFORMATION

The core veterinary education includes several research actions. They aim to raise awareness of students to the field of research but also to involve them in research programmes. The objective is to train students with professional skills within the framework of training for and through research and to facilitate their access to research careers.

### 13.1.1. Research Passport

Oniris is the only french veterinary school which develops a specific training for and through research throughout the curriculum of its students. This action results in the awarding of a « research passport » to each student. It validates skills acquired through research and innovation actions under the form of a «supplement to the diploma» at the end of studies.

The research passport raises awareness and trains students through research. It includes a teaching program adapted to their training and composed of CUs, tutorials, supervised training works in research structure but also development of small research projects (Appendix 13.1). It is completed by a cycle of conferences to expose students to the research institutional framework, the different stages in scientific and methodological questioning in various fields. The conferences cycle involves Oniris stakeholders but also outside personalities who bring a diversity of testimonies and topics (Appendix 13.2).

### 13.1.2. The Master: A training complementary to veterinary degree

Oniris differs from the other veterinary schools because it offers to the vet students master co-accredited with Rennes and Nantes universities (Appendix 13.3). Each Oniris veterinary student can complete a master's degree during its 5<sup>th</sup>Y (Appendix 13.4). In addition to the teaching, this syllabus allows students to carry out a six-month supervised research project in a laboratory.

### 13.1.3. The doctoral training

Oniris is also the only French veterinary school accredited to three graduate schools. Therefore, it delivers the PhD degree. Since 2008 (date of accreditation), the school has welcomed over one hundred PhD students and issued more than forty diplomas. Oniris currently has 92 Oniris PhD students and contributes to the training of scientists in the fields of biomedical research, farmed animal health, food safety and quality, nutrition, food processes and environment.

The school promotes the PhD degree by different actions. For example, an annual prize rewards the work of a young PhD since 2013. An internal call for proposals was launched in 2014 to fund three doctoral grants within the framework of Oniris core programs described in other chapters of this report.

### 13.1.4. Conferences dedicated to Research

#### ● Days dedicated to the presentation of research activities

For the research passport, the Research and Doctoral Studies office organizes some days dedicated to the presentation of Oniris research activities to veterinary students. The main objective is to stimulate exchanges among PhD and veterinary students to encourage vocations. They are organized around presentations, flash communications and poster presentations. In the same context, the Oniris students in 4<sup>th</sup>Y and 5<sup>th</sup>Y have a day specifically dedicated to clinical research. This session is organized around oral communications and posters carried out by Oniris stakeholders but also guest speakers to promote exchanges.

#### ● Conferences on Clinical Research

The Oniris faculty members also organize conferences on clinical research for veterinary students several times a year. These conferences aim to provide knowledge in connection with core education and to associate them with clinical case studies. These conferences also provide an opportunity for veterinary students to interact with faculty members to benefit from their

experience in research. Indeed, the activities of Oniris faculty members also include the search for funding, management of research projects, student supervision, analysis and presentation of results and organization of workshops and seminars. All of these experiences are directly beneficial to students.

### ● AGORA Programme

Since 2013 Oniris organizes a new program called AGORA. It brings together veterinary and food science students to stimulate debate or exchanges around main societal issues in connection with their future profession. The conferences have of course a close relationship with Oniris research activities and are followed by discussions on the topic of the seminar. For example, a seminar about «How to feed the world in 30 years: produce more with less» was given by Mr. Luc Guyau, general inspector of Agriculture and former president of F.A.O (Food and Agriculture of United Nations).

## 13.2 COMMENTS

### 13.2.1-Research supervised works

Through the research passport, the veterinary students have opportunities to carry out research activities in laboratories for a period ranging from 15 days to 6 months. These opportunities are an integral part of their curriculum. In addition, veterinary students in the 5<sup>th</sup>Y of study complete their training with a state thesis. When these theses are experimental, they are considered as research actions which enhance the training. Each year, more than 90% of the veterinary theses are research projects. They are sometimes the first step toward a future scientific career. They allow both acquiring scientific knowledge and developing general methodological skills such as the capacity of synthesis, the capacity to communicate, the data processing, the time management, or autonomy.

These competences will be helpful for the completion of a doctoral thesis and more broadly for a career in the research.

All research supervised works may be achieved in one of the Oniris research units (see appendix 13.5) or in the Boisbonne Gene Therapy Centre. On this occasion, the hosted students are raised awareness to animal ethics and good laboratory practices.

#### Box: Boisbonne Gene Therapy Centre and good laboratory practices

The center of gene therapy of Boisbonne is a research laboratory involved in gene and cell therapy of genetic diseases. It conducts preclinical studies on large animal, primates and dogs, before clinical trials on humans. The main pre-clinical trials regard the gene transfer by a recombinant viral vector (rAAV).

One of the main study model used is the Golden Retriever with spontaneous Duchenne muscular dystrophy (GRMD). Other spontaneous canine models developed in the center concern retinitis pigmentosa (RPE65, RPGRip, PDE6B).

The center is engaged in a Good Laboratory Practice (GLP) process, approach to ensure the validity of the data. As part of this certification, all procedures are pre-written, there is a full traceability of all documents and materials and building meet strict criteria. In this spirit, the center of gene therapy of Boisbonne ask its key partners to enter the same approach. Thus this requirement will apply to laboratory bioassays (LDH), the anatomy pathology laboratory (U703), the laboratory production of vectors (U1089). The conditions of this certification now exist and they must be validated with studies on the target species: primates, dogs and rats scheduled for late 2014.

Furthermore, the center of Boisbonne is strongly engaged in a AAALAC accreditation approach (<https://www.aaalac.org/index.cfm>). AAALAC stands for the «Association for Assessment and Accreditation of Laboratory Animal Care». AAALAC promotes the humanely treatment of animals in science through voluntary accreditation and assessment programs.

### 13.2.2- Research programs for students: Merial Veterinary Scholar Programme

Oniris with other French veterinary schools is involved in the MVSP (Merial Veterinary Scholar Programme) program. Its objective is to encourage students to discover the biomedical research in trans-atlantic dimension. It is also expected that these experiences stimulate veterinary students to enter into the profession of researcher. This program allows our students to carry out a supervised research works of 13 weeks in an academic laboratory of North America (Canada, USA) and they receive a scholarship of \$ 5,000 for traineeship period. Conversely, American students have the opportunity to discover the French research laboratories and Oniris welcomes a North American veterinary student this year in the Panther research unit. The MVSP program concludes with a national symposium in North America where all French students have the opportunity to present their results to share their experiences. In parallel, a cultural and scientific week is organized in France for American students welcomed in French veterinary schools. Oniris organized of this event in 2013. Senior researchers are invited to conferences offering students to establish a network of researchers and faculty members.

### 13.2.3-Mobility Grants: Partnership with Crédit Agricole bank

Since 2010, the Crédit Agricole Atlantique Vendée bank is a partner to support for research and teaching in health and food science fields. In this context, an annual prize of international mobility was put in place for students of both food science and veterinary curriculums, including in the field of research. Each prize of € 1,000 rewards supervised practice trainings abroad.

### 13.2.4-Organization of meetings and workshops

#### ● Sensitization of students about the links between research and enterprises

Each year, Oniris participates in the organization of the « Research and Enterprises » workshop which allows students and PhD students to get a feeling for private research. On this occasion, they share their experience and their professional projects.

#### ● Event for students, in partnership with veterinary medicinal industry (SIMV)

Oniris organized in 2014 a third event in partnership with veterinary medicinal industry (SIMV). Its objective is to introduce students the career opportunities in the field of private research.

### 13.2.5- Development of a service dedicated to the training for and through research within research and doctoral studies office

Oniris has a research and doctoral studies office. The missions are described in appendix 13.6. Within this service, a project manager was recruited to facilitate and manage the activities focused on « training for and through research ». This service is responsible for the development of research passport presentations that are part of the cycle of conferences.

The service also makes available additional information on various aspects of research such as the organization of research in France, the funding for research, career opportunities in research and gives the coordinates of public and private structures which receive trainees.

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## 13.3 SUGGESTIONS

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### 13.3.1 A welcome pack

The Oniris students, upon arrival in the 1<sup>st</sup>Y, will receive a pack dedicated to training for and through research at Oniris. This pack will be made up of the following elements:

● **The structure of Oniris research:**

- Presentation of research departments and research units
- Oniris research topics
- Some research key figures (publications, resources available for research, ongoing theses...)

● **The roles of research and doctoral studies office**

- Definition of the roles
- Contacts

● **Modalities for access to doctoral thesis**

- description of the course to access the doctoral thesis

#### ● **Présentation of modules related to research passport**

- Details of interventions
- Presentation of speakers
- The objective of the module

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### 13.3.2 Optimization of identification and the structuring of clinical research to the benefit of students

The development of clinical research is an imperative which depends not only on diagnostic and therapeutic advances, but also on a high level of education for veterinary students. This involves an optimization of the Oniris structure in this area. Thus, clinical research must be based on teams composed of clinician faculty. It must also benefit of the contributions of hospital staff which have an important role in the supervision of veterinary students. Their missions must include a strong involvement in clinical research.

Through its teams, the research department «Human health, biomedical research and animal models», the “Animal Model Expertise Center” but also due to an important number of clinical cases of spontaneous animal diseases received at VTH, Oniris now continues to structure clinical research and amplifies its development. Thus, the objective is to bring together and to coordinate all clinical research activities by the setting-up of a service which will be Directorate-General for Research and the management of hospital.

Structural elements on clinical research and in connection with training of students will be specifically developed in some topics. For example, Oniris decided to create a veterinary cancer center. It will optimize the VTH oncological activity for the development of innovative diagnostic and therapeutic strategies in oncology. This center will allow Oniris students to apply their academic knowledge and to be confronted to practical case studies. It also allows them to approach a high-level clinical research in this field. A better involvement in clinical research will allow them to integrate an evidence based medicine approach that will be useful throughout their working life.

Oniris wants that development of clinical research will create a dynamic increasing the level of coordination and to pool some tools between the four French veterinary schools. The objective is to increase the excellence of french schemes in the interests of future diplomates. In this context, Oniris Director has been designated as head to establish a multicentric and structuring action in the field of clinical research and animal models for all four veterinary schools.





APPENDIX

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**Please find below the link to go to the platform :**

<ftp://ftp-interne.oniris-nantes.fr>

**user identification:** ae44aa

**Password:** ae44aa

## APPENDIX 2.1 : Executive Board

President : Christophe CLERGEAU Vice-President : Gilles RAMBAULT		Pays de la Loire Region Private Corporate - Terrena
<b>Representative members</b>		
Mireille	RIOU CANALS	Ministry of Agriculture
Patrick	DEHAUMONT	Ministry of Agriculture
Christian	DE LAVERNEE	Prefect
Olivier	LABOUX	President of the University of Nantes
Christophe	CLERGEAU	Pays de la Loire Region
Ronan	DANTEC	Nantes Community
Henri	SEEGERS	President of INRA research center of Angers/Nantes
Marianne	DESMEDT	Therapeutic research Institute of University of Nantes
Pierre	SCHMIT	Regional Council of Veterinarian Statutory Body
<b>Nominated members</b>		
Gilles	RAMBAULT	Private corporate - Terrena
Jean-Yves	FOUCHE	PDG de Biofournil (private corporate)
Régis	LEMAIRE	Alumni association of ENITIAA
Rémy	GELLE	Veterinarian
Cyril	BERG	Alumni association of ENVN
Jean-Michel	ROGEZ	Dean of the faculty of medicine
Luçay	HAN-CHING	Head of IFREMER research center of Nantes
<b>Elected members</b>		
<b>4 elected Representatives of Professors</b>		
<b>4 elected Representatives of Associate Professors</b>		
<b>4 elected Representatives of clerical and technical Staff</b>		
<b>4 elected Representatives of Students</b>		

## APPENDIX 2.2 : Professors and Associate Professors of Oniris Director Pierre SAI (Pr)

### DEPARTMENT OF FOOD PROCESSES

Lionel BOILLEREAUX (Pr)	Dominique COLIN (ASS Pr)
Sébastien CURET PLOQUIN (ASS Pr)	Marie DE LAMBALLERIE (Pr)
Dominique DELLA VALLE (ASS Pr)	Francine FAYOLLE (Pr)
Michel HAVET (Pr)	Laurence POTTIER (ASS Pr)
Vanessa JURY (ASS Pr)	Alain LEBAIL (Pr)
Catherine LOISEL (ASS Pr)	Jean-Yves MONTEAU (ASS Pr)
Denis PONCELET (Pr)	Olivier ROUAUD (ASS Pr)
Hélène SIMONIN (ASS Pr)	

### DEPARTMENT OF MANAGEMENT, STATISTICS AND COMMUNICATION

#### SENSOMETRY - CHIMIOMETRY

Véronique CARIOU (ASS Pr)	Michel SEMENOU (ASS Pr)
Philippe COURCOUX (ASS Pr)	Chantal THORIN (CT)
El Mostafa QANNARI (Pr)	Evelyne VIGNEAU (Pr)

#### ECONOMY – MANAGEMENT - COMMUNICATION

Pascal BARILLOT (ASS Pr)	Jean-Marc FERRANDI (Pr)
Yvan DUFEU (ASS Pr)	Samia ROUSSELIÈRE (ASS Pr)
Marie-Josée LORRAIN (ASS Pr)	Vincent HOVLAQUE (Pr)
Florence BEAUGRAND (ASS Pr)	

#### FOREIGN LANGUAGES TEACHING

Franck INSIGNARES (CT)	Marc BRIDOU (CT)
Linda MORRIS (CT)	Fabiola ASECIO (CT)

Pr : Professor, A Pr : Adjunct Professor, V Pr : Visiting Professor, ASS Pr : Associate Professor, AASS Pr : Adjunct Associate Professor, HST: high-school teacher from Agricultural Ministry, CT: certified teacher from Agricultural Ministry

**APPENDIX 2.2 : Professors and Associate Professors of Oniris Director Pierre SAI (Pr)****DEPARTMENT OF FOOD SCIENCE, PATHOLOGY and BIOLOGY**

NUTRITION and ENDOCRINOLOGY	Patrick NGUYEN (Pr)	Brigitte SILIART (Pr)
	Henri DUMON (Pr)	Lucile MARTIN (Pr)
PHARMACOLOGY and TOXICOLOGY	Yassine MALLEM (ASS PrC)	
	Martine KAMMERER (Pr)	Hervé POULIQUEN (Pr)
	Jean-Dominique PUYT (Pr)	Jean-Claude DESFONTIS (Pr)
FUNCTIONAL, CELLULAR AND MOLECULAR PHYSIOLOGY	Lionel MARTIGNAT (ASS Pr)	
	Jean-Marie BACH (Pr)	Julie HERVE (ASS Pr)
HISTOLOGY AND PATHOLOGY	Marie-Anne COLLE (Pr)	Frédérique NGUYEN (ASS Pr)
	Jérôme ABADIE (ASS Pr)	
GENERAL PATHOLOGY, MEDICAL MICROBIOLOGY AND IMMUNOLOGY	Jean-Marc PERSON (Pr)	Hervé SEBBAG (ASS Pr)
	Jean-Louis PELLERIN (Pr)	Emmanuelle MOREAU (ASS Pr)
INDUSTRIAL FOOD BIOCHEMISTRY	Laurent LE THUAUT (ASS Pr)	Carole PROST (Pr)
	Thierry SEROT (Pr)	Florence TEXIER (ASS Pr)
	Joëlle GRUA (ASS Pr)	Mathilde MOSSER (ASS PrC)
INDUSTRIAL FOOD MICROBIOLOGY	Xavier DOUSSET (Pr)	Hervé PREVOST (Pr)
	Bénédicte SORIN (Chef de travaux)	Emmanuel JAFFRES (ASS Pr)
	Bernard ONNO (ASS Pr)	Nabila Haddad (ASS Pr)

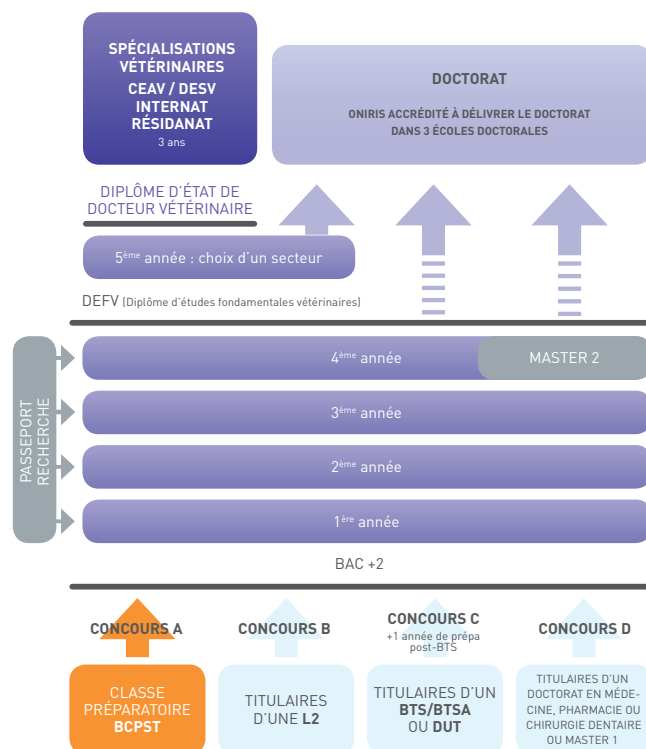
**DEPARTEMENT OF FARM ANIMAL HEALTH AND PUBLIC HEALTH**

FOOD SAFETY AND QUALITY	Michel FEDERIGHI (Pr)	Eric DROMIGNY (ASS Pr)
	Bruno LE BIZEC (Pr)	Marie-France PILET (ASS Pr)
	Catherine MAGRAS-RESCH (Pr)	Jean-Michel CAPPELIER (ASS Pr)
FARM ANIMAL MEDICINE	Arlette LAVAL (Pr émérite)	Alain DOUART (ASS Pr)
	Catherine BELLOC (ASS Pr)	Sébastien ASSIE (ASS Pr)
	Isabelle BREYTON (ASS Pr)	Raphaël GUATTEO (ASS Pr)
	Christophe CHARTIER (Pr)	Mily LEBLANC MARIDOR (ASS PrC)
GENERAL PARASITOLOGY, FARM ANIMAL PARASITOLOGY, WILD ANIMALS HEALTH AND AQUACULTURE	Monique L'HOSTIS (Pr)	Guillaume BLANC (ASS Pr)
	Alain CHAUVIN (Pr)	Ségolène CALVEZ (ASS Pr)
	Albert AGOULON (ASS Pr)	
REGULATED ANIMAL DISEASES, ZONOSIS, AND PUBLIC HEALTH	Jean-Pierre GANIERE (Pr émérite)	Nathalie RUVOEN-CLOUET (ASS Pr)
	Suzanne BASTIAN-ORANGE (ASS Pr)	Carole PEROZ (ASS Pr)
ZOOTECHNY, FARM ECONOMY	Aurélien MADOUASSE (ASS PrC)	Christine FOURICHON (ASS Pr)
	Xavier MALHER (Pr)	Nathalie BAREILLE (Pr)
	François BEAUDEAU (Pr)	

**DEPARTEMENT OF CLINICAL SCIENCES**

ANATOMY	Patrick COSTIOU (Pr)	Claire DOUART (ASS Pr)
	Eric BETTI (ASS Pr)	Claude GUINTARD (ASS Pr)
SURGERY AND ANAESTHESIOLOGY	Olivier GAUTHIER (Pr)	Gwenola TOUZOT-JOURDE (ASS PrC)
	Béatrice LIJOUR (ASS Pr)	Olivier GEFFROY (Pr)
	Eric AGUADO (ASS Pr)	Eric GOYENVALLE (ASS Pr)
	Caroline TESSIER (ASS PrC)	
DERMATOLOGY, COMPANION ANIMAL AND EQUINE PARASITOLOGY, MYCOLOGY INTERNAL MEDICINE, MEDICAL IMAGING AND PROFESSIONAL LEGISLATION	Patrick BOURDEAU (Pr)	Vincent BRUET (ASS Pr)
	Yves LEGEAY (Pr)	Marion FUSELLIER (ASS Pr)
	Dominique FANUEL (Pr)	Jack-Yves DESCHAMPS (Pr)
	Anne COUROUCE-MALBLANC (ASS Pr)	Odile SENECAT (ASS Pr)
	Catherine IBISCH (ASS Pr)	Françoise ROUX (ASS Pr)
BIOTECHNOLOGY AND REPRODUCTIVE PATHOLOGY	Nicolas CHOUIN (ASS Pr)	
	Daniel TAINURIER (Pr)	Lamia BRIAND (ASS Pr)
	Francis FIENI (Pr)	Djemil BENCHARIF (ASS Pr)
	Jean-François BRUYAS (Pr)	

## APPENDIX 4.1 : Veterinary Curriculum at Oniris



## 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

spent 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, equids, 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 to 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 : National Veterinary Curriculum (see Platform)

## APPENDIX 4.4 : Curriculum Digest (see Platform)

## APPENDIX 4.5 : Livrets de l'Etudiant (see Platform)





## APPENDIX 6.2 : Table of animal facilities

Animal facilities and responsible for these facilities	Animal species	Approval number	The type of activity	Level of containment	Location	Dedicated area	Reception capacity
Gene Therapy Center / J.Y. DESCHAMPS	Dogs, cats, rats, primates	G44 273	Research, preclinical studies, reproduction of models with genetic diseases, experimentation, functional exploration	A1, A2, A3	Gene Therapy Center Group 5	Dog 700 m2, Cats, primates, rats : 450 m2	Rats : 200 Primates : 66 Dogs : 67 Cats : 16
Animal facilities for rodents/ Pierre SAI/Jean-Marie BACH	Rodents (mouse, rat, hamster, guinea pigs, gerbils)	C44266	Breeding, crossing, experimentation, clinical examination, surgery, anesthesia, functional exploration, imaging, euthanasia	A1, A1+, A2	Group 2 (ground floor) East Wing	400m2	Mousse : 3000 Rats : 800 Hamster: 200 Guinea pigs : 150 Gerbils : 200
Aquaculture Station /Pierre SAI	Fish	C44272	Simple breeding, expérimentation, clinical examination		Experimentation Aquaculture Station	200 m2	Fishes : 2000
Experimental Surgery/ Olivier Gauthier	Rabbits, dogs, pigs, small ruminants	E44271	Experimental surgery	Conventional	Platform of experimental surgerye	?	Rabbits : 36 (quarantine) and 42 house facilities for a long period Dogs : 10 ou Pigs : 6
Animal facilities for ruminants Borhane Fellah	Cattle, sheep and goats	In progress	Experimentation, surgery, functional exploration, imaging, analyses, sample collection	Conventional	Group 3	130 m2	Adult bovine : 10 Animals Young bovine : 37 Animals Ovine/caprine : Animals <60:87 ; > 60:72
Animal facilities for dogs/cats Patrick Nguyen	Dog, cat	44264	Nutrition and feeding of pets, functional exploration	Conventional	Group 2 and 3	1 100 m2	90 Dogs, 80 Cats

## APPENDIX 6.3 : VTH plan

# VETERINARY TEACHING HOSPITAL

## CHANTRERIE SITE



### LEGEND

- |   |   |  |                 |
|---|---|--|-----------------|
| 1 Gynecology-obstetrics operating room  | 6 Boxes for infectious large animals                            | 12 Physiotherapy                                       | 18 Ultrasound   |
| 2 Pet reproduction                      | 7 Medicine and surgery of farm animals                          | 13 Dermatology   | 19 MRI          |
| 3 Equine and large animals reproduction | 8 Medicine of companion animals                                 | 14 Preventive health medicine - clinical communication | 20 Scintigraphy |
| 4 Artificial insemination centre        | 9 Facilities for infectious companion animals                   | 15 General surgery                                     | 21 Cancerology  |
| 5 Unusual species animals               | 10 Hospitalization - intensive care units for companion animals | 16 Equine surgery                                      | 22 Scanners     |
|   | 11 Equine medicine  | 17 X-ray   |                 |

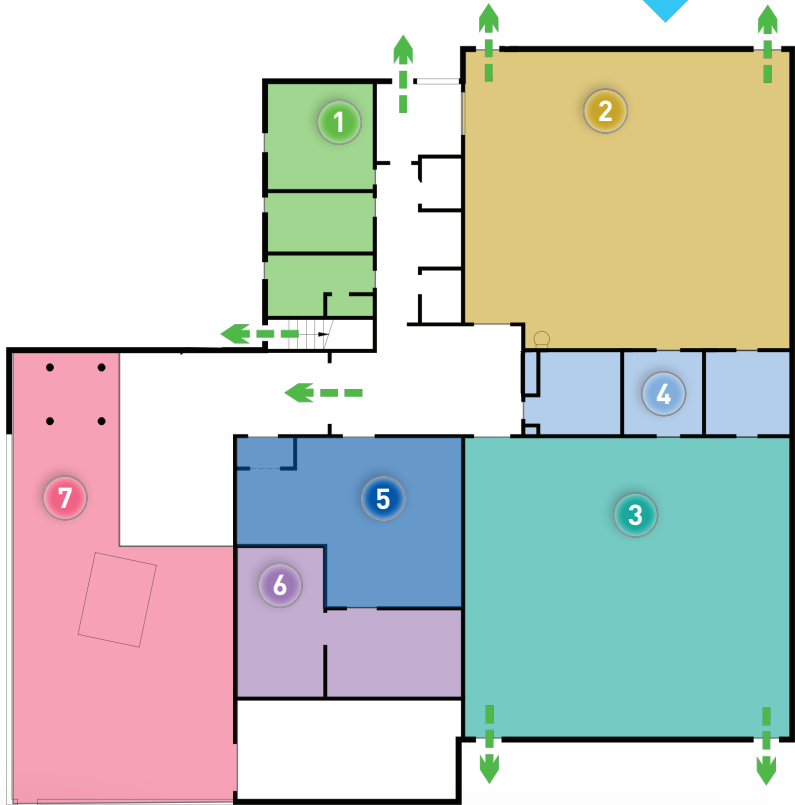
**APPENDIX 6.4 : Analysis performed at Oniris in clinical pathology and pathology during 2011, 2012, 2013, according to the species (IHC means Immunohistochemistry)**

	2013	2012	2011	
<b>Hematology (Number of analyses)</b>	Dogs	673	614	713
	Cats	310	220	197
	Horses	530	502	556
	Cattle	128	163	213
	Others	959	185	309
	<b>TOTAL</b>	<b>2600</b>	<b>1684</b>	<b>1988</b>
<b>Biochemistry (Number of fields) Dogs</b>	2703	2722	2830	
	Cats	2062	2159	1988
	Horses	929	866	955
	Cattle	270	338	480
	Others	254	329	315
	<b>TOTAL</b>	<b>6218</b>	<b>6414</b>	<b>6568</b>
<b>Endocrinology (Number of analyses) Dogs</b>	27667	29257	29939	
	Cats	9466	8218	6666
	Horses	5269	4555	4276
	Cattle	72	160	284
	Others	592	482	459
	<b>TOTAL</b>	<b>43066 (23632 fields)</b>	<b>42672 (24318 fields)</b>	<b>41624 (23081 fields)</b>
<b>Cytology (Numbers of analyses) Dogs</b>	205	247	250	
	Cats	80	80	76
	Horses	16	22	19
	Cattle	10	13	15
	Others	13	13	13
	<b>TOTAL</b>	<b>324</b>	<b>375</b>	<b>373</b>
<b>Histopathology (Numbers of analyses)</b>	Dogs	3195	3280	3099
	Cats	836	951	831
	Horses	146	115	115
	Cattle	250	308	363
	Others	773	85	794
	<b>TOTAL</b>	<b>5200</b>	<b>5439</b>	<b>5202</b>
	<b>IHC</b>	<b>671</b>	<b>660</b>	<b>648</b>

Except for biochemistry, the number is described as the number of analyses/year/species (for endocrinology, the number of fields with at least one endocrinological analysis is also specified). For biochemistry, the number is described as the number of fields/year species with at least one biochemical analysis.

APPENDIX 6.5 : Necropsy, Anatomy and Food Hygiene building plan

NEW NECROPSY ROOM



LEGEND

1 Changerooms	4 Histology Laboratory	6 Room temperature at -20 degree Celsius
2 Necropsy	5 Room temperature at 4 degree Celsius	7 loading platform
3 Anatomy Food hygiene (HQA)		

APPENDIX 6.6 : The single document (see plaform)

**APPENDIX 7.1 : Food hygiene/public health teaching**

	Number			average
	2013-2012	2012-2011	2010-2011	
<b>Food Inspection<sup>(1)</sup> : Carcasses (Unit) selected for specific lesions</b>				
Horse	1	4	4	2408.33
Bovine	21	20	20	
Pork	50	45	45	
Ovine	9	8	8	
Offals (kg)	2465	2045	2000	
Fishes (Unit)	160	160	160	
<b>Food microbiology<sup>(2)</sup> : microbiological criteria analysis</b>				
Cheeses (unit)	8	8	8	267.00
Minced meat (unit)	0	0	8	
Poultry sausage (unit)	8	8	0	
Seafood products (Kg)	1	1	1	
Raw milk (L)	250	250	250	
<b>Food Technology</b>				
Visit of (4 hours/visit) Slaughterhouse <sup>(3)</sup>	32	32	32	66.67
Collective restaurants	32	32	32	
Food technologic hall <sup>(4)</sup> of Oniris	8	0	0	
<b>Assessment of public health hazards in herds</b>				
Cattle herds <sup>(5)</sup>	12	12	12	12

(1) poultry inspection is illustrated with slides / 4<sup>th</sup>Y / 16 students per group

(2) practical exercises, material and medias necessary / 4<sup>th</sup>Y / 16 students per group

(3) Cattle is the model developed; visit prepared before and debriefed after / 3<sup>rd</sup>Y / 8 students per group; processes of slaughtering for pork and poultry are illustrated with slides - visit organized for 5<sup>th</sup>Y and CEAV

(4) device of pilote scale in order to illustrate main food preservation technologies (mild heat treatment/pasteurization, sterilization ; smoking chamber ; freezing ; packaging under vacuum modified atmosphere) / 3<sup>rd</sup>Y / 8 students per group.

(5) 4<sup>th</sup>Y / 16 students per group

**APPENDIX 7.2 : Outside on farm animals clinical teaching**

- Clinique Marie Curie, 49450 Saint Macaire en Mauges (Dr Leiseing)
- Clinique Arcadia, 44150 Ancenis (Dr Preteau)
- Clinique de Riaillé, 44440 Riaillé (Dr Buret)
- Clinique vétérinaire de Héric, 44810 Héric (Dr Guilloton)
- Clinique de Legé, 44650 Legé (Dr Barrau)
- Clinique des Iris, 44270 Machecoul (Dr Cesbron)

**APPENDIX 7.3 : Number and types of animals received in wildlife care center (CVFSE)**

	Number			Average
	2013-2012	2012-2011	2010-2011	
Wild birds	1371	1297	1297	1597.67
Wilds mammals	303	247	247	
Reptiles	5	7	7	

**APPENDIX 7.4 : Partnership charter (see Platform)****APPENDIX 7.5 : European and American Graduates in Oniris (2014)**

College	Number	Graduates
ACVA	1	Gwenola Touzot-Jourde
ACVECC	1	Françoise Roux
ECAR	4	Jean-François Bruyas Francis Fiéni Anne Gogny Daniel Tainturier
ECBHM	4	Sébastien Assié Nathalie Bareille Alain Douart Raphaël Guatteo
ECEIM	1	Anne Couroucé-Malblanc
ECPHM	2	Catherine Belloc Arlette Laval
ECVCN	2	Henri Dumon Patrick Nguyen
ECVCP	2	Brigitte Siliart Laetitia Jaillardon
ECVD	2	Patrick Bourdeau Vincent Bruet
ECVP	4	Jérôme Abadie Marie-Anne Colle Laëtitia Dorso Frédérique Nguyen
ECVPH	5	Christine Fourichon Catherine Magras Nathalie Ruvoen François Beaudeau Jean-Michel Cappelier
ECVPT	1	Hervé Pouliquen
ECVS (large animal surgery)	2	Olivier Geffroy Caroline Tessier *
EVPC	3	Alain Chauvin Monique L'hostis Christophe Chartier
<b>Total Number</b>	<b>34</b>	

\* Also diplomate ACVS et Associate member large animals ECVDI

+ ECVD : Florian Bouteille, employed Veterinary Surgeon

**APPENDIX 7.6 : Supervision of students at VTH : teachers and employed veterinary surgeons  
(pets, equine, transversal sectors)**

	Faculty staff with temporary contracts		PH AH	Technical staff
Anatomy-Pathology	1 Pr (+ board) 2 ASS Pr (+ board)		1 AH time shared with anatomy	½ time, necropsy assistant,
Anesthesia	1 MCC (+board)		1 PH 1 AH	2 design engineers
Surgery	1 Pr 1 ASS Pr		1 PH 2 AH	3 technicians in operating theaters
Odontostomatologie		1 Graduated EVDC		
Osteopathy	1 ASS Pr			
Physiotherapy	1 ASS Pr			(1/3 time , time shared with anatomy )
Dermatology	1 Pr (+board) 1 ASS Pr (+board)	4	1 AH	
Exotics			1 AH	
Imaging	1 ASS Pr		2 AH	3 with 1 IR
Internal medicine	1 Pr (droit/ légis.) 1 Pr 1 ASS Pr	1 : ophtalmology 1 : cardiology 2 : behavior	1 AH ½ AH	1 (2/3 time)
Oncology	1 ASS Pr		½ AH	1 clinical research associate
Preventive Medicine	1 ASS Pr		1 PH	1 secretary
Reproduction	1 Pr (+board) 1 ASS(+board)		1 PH (IR) with board 1 résident	
Clinical Nutrition	2Pr (+board) 1 Pr		1 résident	
Emergencies / Intensive Care	1 Pr 1 ASS Pr (+board)		3 AH	3 (2 for intensive care and 1 for emergencies)

Pr : Professor

A Pr : Adjunct Professor

V Pr : Visiting Professor,

ASS Pr : Associate Professor

AASS Pr : Adjunct Associate Professor

IR: Engineer Research

PH: hospital practitioner

AH: hospital assistant



## APPENDIX 7.7 : Radiation therapy-Brachytherapy-Nuclear Medicine Platform

### 2014 : new radiation therapy and nuclear medicine and imaging facilities at Oniris :

- o Accelerator for external radiation therapy : SL-25 Elekta (megavoltage)(photon and electron beams, 80 leafs MLC for optimal conformational radiation therapy, with Intensity Modulation (IMRT) and portal imaging
- o Imaging and software (TPS) for treatment planning in radiation therapy (TDM, fusion of TDM and RMI images)
- o High Dose Rate brachytherapy device (Bebig)
- o Bunker for radiation therapy and brachytherapy, designed for small animal and equine radiation therapy
- o Radioprotected facilities and animal housing for nuclear therapy, near the pre-existing radioactivity laboratory at Oniris
- o Single Photon Emission Computed Tomography (SPECT/CT Optima 640 GEMS) for dogs and cats
- o Positron Emission Tomography (TEP/CT Discovery GEMS) for dogs and cats

Objectives are :

- Veterinary radiation therapy, mainly for small animals oncology but also for equine medicine. Treatment of :
  - o internal tumors (6-8 cm)
  - o superficial tumors, subcutaneous or cutaneous
  - o brain tumors
  - o soft tissue sarcomas
  - o mast cell tumors
  - o localized lymphomas
  - o nasal tumors
  - o oral tumors
  - o bone tumors
  - o equine sarcoids...
- Advanced small animal imaging : TEP-CT imaging, mainly for animal cancer (TEP-FDG and immunoTEP), tri-dimensional scintigraphy for cancer diagnosis, staging and evaluation of the response to therapy
- Innovative internal radiation therapy for animal cancer (radio-immuno-therapy for canine B-cell lymphomas, vectorized internal radiation for canine brain cancers and aggressive mammary carcinomas) ad clinical research

Partnership with following projects and scientific networks :

Cancéropôle Grand-Ouest and GIP Arronax (cyclotron), cluster Isotop-for-Life

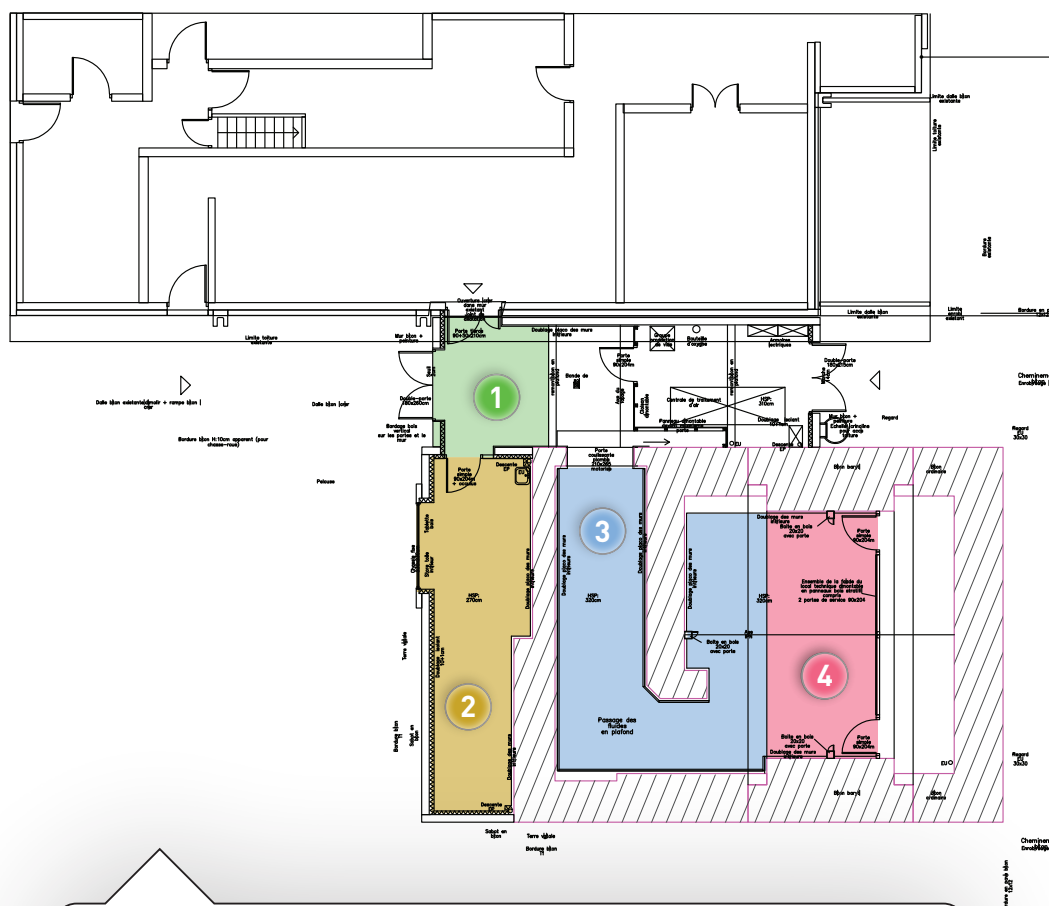
Project MIRSA (Monoclonal antibodies for Imaging and Radioimmunotherapy of B-cell lymphoma in Small Animals)

Project IRAD (Pre-clinical validation of an innovative Internal RADiotherapy of glioma in a large spontaneous animal model)

European Canine Lymphoma Network (EU-CAN-LYMPH.NET)

APPENDIX 7.8 : Radiotherapy building plan

## RADIOOTHERAPY TREATMENT ROOM



### LEGEND

- |   |  |
|---|--|
| <span style="background-color: #90EE90; border-radius: 50%; padding: 2px 6px;">1</span> Entrance        | <span style="background-color: #ADD8E6; border-radius: 50%; padding: 2px 6px;">3</span> Chicane                                  |
| <span style="background-color: #FFD700; border-radius: 50%; padding: 2px 6px;">2</span> IT control room | <span style="background-color: #FF69B4; border-radius: 50%; padding: 2px 6px;">4</span> Radiation therapy and brachytherapy room |

APPENDIX 7.9 : Procedural document of VTH biosecurity (see platform)

## APPENDIX 8-1: online specialized bibliographic databases ( 2013 consultation figures)

- « Europresse » provides access to more than 6,200 sources covering current events on the local, regional, national and international scenes: newspapers, trade publications, corporate histories and profiles, news wires, radio and television programme transcripts... trade press: 53% and general press: 47%. English publications: 80%, French publications: 14%, other: 6%.
  - 1 900 downloaded documents in 2013, the first year of subscription.
- « SagaWeb Afnor »: this electronic resource allows search for standard collections and collections for draft norms from AFNOR (French association for Standardization), current and withdrawn (including NF, NF EN, NF ISO). It allows also search for ISO international standard (International Organization for Standardization), for IEC international standard (International Electrotechnical Commission), as well as technical regulation related to standardization published in the "Journal Officiel de la République Française (JORF)" and the Official Journal of the European Council.
  - 350 standards consulted.
- « Science Direct » is the online service of the publisher of scientific periodical Elsevier. More than 2,500 titles of periodicals and 11,000 books published by Elsevier since 1995 are available in full text and cover all fields of scientific research: Physical Science and Technology, Life Sciences, Health Sciences, humanities and social sciences. There are today more than 9.5 million of articles and chapters listed. The database grows at an annual rate of 0.5 million.
  - 22 330 articles downloaded.
- « CAB Abstracts » contains the major documents on research and development in applied life sciences, including agriculture, forestry, human nutrition, veterinary medicine and the environment since 1973.
  - 10 210 searches.
- « Kompass », virtual book of french and european companies for all sectors and with a full description of the company.
  - 900 company fact-sheets downloaded.
- « Techniques de l'Ingénieur », technical encyclopedia on all technical and industrial scientific fields with an access to full-text.
  - 1,625 downloaded documents for 4,373 researchs.
- « Lamy Dehove », Comments on official of french and european reference texts. Access to full text.
- « Xerfi 700 », Information on companies. The subscription allows an access to the full text of sectoral studies.
  - 700 studies downloaded.

**APPENDIX 9.1 : BCPST Program (number of hours per week)**

1st Year				
Discipline	Course	TD	TP	Total
Math	5	3	-	8
Physic	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
LV2 (optional)	(2)	-	-	(2)
<b>Total (without LV2)</b>	<b>20.5</b>	<b>4.5</b>	<b>6.5</b>	<b>31.5</b>

About 2 hours of oral questions per week.

Living language 2 is optional and not always offered.

# The half hour of computer science is only offered in the first period  
(eighteen weeks, or the first semester until about early February).

2nd Year				
Discipline	Course	TD	TP	Total
Math	5	2	-	7
Physic	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
Geography	0.5	-	1	1.5
TIPE	-	1	1	2
French and Philosophy	2	-	-	2
LL1	2	-	-	2
EPS	2	-	-	2
LV2 (optional)	(2)	-	-	(2)
<b>Total (without LV2)</b>	<b>20.5</b>	<b>4</b>	<b>7</b>	<b>31.5</b>

About 2 hours of oral questions per week.

Living language 2 is optional and not always offered.

**APPENDIX 11.1 : Continuing Education in Oniris, list of the training during the reference years**

	2013	2012	2011
<b>Diploma</b>			
Certificate of high veterinary degree in Poultry and Rabbit Productions	5 courses	5 courses	5 courses
Certifaune Europe	1 session		
Training in animal experimentation I Mammals– level 1	3 sessions	3 sessions	3 sessions
Training in animal experimentation I Mammals– level 2	2 sessions	2 sessions	3 sessions
Training in animal experimentation I Fish– level 1	1 session		
Training in animal experimentation I Fish– level 2	1 session		
Training in animal experimentation– level 3		1 session	
Radioprotection basic training	2 sessions	1 session	1 session
Radioprotection renewal training	1 session	1 session	
Training in animal experimentation -rules	1 course	1 course	
Training in animal experimentation -Expertise	1 course		
Training in experimental Surgery	3 courses	3 courses	2 courses
Training in experimental Surgery-Fish			1 session
Inter-school diploma in Beekeeping and BeePathology	2 courses	2 courses	4 courses
Advisor Beekeeping sanitary engineering	1 course		
Beekeeping Production	1 course		
Certificate of high veterinary degree in Porcine Production	1 course	3 courses	3 courses
Courses 13-14-15 in Veterinary Osteopathy	3 courses	5 courses	5 courses
Training in primates surgery-Expertise		1 session	
Evaluation ethics in animal experimentation		1 session	1 session
Course in avian pathology – diploma in high degree pathology			1 session
<b>Improvement</b>			
Management	1 session		
MERCK training in animal histopathology		1 session	
Regional anesthesia in cattle	2 sessions	2 sessions	4 sessions
Regional anesthesia in pets	1 session	1 session	
Assistance for wild birds in distress	1 session	1 session	
Wildlife victim spill	1 session		
Early neutering in cats	1 session		
Ultrasonography of the genital tract of the cow	1 session		
Embryo transfer in cattle	1 session		
Abdominal basic Ultrasonography	1 session	4 sessions	4 session
Abdominal improvement Ultrasonography		1 session	2 sessions
Introduction to Physiotherapy (MIKAN)	1 session		
Lameness in cattle	1 session		
Surgery of the head and neck in the horse	2 sessions		
Endocrinology in canine and feline	1 session	1 session	1 session

Vertebral surgery	1 session	2 sessions	1 session
Surgery using Arthrex materials	1 session		
Notions of behavior and conditions restraints cattle	1 session		
Porcine surgery	1 session		
Veterinary Dentistry (with AFVAC)	1 session		
Lean horse		1 session	
Locomotor pathology - the hock		1 session	
Ambulatory foot surgery		1 session	
Equine cardiology		1 session	
Surgery using Synthes materials		2 sessions	
Practical anesthesia in horses		1 session	
Anesthesia in canine and feline level 1		1 session	
Anesthesia in canine and feline level 2		1 session	
Histology in ichthyopathology		1 session	
Nursing injured birds - oil pollution			1 session
Health calves and mastitis in dairy cows			1 session
Risk assessment of canine dangerousness			1 session
Locomotor pathology in horse			1 session
Porcine surgery (Ethicon)			2 sessions
Management of complex wounds			1 session
Cutaneous surgery			1 session
Management and aquatic animal health			1 session
Teacher training for Researchers (10)			1 session

### APPENDIX 13.1: Description of the teaching cycle of research passport

Actions	1 <sup>st</sup> Y Eng	1 <sup>st</sup> Y Vet	2 <sup>nd</sup> Y Eng	2 <sup>nd</sup> Y Vet	3 <sup>rd</sup> Y Eng	3 <sup>rd</sup> Y Vet	4 <sup>th</sup> Y Vet	5 <sup>th</sup> Y Vet
UV or tutorial work (initiation to information retrieval, comments of scientific articles, analyses of experimental protocols ...)	●	●	●	●	●	●		
Introduction to clinical research (analyses of articles, participation in experimental protocols ...)							●	●
Interdisciplinary project involving bibliographic search and experimental realization			●					
Internships in laboratories (2 weeks minimum) or equivalent research project		●		●		●		
Ex Libris Project	●							
Engineer Project – Introduction to research			●		●			
Engineering End of study dissertation in a research&development research					●			
State veterinary thesis which are experimental or carried out in laboratory								●
Completion of a Master 2 Research *					●		●	●

\* For veterinary, the completion is possible in 4th and 5th year . When it is completed in 4th, the 5th year is adopted to professional career plans.

### APPENDIX 13.2: Description of the conference cycle of research passport

Actions		1 <sup>st</sup> Y Eng	1 <sup>st</sup> Y Vet	2 <sup>nd</sup> Y Eng	2 <sup>nd</sup> Y Vet	3 <sup>rd</sup> Y Eng	3 <sup>rd</sup> Y Vet	4 <sup>th</sup> Y Vet	5 <sup>th</sup> Y Vet
Presentation of Oniris research structures, master's degree courses, doctoral studies ; Testimonials from students	F. POULAIN Oniris	●	●						
Presentation of Oniris research activities is (PhD students, research engineers, faculty members)	PhD students, research engineers, faculty members Oniris	●	●						
Presentation of research activities by Oniris PhD students	Directors of graduate schools – PhD students Oniris			●	●			●	
posters presentation and visits to laboratories	PhD students, Oniris			●	●			●	

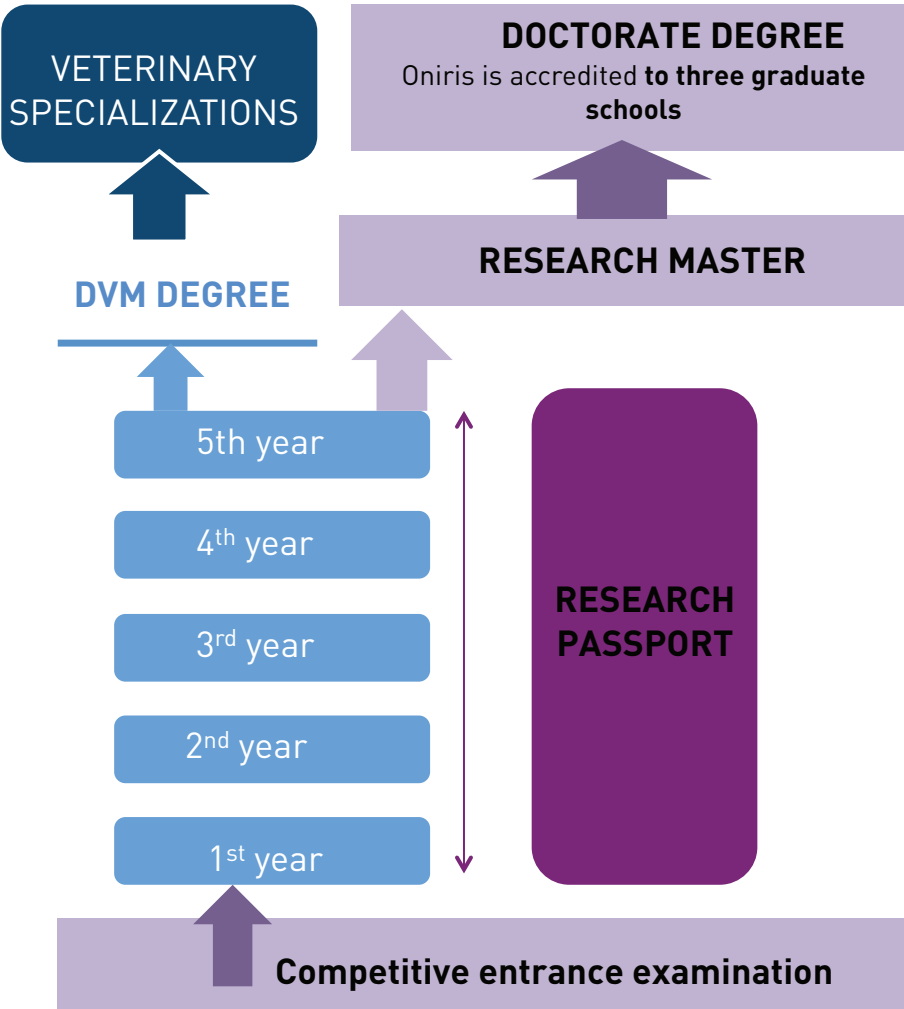
Actions		1 <sup>st</sup> Y Eng	1 <sup>st</sup> Y Vet	2 <sup>nd</sup> Y Eng	2 <sup>nd</sup> Y Vet	3 <sup>rd</sup> Y Eng	3Y Vet	4 <sup>th</sup> Y Vet	5 <sup>th</sup> Y Vet
Presentation of, master's degree courses, doctoral studies and research careers	F. POULAIN Oniris			●	●				
Organization, evaluation and research funding	F. POULAIN Oniris					●	●		
Presentation of industrial research agreements (CIFRE)	C. ANGELIER French National Association for Technical Research (ANRT)					●		●	
PhD Insertion and employment opportunities	C. MIRAL (PRES LUNAM)					●		●	
Lectures and presentations of clinical research cases	« Human health, biomedical research and animal models » Département Oniris							●	●
posters presentation of clinical cases	« Human health, biomedical research and animal models » Département BIOMED Oniris							●	●

### APPENDIX 13.3: List of Masters for which Oniris is cohabilitated

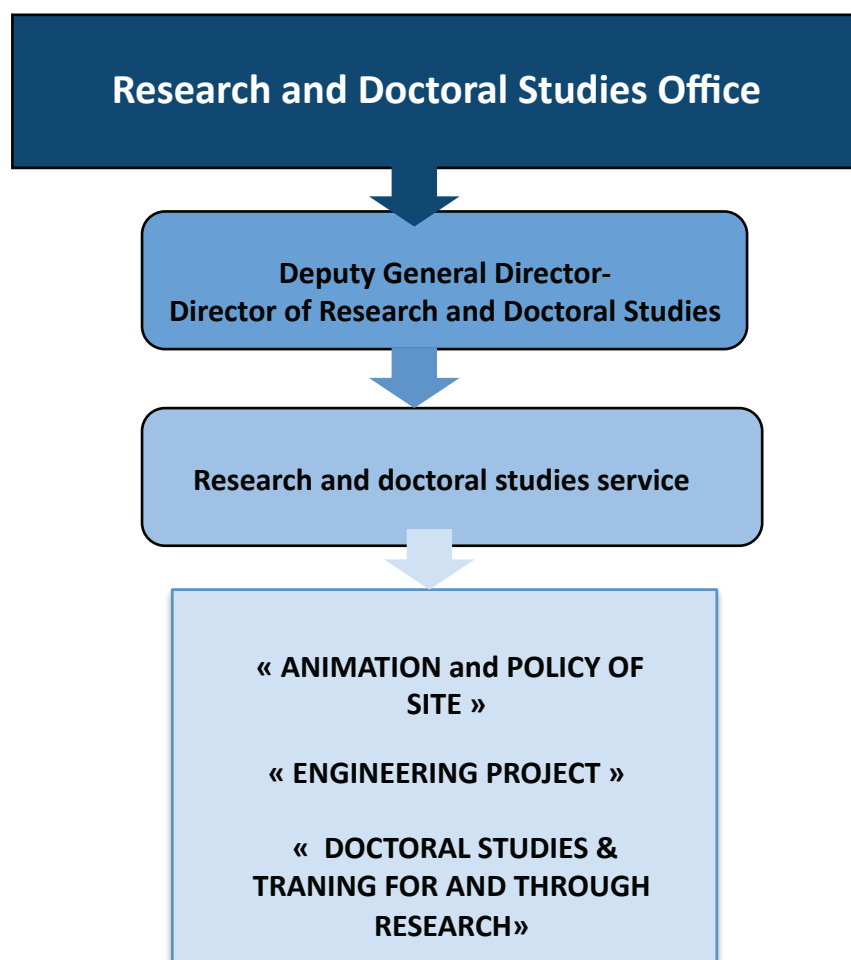
Acronym	Name
<b>SANH</b>	Food Science and Human Nutrition
<b>BBRT</b>	«Biology, biotechnology and therapeutic research»
<b>SAED</b>	Animal Biology, Animal Health and Production
<b>ACBPI</b>	Analysis and Control: from Biomolecules to Industrial Products
<b>MPSA</b>	Marketing of Health Products and Services
<b>MQSAI</b>	Management of Food Quality and Safety in the Food-Processing Industry
<b>BBM</b>	Bioprocesses and Marine Biotechnology
<b>GPA</b>	Process engineering, Environment, Food processing
<b>MAN-IMAL</b>	Man-Animal-Food Health: Transdisciplinary Management of Global Health and Nutritional Safety



APPENDIX 13.4: scheme for access to Master and Doctoral studies for veterinary students



## APPENDIX 13.5: Structuring and organization of Research and Doctoral Studies Office



## APPENDIX 13.6: List of departments and research units Oniris

**4** Research departments

**14** Research units

**76** PhD students

Research activity of the department focuses on the biology of pathogens in livestock ; animal diseases epidemiology ; decision-making strategy elaboration. These activities contribute to food sufficiency issues, through prevention and animal disease crisis management. They also contribute to human health issues through prevention of biological or chemical risks in the food chain.

Research activity of the department focuses on the pathogenesis of human and animal diseases and on the evaluation of therapeutic strategies, especially cell and gene therapies, using animal models. Oniris research teams have close ties with the Nantes Health Research center thereby contributing to the understanding and treatment of human diseases.

## DEPARTMENT

"Animal health Control and public health"

### BIOEPAR

**Biology, Epidemiology and Risk Analysis in Animal Health** (JRU -1300 INRA/Oniris)

## DEPARTMENT

"Human health, biomedical research and animal models"

### IECM

**Cellular and Molecular Immuno-Endocrinology** (4644 Nantes University/USC INRA/Oniris)

### PAnTher

**Animal Pathophysiology and Biotherapy for the muscle and nervous system diseases** (JRU-703 INRA/Oniris)

### LIOAD

**Laboratory for osteo-articular and dental engineering** (JRU - 791 INSERM/ Nantes University/Oniris)

### QOSMOS

**Bone quality and microenvironment in bone diseases and animal models** (Angers University/Oniris)

### PAPF

**Animal Pathophysiology and Functional Pharmacology** (UPSP)

### SSBR

**Sanitary Security of Reproduction Biotechnologies** (UPSP)

### AMaROC

**Animal cancers, models for comparative oncology research** (UPSP)



**260** People dedicated  
to research... including

**122** Scientific  
managers

## DEPARTMENT

"Food quality  
and safety"

### SECALIM

**Food safety and microbiology**  
(JRU-1014 INRA/Oniris)

### LABERCA

**Food contaminants and  
residue analysis laboratory**  
(USC-INRA)

### USC

**Sensometrics and Chemometrics**  
(USC-INRA)

### N&E

**Nutrition and Endocrinology** (UPSP)

Research activity of the department focuses on chemical and microbiological food safety, food organoleptic quality and human nutrition. Research teams contribute to the production of food with good sanitary, nutritional, and organoleptic qualities.

## DEPARTMENT

"Food Processes,  
management and  
sustainable Development"


### GEPEA

**Process Engineering for  
Environment and Food** (JRU-CNRS/  
Nantes University/School of Mines/Oniris)

### LARGE CIA

**Management and economics of  
food industry**  
(UPSP)

Research activity of the department focuses on food processing methods and food industry economy. Research units of the department contribute to the design and assessment of innovative and sustainable food processing technologies. The main objective is the production of food that meets both overall company strategy issues and consumer expectations.



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