

Research evaluation

EVALUATION REPORT OF THE UNIT BREED - Biologie du développement et reproduction

UNDER THE SUPERVISION OF THE FOLLOWING ESTABLISHMENTS AND ORGANISMS:

Institut national de recherche pour l'agriculture, l'alimentation et l'environnement - Inrae, École nationale vétérinaire d'Alfort, Université de Versailles Saint-Quentin-en-Yvelines

EVALUATION CAMPAIGN 2024-2025 GROUP E

Rapport publié le 05/05/2025



In the name of the expert committee :

Lucas Jacques Waltzer, chairman of the committee

For the Hcéres :

Coralie Chevalier, president

In accordance with articles R. 114-15 and R. 114-10 of the Research Code, the evaluation reports drawn up by the expert committees are signed by the chairmen of these committees and countersigned by the president of Hcéres.



To make the document easier to read, the names used in this report to designate functions, professions or responsibilities (expert, researcher, teacher-researcher, professor, lecturer, engineer, technician, director, doctoral student, etc.) are used in a generic sense and have a neutral value.

This report is the result of the unit's evaluation by the expert committee, the composition of which is specified below. The appreciations it contains are the expression of the independent and collegial deliberation of this committee. The numbers in this report are the certified exact data extracted from the deposited files by the supervising body on behalf of the unit.

MEMBERS OF THE EXPERT COMMITTEE

Chairperson:	Mr Lucas Jacques Waltzer, Centre national de la recherche scientifique – CNRS, Clermont-Ferrand
	Ms Juliette Azimzadeh, CNRS, Paris
Experts:	Mr Samir Hamamah, Centre hospitalier universitaire de Montpellier - CHU Montpellier (representative of the CNU)
	Mr Jérôme Jullien, Institut national de la santé et de la recherche médicale – Inserm, Nantes (representative of the CSS Inserm)
	Mr Jean-François Landrier, Institut national de recherche pour l'agriculture, l'alimentation et l'environnement – Inrae, Marseille (representative of the CSS Inrae)
	Mr Thibaut Larcher, Inrae, Nantes (representative of the supporting personnel)

HCÉRES REPRESENTATIVE

Mme Marie José Stasia

REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

M. Xavier Fernandez, Inrae Phase Ms. Véronique Coxam, Inrae Alim-H M. Renaud Tissier, École Nationale Vétérinaire d'Alfort Mme Caroline Besson, Université de Versailles Saint Quentin en Yvelines - UVSQ)



CHARACTERISATION OF THE UNIT

- Name: Biologie de la reproduction, environnement, épigénétique et développement
- Acronym: BREED
- Label and number: UMR 1198
- Composition of the executive team: Unit's Director: Ms Pascale Chavatte-Palmer; Unit's Deputy Director: Ms Katia Tarassenko

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SCIENTIFIC PANELS OF THE UNIT

SVE Life Sciences and Environment

SVE3 Life molecules, integrative biology (from genes and genomes to systems), cell and developmental biology for animal science

THEMES OF THE UNIT

The unit performs fundamental and applied developmental and reproductive biology studies in farm animals and rodent models but also in humans. Its research focuses on embryonic and faeto-placental development as well as on the epigenetic and environmental effects on adult phenotypes and across generations. It is currently composed of five teams:

- Team 1: Embryo & Pluripotency, Epigenetic & Environment (EPEE)
- Team 2: Human Reproduction and Animal Models (Rhuma)
- Team 3: Gonadal Differentiation & Perturbations (DGP)
- Team 4: Placenta, Environment & Phenotype Programmation (PEPPS)
- Team 5: Epigenetic Mechanisms in Phenotype Construction & Prediction (MECP2).

HISTORIC AND GEOGRAPHICAL LOCATION OF THE UNIT

The unit "Biology of Reproduction, Environment, Epigenetic and Development" (BREED) is a joint research unit (UMR1198) between the National Institut of Research for Agriculture, Alimentation and Environment (Inrae), the National Veterinary School of Alfort (ENVA) and the University of Versailles-Saint-Quentin (UVSQ). The unit was created in 2020, following the fusion of the former research unit Developmental Biology and Reproduction (BRD) with the clinical research team Gametes, Implantation and Gestation (GIG, Leader of Rhuma), which gave rise to the Rhuma team. The unit's staff are located mainly on the Inrae Campus of Jouy-en-Josas (in different buildings) but also in the ENVA (Maison Alfort), in the Life Science Department of the UVSQ (Montigny-le-Bretonneux) and in the CHI of Poissy (Poissy/Saint-Germain-en-Laye) and the Foch Hospital (Suresnes).

RESEARCH ENVIRONMENT OF THE UNIT

Besides the institutional affiliation of the unit with the Inrae, ENVA and UVSQ, its staff are affiliated either to the University Paris Saclay (for Inrae and UVSQ employees) or to the University Paris Est Créteil (ENVA staff).

In Jouy-en-Josas, the unit co-directs the Ibisa/ISC-labelled imaging platform MIMA2 and it has interactions with the neighbouring Inrae research units of Animal Genetics & Integrative Biology (GABI) and of Molecular Virology & Immunology (VIM), but also with the MICALIS Institute. It benefits from the support of the Inrae experimental units "Fishes and Rodents Experimental Infectiology" (IERP) and "Jouy Animal Sciences" (SAJ) to have access to different animal models, and of GABI's platform @Bridge (Animal Biological Resources for Integrated and Digital Genomics).

Within Paris Saclay University, the unit is associated with the graduate schools "Life Sciences & Health" and "Biosphera". It also contributes to the codirection and scientific animation of the "Paris Saclay Animal Sciences" (SAPS) consortium.

The unit is associated with the Institut Carnot "France Futur Elevage" and with two PIA initiatives: the LabEx "REVIVE" and the Biological Resource Center "Anim". It also participates in the GDR Repro and O3.



UNIT WORKFORCE: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	10
Maîtres de conférences et assimilés	5
Directeurs de recherche et assimilés	6
Chargés de recherche et assimilés	11
Personnels d'appui à la recherche	50
Sous-total personnels permanents en activité	82
Enseignants-chercheurs et chercheurs non permanents et assimilés	1
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	14
Sous-total personnels non permanents en activité	15
Total personnels	97

DISTRIBUTION OF THE UNIT'S PERMANENTS BY EMPLOYER: in physical persons at 31/12/2023. Non-tutorship employers are grouped under the heading "others".

Nom de l'employeur	EC	С	PAR
Inrae	0	17	36
UVSQ	10	0	3
AUTRES	1	0	10
ENV ALFORT	4	0	1
Total personnels	15	17	50

GLOBAL ASSESSMENT

The BREED unit is a well-established research centre with a long-standing and recognised expertise for conducting fundamental and applied studies on developmental and reproductive biology of farm animals. During this contract, it also extended its activity toward more clinical-oriented projects related to human fertility, but this did not result in strong synergies. The unit produced valuable results in the fields of embryonic and foeto-placental development as well as on the epigenetic and environmental effects on adult phenotypes and across generations. It is particularly well positioned for the study of ruminants, with a leading role in a European consortium and strong links with French breeding companies. Its lines of research are relatively broad but are very well integrated with their main supervising body policy and clearly relevant to current socio-economic challenges.

Overall, the unit is extremely well managed and well organised, with various committees and actions to promote a good working atmosphere and a sense of belonging. It benefits from state-of-the-art platforms for cell/embryo imaging, surgery and medical imaging. rodent behavioural studies or production of bovine embryos, some of which are rather unique. Indeed, the unit is responsible for a good part of the ISC/IBISA-labelled platform MIMA2. The unit is also associated with the Institut Carnot "France Future Elevage", with the Biological Resources Center "Anim" and it contributes to various in national research groups such as Celphedia.

The attractiveness and visibility of the unit are very good to excellent. The unit has increased its external funding $(\sim 1 M \notin /y ear)$ over this period and all the teams are well funded thanks to their success in competitive calls at the national level, but also at the European level. Some PIs have an excellent international visibility and the unit members are very active in national and international meetings. They also have an important network of collaborations, thanks notably to their access and know-how for research on large farm animals. The unit (~100 persons) is mostly composed of permanent staff (~80%), which should enable the development of even more ambitious research programs, and it benefits from a very good ratio of researcher to support staff. While it recruited some new researchers or support staff, the number of staff has continued to decline (19 arrivals against



29 departures), leading to a significant weakening, especially for some teams. Still, the unit takes very good care of its human resources. In addition, even though it is still not very well integrated in the local academic environment, the unit was reasonably attractive to PhD students but it could train more students and should hire more postdoctoral fellows.

Given the field of research and the animal models used, the scientific production of the unit is not only abundant (320 research articles, 58% as lead author) but also of very good to excellent quality, with most publications in well-recognised speciality journals and many collaborative works across the world. However, the diversity of subtopics in each team probably hinders the development of more mechanistic lines of research. The proposed restructuration of the teams should be the occasion for a definition of more focused projects. Of note, the unit has a strong level of shared publication between different teams.

The socio-economic interactions of the unit are excellent and hold the capacity to be extended, notably in terms of valorisation, so as to reach an outstanding level. The unit has established strong links with the breeding societies Elliance (leading to the creation of the associated lab Epsilon) and it obtained substantial contracts with private companies, in particular in the ruminant and horse breeding sectors (APIS-GENE and IFCE, respectively). Some members of the unit are also implicated in clinical transfer and in communication toward policy-makers, teachers and the general public.



DETAILED EVALUATION OF THE UNIT

A - CONSIDERATION OF THE RECOMMENDATIONS IN THE PREVIOUS REPORT

The previous committee made the following recommendations.

"BDR/BREED's teams are encouraged to attempt to target journals of higher impact factors. It is also recommended to try to sign papers as last authors or co-last authors, especially in collaborative papers."

The unit increased its rate of publication as last authorship from 37% to 57%. The units essentially publishes in well-recognised journals, with respectively up to 71% of the publications signed as PCD.

"During the next contract, technicians and engineers mastering specific techniques will retire. The unit must consider sustainable recruitment in order not to risk losing some of its historical skills."

One DR, one CR and one IR, from another lab, were integrated into the BREED in 2020. Two CRs were recruited during the period under review - but one of them left. Requests for positions are sent to the Inrae Phase department every year, resulting in the recruitment or promotion of one or two support staff every year. The number of support staff remained stable but the number of researchers has continued to decrease.

"The individual workload is increasing due to staff reductions, regulatory changes and on-site changes.

Specific measures must be envisaged improving the situation, such as remuneration and/or compensation for travel and hardship or the improvement of campus infrastructure."

The unit has set up an on-call system for monitoring samples stored in freezers and refrigerators for which Inrae staff can benefit from recuperation hours or financial compensation. The infrastructure of the campus was improved: the aeraulic system was changed, most staff were relocated in the same building with better working conditions and a new platform for ruminant embryo production was built, shared with the Eliance company.

"Various actions such as the creation of a common catering room or the organisation of "technical cafés (in the planning stage) will improve exchanges between people, teams and the integration of new entrants into the unit."

Three coffee rooms were opened, with weekly activity for all the staff. A unit retreat is also organised every year and a quarterly newsletter is published. Other regular social events are in place.

"In view of the ambitious research projects proposed by the five BREED teams and the challenges that the unit will continue to face (reduction in staff, difficulties in accessing laboratory animals, difficulties in obtaining sufficient financial support in the field of animal reproduction...), it will be necessary to prioritise them correctly." A re-evaluation of the project was conducted leading to a restructuration proposal for the next contract.

"With its already-established links with the non-academic sector and its development potential in the

agronomic and biopharmaceutical sectors, the unit should try to strengthen and diversify its relations with the private sector."

An Associated Partner Laboratory (LPA) was created with the company Elliance (a follow-up of the previous LabCom Sequamol). Some collaborations were established with the Breeding Institute (Idele) and the unit was associated with the Institut Carnot "France Futur Elevage". One project was supported by the University Paris-Saclay Transfert Society (SATT). Some contacts were established to promote the unit's research toward two other societies.

B - EVALUATION AREAS

EVALUATION AREA 1: PROFILE, RESOURCES AND ORGANISATION OF THE UNIT

Assessment on the scientific objectives of the unit

The unit has defined a very good to excellent set of objectives, which are sound from a fundamental stand point and particularly relevant for the improvement of animal breeds. These objectives are very well integrated with their main supervising body policy. The merger with a clinically oriented team did not bring the expected level of scientific interaction and synergies. The academic integration of the unit could be improved.



Assessment on the unit's resources

The unit benefits from very good to excellent resources. It still has a strong number of support staff but its human resources have decreased during this contract and it hosted relatively few students or fixed-termed contract employees. The unit has access to some unique animal facilities and valuable technological platforms with state-of-the-art equipment. The unit obtained very good financial resources, with the constitution of an important shared budget to cover essential costs.

Assessment on the functioning of the unit

The functioning of the unit is excellent, with outstanding potential. It relies on an efficient management which involves the different categories of personnels, and clear internal procedures. The unit complies adequately with all its institutional requirements and it is strongly engaged in sustainable development approaches.

1/ The unit has set itself relevant scientific objectives.

Strengths and possibilities linked to the context

The unit has relatively broad but well-identified and scientifically relevant lines of research along the Developmental Origins of Health and Disease (DOHaD) thematic and their underlying epigenetic mechanisms. The scientific policy of the unit was defined and discussed collectively, in relation with Inrae 2030 strategical plan. The unit's research fits particularly well with the strategic plans of Inrae Phase and AlimH departments, notably along the following axes: Reproduction and Early Development, Animal Behaviour, Adaptation and Welfare, Preserving the health of farm animals, or characterising and preventing toxicological risks. Thus, its research is also relevant to human health, notably in the field of human reproduction and fertility, which is a governmental priority.

Weaknesses and risks linked to the context

While the use of farm animal models is very interesting and gives a strong visibility to the unit, the multiplication of models and projects in each team may hamper the development of more mechanistic lines of research.

As acknowledged in the auto-evaluation report, the extension of the research scope from animal models to humans with the integration of a clinically oriented team working on human reproduction and infertility failed to bring a clear added value and did not reinforce the coherence of the unit. This is likely due in part to the multi-site localisation of the different teams but also to lose thematic convergences, limited practical as well as scientific integration procedures, and poor relations with the head of the incoming team.

The integration of the research unit in the academic curriculum could be improved. Members of the unit have no clear implication in the graduate school for Life Science & Health. While they are investing some efforts in the graduate school Biosphera, the agro-ecological orientation of this formation does not seem particularly fitting. Also, the unit's links with AgroParisTech are not very strong and the implication of the ENVAaffiliated professors/assistant professors in the life of the unit remains complicated.

2/ The unit has resources that are suited to its activity profile and research environment and mobilises them.

Strengths and possibilities linked to the context

The unit is composed of seventeen Inrae researchers and fifteen professors/assistant professors as well as 50 support staff, essentially employed by the Inrae (36 of them). Accordingly, almost all the teams have an excellent level of technical support and the common services are rather well staffed.



The unit benefits from a very good level of funding, with ~270k€/year of recurrent support from its supervising bodies and ~1M€ of grants. A large fraction of the recurrent budget (70%) is devoted to the common budget, which is consolidated by a 10% levy on research contracts (excluding non-permanent staff and services) and a 5% tax on external services provided by BREED teams and the ANR "preciput". This common budget of ~260k€/year mostly allows covering essential recurring expenses and to invest in some shared equipment. Most of unit's staff are based at the Inrae site of Jouy-en-Josas where they benefit from well-structured research facilities, with shared facilities and equipment. For instance, they have access to the MIMA2 collective scientific infrastructure IMEO for embryo and organoid microscopy and CIMA for surgery and medical imaging. The unit also has equipment for rodent behavioural studies and a unique workshop for the production of bovine embryos. Several members of the unit work on these shared platforms. Of note, the unit contributed to the acquisition of a Light Sheet confocal microscope as well as a micro-echograph and surgical tables, with the support of specific co-fund grants (Paris Île-de-France DIM, Inrae AlimH & CNOC, Chaire UVSQ).

Weaknesses and risks linked to the context

The number of staff in the unit has decreased during this contract (-10) with some retirements (9), which were not compensated by fresh recruitment, despite the unit's efforts, but also with the departure of many employees (16) - even among recently recruited ones. Consequently, two teams (DGP and PEPPS) have shrunk considerably in recent years.

While the unit has a very strong level of funding, which has increased during this contract thanks to a higher level of external contracts, its common budget is currently not sufficient to set up strategic actions.

3/ The unit's practices comply with the rules and directives laid down by its supervisory bodies in terms of human resources management, safety, environment, ethical protocols and protection of data and scientific heritage.

Strengths and possibilities linked to the context

The functioning of the unit is excellent. The unit director works in close collaboration with a deputy director. It is also assisted by the team and transverse mission heads. Regular meetings are held with the PIs (every 2-3 weeks), the unit council (quarterly) or all the staff (general assembly/lab retreat: yearly). The different categories of personnel are strongly implicated in the life of the unit. Notably, the definition of the next contract project was the fruit of regular and intense discussions. Various social events are organised to ensure the cohesion and good atmosphere of the unit (recipe contests, phot expositions, beginning of year greetings...). A quarterly newsletter is published.

Newcomers are informed about internal procedures by the HR manager and additional information (safety procedure, risk, informatic chart...) are provided by the Prevention Assistant and/or available on the unit's intranet. Adequate measures to prevent psychosocial risks, harassment or discrimination are in place. Almost all the team leaders followed an Inrae HR management course.

The unit managed very appropriately the Covid crisis and (de) confinement measures. It also invested in new equipment to maintain the lab safety and ameliorate the working conditions, but also to ensure tracing of samples (LabCollector) or the protection of their scientific data (new servers and instant back-up systems). Due to the use of animal models, some parts of the unit have been placed under a restricted-regime zones (ZRR) in 2024.

The unit is strongly engaged in sustainable development approaches. It participates in the Labo1Point5 initiative. A member of the unit has integrated the Inrae Jouy-en-Josas RSE Network and works with a Greenbreed committee, which put in place several actions to reduce the ecological impact of the unit. Also, the unit has regrouped most of its staff at the Inrae centre in Jouy-en-Josas on a single site. The floor space rationalisation allowed to disengage from an energy-intensive building, in the hope of reducing fluid consumption.

Overall, the different categories of personnel expressed their satisfaction with the management of the unit and felt very well supported by the director and deputy director. The governance of the unit should be praised for its efforts.

Weaknesses and risks linked to the context

The interactions with the members of the units that are not located in Jouy-en-Josas remain limited/more difficult.

The support staff have an increasing number of missions to take in charge at the expense of their research/main activity.

Apparently, the functioning of one team was not adequate and led to the recent dismissal of its PI.



The situation of some PhD students in this team is not appropriate. The committee felt that the position of the UVSQ Doctoral School to accept PhD students without clear working contracts was not adequate and the committee concurs with the head of the unit that this should not happen.

EVALUATION AREA 2: ATTRACTIVENESS

Assessment on the attractiveness of the unit

The unit attractiveness is excellent. Members of the unit are actively involved in international collaborations and regularly present in conferences (>100 invitations). Some members of the unit have a very strong visibility. The unit obtained consequent funding in national as well as European competitive calls (~6M€ over the period) and it has significantly increased its funding level during this period. The unit attracted a good number of PhDs (26) as well as many researchers or support staff, essentially through mobility. Its policy in terms of HR accompagnement is perfectly appropriate.

- 1/ The unit has an attractive scientific reputation and is part of the European research area.
- 2/ The unit is attractive because for the quality of its staff support policy.
- 3/ The unit is attractive through its success in competitive calls for projects.
- 4/ The unit is attractive for the quality of its major equipment and technical skills.

Strengths and possibilities linked to the context for the four references above

The unit obtained an excellent level of external funding given its field of research (~1M€/year). While national grants (e.g. 9 ANR as coordinator and 13 as partner) account for a large fraction (80%) of this budget, the unit also obtained some international contracts (5, including the "RUMIGEN" H2020 contract as coordinator), regional supports for investments (e.g. 2 DIM) and industrial contracts (25, including 11 with Apis-Gene). The overall budget of the unit steadily increased from 970k€ in 2018 to 1700k€ in 2023, thanks to a higher level of external funding in the last two years, which is remarkable.

The unit is associated with the Institut Carnot "France Future Elevage" and with the Biological Resources Center "Anim". It is well integrated in national research groups such as Celphedia (Création, ELevage, PHEnotypage, DIstribution et Archivage d'organismes modèles) or the GDRs Repro and O3. One team is a partner of the LabEx Revive and another one participates in two European Cost projects.

The unit is also relatively attractive to scientists and students. Two researchers and one research engineer, from another lab, were integrated into the BREED in 2020. In addition, two researchers were recruited during the period under review and the unit hosted 26 PhD students.

The recognition of the unit is very well attested at the national and international level. For instance, members of the unit presented oral papers at 236 conferences, including 158 international (70 invited) and 78 national (41 invited) conferences. In addition, 113 posters were presented, 84 of them internationally. The unit also contributed to the organisation of several national international meeting/conferences (European Placenta group, SF-Dohad, GynFoch...) and they organised a European school on organoid models in 2023. Besides, the unit welcomed 23 visiting researchers at various levels (8 from Europe and 15 from outside Europe) and 45% of the publications of the unit are signed with international collaborators.

A few scientists of the unit also received national awards/recognitions (Prix Jean Bernard FRM, Gold Medal from the Agriculture Academy, officer of the national order of merit, Forbes France 40 Women) or hold responsibilities in learned societies (Académie de Médecine, Société d'Andrologie de Langue Française, Société Francophone de la Dohad, European College of Animal Reproduction, International Embryo Technology Society, European Placental Group...).

The unit is responsible for a good part of the ISC/Ibisa-labelled platform MIMA2, with state-of-the-art equipment for cell/tissue and animal imaging, with 70% of the platform staff affiliated to the unit. Besides, the competences of the unit for the use of large/farm animals and its technological platforms for animal phenotyping or ruminant



embryo production are particularly strong and position them as leaders in the field in Europe. The unit is also very well positioned in terms of equipment and skills for genome-wide analysis of DNA methylation.

The unit has a good level of scientific animation, with weekly seminars involving internal or invited speakers and monthly multidisciplinary seminars within the SAPS framework. It also proposes a PhD seminar day once a year as oral training for Master 2 students.

The unit has a dedicated and up-to-date web site with an intranet to help the integration of newcomers, who can also benefit from Inrae and University Paris Saclay facilities, both in terms of housing or administrative procedures.

Its employees have a very good access to continuous formation and several staff obtained a promotion during this period (notable: five "changement de corps" for support staff and one CR to DR promotion for researcher).

Weaknesses and risks linked to the context for the four references above

As mentioned above, several members of the unit have left during this period, including one of the recently recruited researchers. While this is probably not directly related to the quality of the science or the organisation of the unit/teams, it does not speak in favour of its attractiveness and will eventually affect its operational capacity.

Along the same line, although the unit obtained the opening of a tenure-track professor position (CPJ) from the Inrae, the position was not filled twice (2022, 2023). It was eventually successful in the third round, thanks to the definition of a wider scientific profile.

In comparison with the number of scientists currently holding an HDR position (25), the number of PhD students hosted during this six-year period (26) could be improved. However, it should be noted that the relative isolation of the unit and its limited representation in academic bodies do not help in recruiting students, particularly PhDs. Also, the fact that the Inrae allocates some 1/2 PhD fellowships is a real opportunity to attract students, but finding the financial complement seems complicated.

The number of postdoctoral fellows stays low (only three, for 30 months in total).

EVALUATION AREA 3: SCIENTIFIC PRODUCTION

Assessment on the scientific production of the unit

The unit has a very good to excellent production for its field of research, with many publications (320 articles) and some important findings (notably via external collaborations). It also has a strong level of shared publication between different teams.

- 1/ The scientific production of the unit meets quality criteria.
- 2/ The unit's scientific production is proportionate to its research potential and properly shared out between its personnel.
- 3/ The scientific production of the unit complies with the principles of research integrity, ethics and open science. It complies with the directives applicable in this field.

Strengths and possibilities linked to the context for the three references above

The unit has published 320 articles and signed 58% of them as the main author. Research articles were essentially published in well-recognised journals, with> 70% of the publications signed as the main author. Overall, this corresponds to two or three publications per full-time equivalent researcher per year. Interestingly, PhD (although they contribute to a small fraction of all the articles: 21%) published a very good number of papers (mean 3.8; 70% of the PhDs with at least 2 papers). Of note too, a large fraction of the publications (~20%) were co-signed by members of different teams. In addition, as mentioned above, members of the unit presented their work orally in more than 200 conferences and exposed more than 100 posters. The unit also published 20 book chapters and a similar number of review articles.



The unit generated interesting discoveries concerning the mechanisms of adaption in various species, with for instance novel insights into the chromatin and epigenetic organisation of the early embryo in mammals, the functional analysis of different genes implicated in gonad differentiation and fertility. It also contributed to the analysis of the impact of environmental conditions including diet composition or atmospheric pollutants on postnatal phenotypes, and it developed valuable projects to improve animal adaption and fertility (including for humans).

The unit follows the Inrae guidelines to promote open science practices and reached ~75% of publications in open access during this period. Notably, all the published articles from the unit are available in the HAL repository. Besides, the unit's management encourages its personnel to acquire scientific writing skills and pay close attention to the rare case of non-publishing scientists. Support staff are adequately associated to publications.

The use of the LabCollector database has been implemented to facilitate the traceability of samples and processes. A data management plan for the unit is being prepared. The unit complies with the regulations relating to animal experimentation, GMOs and human biological samples.

Weaknesses and risks linked to the context for the three references above

The publication record of the unit could be improved in terms of quality: most articles in main author are published in speciality journals, some clearly recognised in their field (Animal, Human Reproduction, Fertility & Sterility...) but some less well positioned (e.g. Basic & Clinical Andrology, BMC Genomics, Genes, Journal of Assisted Reproduction and Genetics, Journal of Equine Veterinary Science, Reproduction, Fertility and Development, Theriogenology...) or with equivocal publishing models (Frontiers in..., , IJMS...). Except for a few cases, the most visible publications are the fruit of collaborative works and not signed in lead

Except for a few cases, the most visible publications are the truit of collaborative works and not signed in lead positions by the unit's scientists.

EVALUATION AREA 4: CONTRIBUTION OF RESEARCH ACTIVITIES TO SOCIETY

Assessment on the inclusion of the unit's research in society

The unit contribution to society is excellent. It established strong links with Elliance and obtained very substantial funding (>1.5M€) from private companies, in particular in the ruminant and horse breeding sectors. It is also implicated in clinical transfer and in communication toward policy-makers, teachers and the general public.

- 1/ The unit stands out for the quality and the amount of its interactions with the non-academic world.
- 2/ The unit develops products for the cultural, economic and social world.
- 3/ The unit shares its knowledge with the general public and takes part in debates in society.

Strengths and possibilities linked to the context for the three references above

The unit has created the EPSILON (Epigénétique, PhénotypeS, Intégration et séLection) associated laboratory (LPA) with the breeding federation society Elliance to help produce better ruminant breeds by studying semen epigenetic. This LPA, strongly associated with the MeCP2 team and co-directed by H. Kiefer (Inrae) and Christelle Le Danvic (Eliance), is a follow-up of the previous Labcom Sequamol (2014-2019). It currently hosts five Elliance employees and has generated ten publications during this period. It has been associated with two ANR grant together with Apis-Gene and one H2020 project (Rumigen).

The unit stands out by the amount of funding obtained with the private sector. Notably, the Apis-Gene consortium of ruminant breeding societies funded eleven projects for a total ~1M€ and the French Horse & Riding Institute (IFCE) funded seven projects for a total of ~550k€. On the clinical side, the unit also obtained funding from the CHU of Dijon, the Foch Hospital or the private companies NordicPharma and Kallistem. In



addition, two PhDs were financed on a Cifre program. Some efforts were devoted to approach other companies and broaden the unit's socio-economic interactions.

Furthermore, some collaborations were established with the Breeding Institute (Idele) and the unit was associated with the Institut Carnot "France Futur Elevage". One project of time-lapse imaging of embryonic development was supported by the University Paris-Saclay Transfert Society (SATT). The work performed in the unit had a certain impact on horse breeders, with the results being translated into technical data sheets distributed by the IFCE.

Some members of the unit also contributed to the production of a synthesis work on epigenetic for teacher & higher education or to a report on the causes of human infertility for the Health Ministry. The unit (and in particular its director) participates in some outreach activities and in actions toward the general public, notably on DOHaD thematic but also on GMO.

Weaknesses and risks linked to the context for the three references abovet

The unit did not deposit any patent during this period.



ANALYSIS OF THE UNIT'S TRAJECTORY

Following the departure of a number of researchers and support staff, and difficulties encountered in interactions with the Rhuma team, the unit is proposing a major reorganisation of its teams, while maintaining its main scientific themes, which are organised around three axes: (1) Improve knowledge of gene expression dynamics during gamete formation and early embryonic development in different animal species, (2) Determine the effects of environmental perturbations on developmental processes and postnatal phenotypes - develop approaches to correct and/or improve phenotypes. (3) Identify fertility biomarkers, develop infertility treatments and improve reproductive biotechnology.

One global objective is to support livestock farming in its adaptation to climate change and its commitment to agro-ecology-compatible itineraries, while the other aims to improve the fertility of the human population. These objectives are in line with Inrae's priorities as well as with current political orientations and societal challenges. They clearly draw on the unit's strengths.

Regarding the organisation of the unit's life, management will remain the same, with the current director/deputy director and the unit's main structures (board of directors, laboratory council, research support team, platforms, etc.) maintained. A council will be set up to promote the unit's scientific life. Likewise, interactions with supervisory bodies (Inrae, UPS), local research units and national collaborative structures will be maintained. The unit will of also strive to integrate two recently launched national programs (PEPR Agroécologie & Numérique; Santé des Femmes) as well as to strengthen links with European networks (e.g. MSCA Doctoral Networks: Bullnet, Affrodita) and international collaborations.

Regarding the structuring of the unit, major changes are proposed to the framework of the teams. On the one hand, some of the UVSQ staff in the Rhuma team will be leaving the unit to develop therapeutic approaches in human medicine elsewhere, and the other staff will be joining two other teams in the future BREED unit. These moves may favour the integration of the "human" lines of research in the unit. On the other hand, the DGP and PEPS teams will not be renewed, but will merge respectively with staff from the EPEE team to form the EGG (Embryo Gametes Gonades) team, or with part of the MeCP2 team to create the Progenie team. The remainder of the MeCP2 team will form the DREAM team and will remain associated with LPA Epsilon.

While the unit members were strongly involved in a collective-based redefinition of the teams, the unit would probably have benefited from external advises (e.g. a SAB) for its reorganisation, for the appointment of new team leaders or for the definition of its main scientific objectives. In fact, the clarity of these restructurings is not always obvious and does not seem to be systematically accompanied by a targeted redefinition of research themes within each team, aimed at highlighting areas of strength to be prioritised. Accordingly, the long-term scientific trajectory and ambition of the unit could be better defined by drawing more strongly on the unit's skills and specificities. This could boost the unit's scientific dynamism and enhance its attractiveness. It is anticipated that the recently set up "scientific council" of the unit should permit to identify these lines of strength & help define the overarching scientific vision of the unit.



RECOMMENDATIONS TO THE UNIT

Recommendations regarding the Evaluation Area 1: Profile, Resources and Organisation of the Unit

The committee recommends that the unit focuses its (still) abundant permanent human resources on a lower number of research projects.

The definition of the research teams and work-package leaders could be improved.

The unit is encouraged to continue to refine its scientific objectives, taking advantage of its internal scientific council as well as with the help of an external scientific advisory board.

Recommendations regarding the Evaluation Area 2: Attractiveness

The unit should try to attract more PhD students. It should in particular try to make the most of the opportunities given by the 1/2 PhD fellowships offered by the Inrae.

The PI should try to obtain more funds at the international level and to attract postdoctoral fellows.

The unit should define a stronger scientific strategy in terms of recruitment of new staff and teams.

Recommendations regarding Evaluation Area 3: Scientific Production

The unit should try to further privilege quality over quantity. Indeed, the committee felt that the unit has the resources to develop more ambitious projects leading to higher-level publications, notably by prioritising its projects. Along that line, the committee strongly recommend reducing either the number of animal models or the number of processes that are studied. The latter choice may be more adequate to maintain the originality of the unit.

The committee recommends trying to keep more frequently a leadership position in collaborative works.

Recommendations regarding Evaluation Area 4: Contribution of Research Activities to Society

The committee recommends that the unit maintain its strong links with breeding societies and endeavours to extend its portfolio of economic interactions as well as its capacity to transform its findings into patents.

Given its topic of research, the unit could also play a more proactive role in the organisation of communication toward the general public.



TEAM-BY-TEAM OR THEME ASSESSMENT

Team 1:

EPEE

Name of the supervisor: M

Mss. Alice Jouneau and Amélie Bonnet-Garnier

THEMES OF THE TEAM

The team carries research along three axes: (i) deciphering the molecular, cellular and epigenetic mechanisms underpinning early embryonic development up to gastrulation, (ii) understanding the impact of embryonic environment on developmental potential and (iii) improving in vitro production of embryos. A diversity of models is used to tackle these questions (lab model: mouse; domestic species: bovine, rabbit; and human).

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

a) Limited international exchange and foreign postdoctoral student

Some visiting scientist and short-term postdoc have been hosted by the team. So, there are some improvements and this should be further strengthened.

b) Increase pdc publications

The group has a significant number of "PDC" publications, however, in most collaboration EPEE members are in non PDC position, which suggests that the team provides a service rather than drives the scientific project. c) Increase involvement with the private sector and patent

An association with Eliance has been initiated/strengthened, but has not yet led to patents.

d) Increase DR/CR recruitment

A new CR has joined the team, but this is someone coming from another team of the unit rather than an external recruitment.

e) The previous committee underlined the high level of dispersion of the scientific projects

There are still quite a large number of projects/research direction listed and it is not clear from the report how the team has attempted to focus its activities.

f) <u>Weaknesses for the analysis of OMICS data</u>

The report indicates that training of staff has been organised at the unit level. Details are lacking to grasp the extend of this training and how important it will be to meet the widespread need for OMICs analysis in the unit. g) Doubt about the integration of the human reproduction axis

A PhD in co-supervision is ongoing between researchers of the team and a PUPH, so it seems that the PUPH activity is indeed truly integrated to EPEE.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	1
Maîtres de conférences et assimilés	0
Directeurs de recherche et assimilés	0
Chargés de recherche et assimilés	4
Personnels d'appui à la recherche	15
Sous-total personnels permanents en activité	20
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	2
Sous-total personnels non permanents en activité	2
Total personnels	22



Overall assessment of the team

The EPEE team develops research activities in the field of reproductive science and environment that are of major economic and medical relevance. The team benefits from state-of-the-art expertise in embryo production, manipulation, and analysis that put it in a unique position to develop fruitful collaborations. Its attractiveness is very good to excellent. It benefited from diversified sources of funding and recruited five PhDs as well as seven engineers/technician. The scientific production is very good to excellent; it is sustained but unequal across the different research axes. The socio-economic interactions are very good, as illustrated by its links for the private company Eliance.

Strengths and possibilities linked to the context

The team is successful in attracting and preparing students to compete for PhD fellowship attribution, having secured five PhDs for this mandate. During this mandate, seven engineers/technician have been recruited to the team in order to replace retiring technical staff. The unique team expertise/capacity for the generation and manipulation of the embryo has contributed to the team visibility with numerous international collaborations leading to co-authored publication. The team is also part of several international Programs (Hubert Curien, ITN Marie Curie, Programme H2020 Rumigen) that foster collaborations/exchanges between labs. Funding by the team is diversified, with grants obtained from ANR (one as coordinator single team, one as partner), three involving industrial partners (Apis-gene), two recurring grants related to PIA (Labex Revive, CRB anim), as well as some minor grants (ABM etc...). Members of the team are involved in scientific expertise to regulatory body (Member of ABM Embryo Committee).

The team has a sustained scientific production on the considered period with 42 articles published across the three research axes. These include approximately ten where a team member acts as corresponding authors. The embryo development axis is particularly successful with multiple productions in leading generalist (Nat Com, 2020, EMBO reports) and specialist (Development) journals. PhD students hosted by the team are successful, all of whom having at least one first author paper in a peer-reviewed journal. Publications stands out by the diversity of models used to investigate various aspects of early embryonic development. Numerous technological improvements and/or implementations have been achieved recently (transcriptomic, epigenetic analysis in embryos with a very limited amount of material, time-lapse analysis, etc.) which can serve as a stepping stone for in-depth investigations.

EPEE has developed a collaboration with a private partner, Elliance with mutualisation of the bovine embryo generation lab as well as the obtaining of common grants (Apis-gene). The team expertise of embryo technologies is used to assist in setting up a start-up company. The PUPH of the team is actively diffusing science to the general public through interaction with patient groups as well as media interviews. The lab regularly hosts secondary school students.

Weaknesses and risks linked to the context

Despite hosting a few visiting scientists/postdoc for short periods of time during this mandate, the recruitment of postdoc is very limited. For a team of 20 permanent staffs, including five researchers, the involvement/training of students should be bolstered. Diffusion of research output to the (international) scientific community needs to be an area of focus, the team self-reporting very limited invitation to speak at conferences.

It seems that developing four main research topics (embryo development, effect of environment on developmental fitness, improvement of reproductive biotechnologies, Uterine pathologies) is stretching the team capacities: the scientific production is unequal across the axes, with major contributions coming mostly from the embryo development investigations. EPEE might benefit from focusing on the more productive axes in order to move from generally descriptive work to more impactful functional investigations. The contribution of EPEE members to collaborative effort could be improved by taking driver role, this in order to promote visibility.

Interaction with industrial partners is welcome; the team should now aim for translational output (i.e patent) on technological improvements in the reproduction of domestic species. Outreach activities seem limited to human infertility when the bulk of research is on animal development. Researchers involved in the later activities should be more implicated.



Analysis of the team's trajectory

The EPEE team will merge with the remaining members of the DGP team to form the EGG team. See below for its trajectory.

RECOMMENDATIONS TO THE TEAM

The committee recommends that the team focuses on the more productive axes and moves from generally descriptive work to more impactful functional investigations.



Team 2: Rhuma

Name of the supervisor: Mr François Vialard

THEMES OF THE TEAM

The team focuses on research in reproduction for humans, whether biomedical or directly on human patients or tissues, although research in cattle is also present. The research is organised in four themes: Genetics and Infertility; Hypofertility in relation to materno-foetal interface inflammation; Search for biomarkers; Development of new therapeutic approaches.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The team was created at the last evaluation and did not receive specific comments. Nevertheless, in the general comments to the unit, one comment was:

The extension to the human model although pertinent, remains elusive and the real added value is difficult to perceive at this stage taking into account the practical context of the two research entities.

No response is given in the team's auto-evaluation for this demand. The hearing revealed that the concerns expressed by the previous Hcéres committee were justified.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	6
Maîtres de conférences et assimilés	4
Directeurs de recherche et assimilés	0
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	12
Sous-total personnels permanents en activité	22
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	7
Sous-total personnels non permanents en activité	7
Total personnels	29

EVALUATION

Overall assessment of the team

The team is composed of many members and conducts dispersed research projects, leading to an important number of publications (136), mostly of very good quality. The team addresses very well the patients' and society's needs; it is linked to many patients' association, two patents have been deposited and one book on infertility for the public has been produced, reflecting an excellent to outstanding socio-economic impact. The team attracts sufficient funding (~900k€), including with industrial/pharma partners, and hosts many students (9), but its management is questionable. The team's visibility is excellent at the national level, but there is some work with outstanding visibility such as uterine graft.



Strengths and possibilities linked to the context

The team's visibility is mainly national and is attractive for students (doctoral students: N=9 and master students). The members of the team belong to many national scientific societies and participate to the edition of professional recommendations. One member of the team is a founding member of the International Society of Uterus Transplantation (ISUTx). The team also organises the "congrès annuel Gynfoch", which attracts a lot of clinicians (up to 1000).

The team obtained a very good level of national funding, including two grants from the two ANR-backed projects (1 as coordinator), one from the Agence de Biomedecine and five from patients' associations.

The team is composed of many members, most of which clinicians that contribute with very little time to the research projects, but still they have been producing between twenty and 40 review articles and between 16 and 36 original articles per year, which is remarkable (altogether N=136 articles). The quality of the publications is globally very good, but heterogenous. The mean number of articles per researcher is 3.65/year.

The non-academic activities are excellent to outstanding with patent developments (N=2) and biotech collaboration (i2S company) for working on human development. A book on infertility was produced. Outreach activities include small videos to put posted on YouTube. The GynFoch congress is also open to society, with systematic press briefings and interactive closing conferences with participants open to the general public.

Weaknesses and risks linked to the context

The team did not obtain international nor European grants, which should be possible because of the reputation of the team, at least in some areas such as uterine graft. The team attracted 900 k€ funding over the evaluated period, but the funding is irregular.

Although all axes developed by the team are highly productive, there is a risk to lose capacity of remaining at the cutting-edge on each topic, and also a risk of thematic dispersion, as the research themes are very dispersed and not necessarily within the overall focus of the unit. There are also many Principal Investigators (N=9) that leads to scientific dispersion.

Vulgarisation/interaction with the general public is led by a limited number of team members.

Analysis of the team's trajectory

The team has joined the BREED unit during this contract but will not renew its association in 2026. Most team members will participate in the UVSQ/Inserm UMR project Improve (Innovation thérapeutique : de la physiopathologie à l'appliqué dans les pathologies neuro-musculaires, la reproduction et le développement). A few members of the team will join the future teams EGG and Progenie to ensure a better integration of their research in the unit.

RECOMMENDATIONS TO THE TEAM

It is strongly recommended that the team significantly improves its human resources management and pays due attention to possible harassment situations.

The team members should consider refocusing their activity on a more limited number of thematics in the field of Reproduction and Fertility to achieve a higher scientific impact in their research.

The team should apply to European funding.



Team 3: DGP

Name of the supervisor: Ms Béatrice Mandon-Pepin

THEMES OF THE TEAM

The team studies the mechanisms that control germline and gonad differentiation in species of agronomic interest (ruminants, rabbits), as well as in mice and turtles for certain projects. These processes are studied under normal conditions or under genetic or environmental perturbations.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

- The team needs to improve on the publication record and quality of publications.

The team's scientific output for the past period (26 original contributions, including 7 led by the team, and 14 reviews) is comparable to that of the previous period (31 original contributions, including 11 led by the team, and 11 reviews), both quantitatively and qualitatively. However, the number of team members has gradually decreased over the period, as the team is due to close, which has certainly had an impact on its productivity.

- The team should build on its strengths and be careful to not overly diversify. The team has an excellent international reputation in sex determination and to a lesser degree in germ cell biology. It should focus on those two themes, particularly sex determination, where it regularly attracts national funding and continues to produce high-quality research output.

The team's publications have mainly concerned these two themes, although collaborations on other topics have been pursued, mainly for projects involving transgenesis. The number of projects remained important for the size of the team.

- The recruitment of postdocs and students should be a priority to bring a dynamic to the projects. The situation in this respect has not changed significantly since the previous term, with the same number of PhD students (4) and no postdocs hired during the period under review.

- Interactions with the private sector could be improved. Interactions with the private sector mainly involved a collaboration with Eliance, as in the previous period.

- They should continue to build collaborations with biomedical groups and use this to aim for higher impact factor publications.

There has been active collaboration with the Rhuma team on the characterisation of mutations causing azoospermia in humans, resulting in five publications.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	0
Maîtres de conférences et assimilés	0
Directeurs de recherche et assimilés	1
Chargés de recherche et assimilés	2
Personnels d'appui à la recherche	3
Sous-total personnels permanents en activité	6
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	1
Sous-total personnels non permanents en activité	1
Total personnels	7



Overall assessment of the team

The DGP team focused on sex differentiation, with several additional collaborations capitalising on its recognised expertise in transgenesis. DGP was able to maintain a high level of activity despite multiple departures over the course of the term. The attractiveness of the DGP team is very good to excellent, with approximately 0.7 M€ (one H2020 project and 5 ANR projects, including 1 as coordinator). The team's scientific output is very good to excellent, with 40 publications, including 26 original publications (7 as lead authors in eLife, Plos Genetics, Frontiers in Cell and Developmental Biology, Endocrinology, Reproductive Toxicology, Genes). The socio-economic interactions of the team were very good, including several collaborations with Eliance and some outreach activities.

Strengths and possibilities linked to the context

Attractiveness:

The team has been successful in securing external funding, with five ANR grants obtained over the evaluation period, including one as coordinator, and one European grant, the H2020 Rumigen project, coordinated by the team. In total, DGP obtained approximately 0.7 M€ during the mandate.

The team's visibility is very good to excellent, with 32 communications at national and international conferences (15 oral presentations, including 5 invited papers). The team has also participated in the organisation of a European conference (European symposium on sex determination in vertebrates), and a member of the team was on the organising committee of the international conference 'Vertebrate sex determination' until 2022. Members of the team are also on the editorial boards of the journals Sexual Development and Frontiers in Cell and Developmental Biology.

DGP has established numerous national collaborations (with joint ANR funding with teams from the Institut Pasteur, CEA and I2BC) and international collaborations (Universities of Toledo, Aberdeen, Nottingham, Prague, Geneva; NIH).

The team has gained international recognition for its expertise in non-rodent mammal models, in particular its technical skills in transgenesis and genome editing in these species.

Scientific output:

The team has published 26 original articles, seven of which were led by the team, and fourteen review articles. The team's work includes several studies on the mechanisms regulated by the FOXL2 transcription factor, which controls ovarian differentiation. The team has shown that DMXL2, whose expression is regulated in goats by FOXL2, is involved in the first wave of spermatogenesis in mice (Plos Genetics 2019). Other studies have characterised the respective impacts of two FOXL2 outputs, oestrogen production and DMRT1 testicular gene expression, on ovarian differentiation in rabbits (Endocrinology 2022; Genes 2022; eLife 2023). The team developed a system for culturing sheep foetal ovary fragments in vitro and demonstrated the negative impact of Bisphenol A on meiosis I in this model (Reproductive Toxicology 2022). Of note, eighteen publications were produced with other BREED teams, including four with the Rhuma team following co-supervised theses on the characterisation in mice of mutations affecting male fertility in humans.

Other ongoing work includes the production of sheep with null alleles of the NPVF gene, which codes for a neurotransmitter peptide that affects reproductive seasonality (ANR GMO-Phen funding), the production of goats with null alleles of the PRNP gene coding for the PRION protein that are potentially resistant to scrapie (H2020 Rumigen project), a collaboration with the MECP2 team and Eliance to characterise the kinetics of methylation in germ cells during testicular development in ruminants, and a European collaboration aimed at identifying the mechanisms of sexual determinism in turtles.

The three PhD students who defended their thesis during the evaluation period published as the first authors.

Non-academic interactions

The team has established several collaborations with Eliance. Its members have also contributed to the discussions on new selection methods likely to be more widely accepted by society (via the Rumigen project), and have contributed to various events aimed at the general public.

Weaknesses and risks linked to the context

The team lost a significant proportion of its permanent staff during the term, with four researchers and two Parleaving the team (2 retired). This has led to a loss of skills, including in areas that contribute to the team's visibility, such as the production of genetically modified rabbits.



The overall number of publications lead by the team is not high, which is partly linked to the study models, which take a long time, but also to the lower productivity of some of the members.

There is only one researcher left with an HDR, and the researcher who took over as team leader in January 2024 does not have one.

There have been few PhD students (2 theses initiated, 3 defended), and it has been difficult to attract postdocs because of the models used, which require long study times.

Analysis of the team's trajectory

The remaining members of the DGP team will be joining EPEE and some members of Rhuma to form the EGG team for the next mandate (see below for the analysis of its trajectory).

RECOMMENDATIONS TO THE TEAM



Team 4: PEPPS

Name of the supervisor: Ms Anne Couturier-Tarrade

THEMES OF THE TEAM

The overall objective of the PEPPS team is to study the role of the placenta in programming and its impact on the health trajectories of offspring, particularly in the context of cardiometabolic diseases. The team is divided into two main research axes. The first axis focuses on understanding placental function adaptations and deciphering molecular mechanisms in various situations (pollution, endocrine disruptors, obesity) across different animal models (rabbits, mares, sheep). The second axis investigates the significance of exposure windows on the health trajectories of offspring and identifies potential corrective measures for poor programming.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The previous committee recommended:

a) to publish at higher impact

The team obtained some publications in well-established journals, notably in collaboration.

b) the leadership role and independence of the newly appointed PI should be reinforced. The new PI signed five publications as the last author, and is involved in scientific boards (French DOHaD, European Pacental Group...), was promoted to a DR position and supervised a PhD student; all elements indicative of leadership reinforcement.

c) the team should better valorise their animal models should perform more in vitro mechanistic studies and high-throughput analyses.

The transition toward more mechanistic studies and high-throughput analysis was not fully achieved.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	2
Maîtres de conférences et assimilés	0
Directeurs de recherche et assimilés	2
Chargés de recherche et assimilés	1
Personnels d'appui à la recherche	1
Sous-total personnels permanents en activité	6
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	2
Sous-total personnels non permanents en activité	2
Total personnels	8



Overall assessment of the team

The team PEPPS displays an excellent to outstanding visibility and attractiveness through the involvement of members in many scientific societies, national authorities, invited communications, collaborations. Also, the team was attractive to PhD students (5) and obtained eighteen research contracts. With 90 publications (two third of research articles, half as lead author, half in top journals), the scientific production of the team is very good to excellent. The team non-academic activities are excellent; they notably rely on strong interactions with sheep and equine sectors as well as proportionate outreach activities.

Strengths and possibilities linked to the context

The team has an excellent to outstanding visibility and attractiveness, and has demonstrated strong research performance over the evaluation period. The team secured eighteen research contracts amounting to just over 900k€. These include fourteen projects of varying scales (ranging from ANR to ANSSD) coordinated by team members. Additionally, five projects were funded by the equine, bovine, and caprine sectors, coordinated by members of the team. The team benefits from a lipidomic's platform, which has facilitated the acquisition of four collaborative contracts totalling 51k€.

The team is involved in numerous French collaborations and engages with external infrastructure.

Team members have played a significant role in organising scientific events at Université Paris-Saclay, such as the GS Biosphera Days, with members being a member of the board and responsible for international relations for GS Biosphera. The team also organised the 5th SF-DOHaD Congress and has strong affiliations with the French Federation for the Study of Reproduction (FFER). Additionally, one researcher of the team served as president of the European Placenta Group (EPG) and led the IETS from 2019 to 2020.

The team has participated in 51 national congresses, 40 European congresses, and 30 international congresses as invited speakers. Furthermore, there have been 44 presentations at national congresses, 33 at European congresses, and 28 at international congresses, along with 26 poster presentations.

Members of the team actively participate in numerous national and international committees (ANR, Hcéres, Inserm, ANSES, European institutions) and international recruitment juries.

The team has had roles in various scientific societies (EPG, SAPS, SFN, SF-DOHaD) and contributed to the founding of SF-DOHaD. One member of the team was President of IETS from 2018 to 2020 and of IFPA in 2020, and actively participated in the management committees of two COST actions. She received the Cercle K2 Trophy and the Gold Medal from the French Academy of Agriculture in 2019.

The team maintains numerous national and European collaborations (Denmark, Netherlands, Belgium, Norway). Internationally, collaborations with NARO (Japan) were initiated but did not result in projects, whereas collaboration with the University of Florida led to a chair position and the prospect of an international laboratory. The team also maintains an active collaboration with INRS (Canada).

During the evaluation period, five PhD students were supervised, including two ongoing theses, as well as twelve Master's level (M2) students. The team hosted one postdoctoral researcher, two contractual associate professors, and six visiting doctoral candidates.

The team has a very good to excellent scientific production with a recognised expertise in the field of maternal environment and health offspring. In the evaluated period, they demonstrated several effects of preconceptional hyperlipaemia and hypercholesterolaemia, diabetes, nanoparticles, and endocrine disruptors on the health of the offspring. They also demonstrated the intergenerational impact of atmospheric pollution on various aspects of the placenta. A large part of the studied were dedicated to the impact of maternal environment on the health of the animal (various models, including sheep and horses). Collectively the work led to 90 publications for the team, with 36% of reviews and 64% of original publications. Among these publications, 52% are signed by members of the team as first or last authors. Most of the publications are published in leading journals of the speciality including equine discipline or veterinary journals, but also journals in the field of animal reproduction. Some articles have been published in generalist journals (BMC Genomics, Scientific Reports or PLoS One), and some articles have been published with international collaborators.

Non-academic activity of the team is very good to excellent. Indeed, the team has long-standing interactions with the equine and ovine sectors. These interactions have led to the publication of articles, professional notes, presentations, and technical sheets. The team is also heavily involved in the training of veterinarians at the international level. The team is positioned to enhance its interactions with livestock sectors through its participation in IC France Futur Élevage.

Finally, the team shares its knowledge with the public through participation in events, workshops, interviews, and the Fête de la Science.



Weaknesses and risks linked to the context

The team has limited international funding, with only €24,000 secured over the period, despite multiple submissions for Horizon 2020 (H2020) projects, Linkage Call projects, and RQR initiatives.

The research topics pursued are highly diverse, driven by the different models used and the varied research objectives. While this diversity is beneficial, it also presents a high risk of dispersion, making it difficult to maintain a focused approach.

Furthermore, the team is confronted with a significant threat due to the small number of permanent members, who are also responsible for managing several platforms, including lipidomic, the CIMA platform, and ISC MIMA2. This workload may limit the team's capacity to fully leverage the potential of each platform.

Most of the team's publications have appeared in specialised journals, with few in more generalist publications. However, based on the quality of the research, there is potential to reach higher-impact journals.

Apart from work with sheep and equine sectors, there have been few interactions with non-academic private partners, and collaboration with companies has been limited. This modest industry engagement presents a missed opportunity for expanding the reach and application of the team's research.

Analysis of the team's trajectory

The PEPPS team will fuse with a part of the MECP2 team to generate the new Progenie team.

RECOMMENDATIONS TO THE TEAM



Team 5: MECP2

Name of the supervisor: Ms Hélène Jammes

THEMES OF THE TEAM

The overall objective of the MECP2 team is to investigate the epigenetic mechanisms and genome adaptation to diverse environments. The team is structured into three main research areas: the first area focuses on exploring the contribution of epigenetic mechanisms in the programming of major functions across different study models either present in the unit (cattle, mice, rabbit) or in collaboration with other groups (swine, sheep). The second area examines the epigenetic mechanisms involved in intergenerational transmission. The third area seeks epigenetic biomarkers that can be used to assess the impact of an individual's life history.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The main recommendations from the previous report have been addressed as follows:

a) try to improve the team publication records by targeting higher impact journals. The team was productive but did not yet publish in top journals.

b) Attracting more M2 and PhD students should be a priority.

With three PhD and ~ten master students hosted over this period, the team appears to be below its supervision capacity.

c) to refocus its projects so as to ensure their feasibility and to maintain the team's identity The team has successfully developed a large panel of projects but would still benefit from a defining a more focused research line. The proposed reorganisation of the team for the next contract should favour this trend.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	1
Maîtres de conférences et assimilés	1
Directeurs de recherche et assimilés	3
Chargés de recherche et assimilés	4
Personnels d'appui à la recherche	9
Sous-total personnels permanents en activité	18
Enseignants-chercheurs et chercheurs non permanents et assimilés	1
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	2
Sous-total personnels non permanents en activité	3
Total personnels	21



Overall assessment of the team

The team developed cutting-edge and diverse methodological approaches of epigenetics, demonstrating its ability to adapt and innovate in response to emerging scientific challenges. Visibility and attractiveness are very good to excellent and its international recognition is evidenced by the contracts and collaborations (including the EU Rumigen project). The team's leadership in developing an epigenotype analysis tool for cattle (Epichip) is also a strong asset. The collaboration with non-academic partners is excellent as evidenced by the LPA Epsilon and a Cifre PhD grant. The scientific production is very good, with 34 research articles and most of the publications as lead authors in specialised journals.

Strengths and possibilities linked to the context

During the evaluation period, the team experienced significant growth, highlighted by the arrival of several researchers, engineers and technicians. This expansion was further strengthened by the creation of a partnered laboratory, LPA Epsilon, which enabled the recruitment of four staff members from Elliance. Toward the end of the period, two members of the EPEE team joined the MECP2 team, illustrating the team's increasing attractiveness and dynamism. Additionally, a new researcher was recruited at the CRCN level, reinforcing the team's expertise.

The team demonstrated active engagement with various health institutions, including the National Academy of Medicine, as well as participation in working groups, collaborations with healthcare professionals, and involvement in professional networks. These activities underline its contributions to public health initiatives.

Strong connections were established with the bovine farming sector, notably through collaborations within LPA Epsilon, ensuring the practical relevance of the team's research to agricultural applications. Financially, the team secured significant support, and notably two European grants (H2020 Rumigen project and MSCA project BullNet), along with numerous national research contracts, including seven ANR (4 coordinated by the team), metaprogrammes, etc. Collectively, these grants amounted to $\leq 1,255$ k over the evaluation period.

In terms of academic contributions, two doctoral theses were defended during the evaluation period, while 4 others are currently underway. The team has actively participated in several national networks, such as SF-Dohad, Adamep, GRD Reproduction, and Metaprogramme Syalsa, as well as international initiatives, including COST Action and GalactInnov.

The team took a prominent role in scientific dissemination, organising the SF-Dohad Congress in Jouy-en-Josas in 2021. Furthermore, they contributed as editors and coordinators of scientific publications and actively participated in committees such as ANSES and the Biomedical Agency.

Finally, the team has excelled in developing cutting-edge and diverse methodological approaches linked to epigenetic.

A key highlight during the evaluation period was the collaboration with Elliance, which facilitated the creation of LPA Epsilon. This structure enabled significant progress in describing epigenetic modifications, such as DNA methylation and small non-coding RNAs (sncRNAs), in bull sperm in relation to various parameters, including age, breed, and nutrition. Complementary findings on the blood methylome were also obtained and correlated with experimental data, including factors such as age, physiological stage, and nutrition. These data hold promise for tracking and evaluating the offspring of bulls. Collectively, these studies have positioned the team as a leading authority on bovine methylome research at the international level.

The team also investigated the influence of the embryonic environment on the epigenome, as well as the impact of environmental toxicants on the methylome of subsequent generations. In parallel, the team explored the effects of maternal diet and metabolism on the programming of major functions in offspring, using a mouse model. Their research generated important data on how maternal obesity influences offspring trajectories, as well as on the impact of psychosocial stress. Additionally, studies on olfactory-gustatory experiences during development demonstrated significant effects on olfactory-related behaviour and associated neurophysiological responses.

Over the evaluation period, the team produced 46 publications, including 34 original research articles and ten reviews. Nineteen articles are signed as the first or last author by team members. Most of these articles were published in specialised journals such as Epigenetics, Animal Reproduction, and Psychological and Behavioural Science.

The team has established a strong partnership with Elliance and Apis-Genes, which has led to the creation of an LPA and the acquisition of numerous research contracts. This collaboration has significantly contributed to the team's ability to secure funding and advance its research objectives.



Although team members have participated in a few public outreach events, these activities remain relatively underdeveloped, representing an area with potential for further growth and engagement with broader audiences.

Weaknesses and risks linked to the context

No postdocs were recruited during the period and the number of PhD students (3) could be increased given the number of researchers holding a "habilitation". This limitation is partly attributable to the structure of the doctoral school, which does not effectively support the recruitment of students.

Additionally, the team faces challenges due to its geographic distance from experimental facilities, which complicates the implementation of experimental studies and limits access to necessary infrastructure. Participation in scientific conferences, particularly in the form of invited talks, remains low relative to the number

of researchers in the team (15 invited conferences), highlighting an area for potential improvement in external visibility and scientific engagement.

Given the size of the team, the overall scientific output appears relatively low. This is probably due to the high investment of the team members during the evaluated period to develop new epigenetic methodologies.

Despite numerous interactions, the team has not reported any patents or invention disclosures during the evaluation period. Collaborations with industry could be further strengthened, particularly in areas related to maternal programming, including the influence of diet and olfactory environments.

The team occasionally participates in public outreach activities, but these efforts could be expanded in the future to enhance visibility and public engagement.

Analysis of the team's trajectory

The MECP2 team will focus on the involvement of epigenetic mechanisms in the development of ruminant and bovine phenotypes (future DREAM team). Part of the team will merge with the PEPPS team to create the Progenie team.

RECOMMENDATIONS TO THE TEAM



Team 6: EAFC

Name of the supervisor: Ms Katia Tarassenko

As a a support service, the EAFC was not evaluated in this report.

THEMES OF THE TEAM

N.A.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

N.A.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

Catégories de personnel	Effectifs
Professeurs et assimilés	0
Maîtres de conférences et assimilés	0
Directeurs de recherche et assimilés	0
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	10
Sous-total personnels permanents en activité	10
Enseignants-chercheurs et chercheurs non permanents et assimilés	0
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	0
Sous-total personnels non permanents en activité	0
Total personnels	10

EVALUATION

Overall assessment of the team

N.A.

Strengths and possibilities linked to the context

N.A.

Weaknesses and risks linked to the context

N.A.

Analysis of the team's trajectory



RECOMMENDATIONS TO THE TEAM



Team 7:

Embryon Gamète Gonade (EGG)

Name of the supervisor: Mss. Alice Jouneau and Amélie Bonnet-Garnier

THEMES OF THE TEAM

This is a new team resulting from a merge of existing teams. For the next mandate, the team proposes to investigate a wide period of development surrounding the formation of the zygote: from the formation of the gonads, the production of development competent gametes, to the mechanisms supporting successful embryonic development. The team will aim at evaluating the effect of the environment (temperature and pollutant) on these processes and at improving biotechnology to improve fertility. EGG staff will represent more than 50% of the unit workforce and is derived from the fusion of the former EPEE and DGP teams to which a substantial number of medical staff from UVSQ have been added.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

N.A.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

N.A

EVALUATION

Overall assessment of the team

N.A.

Strengths and possibilities linked to the context

N.A.

Weaknesses and risks linked to the context

N.A.

Analysis of the team's trajectory

For the next mandate, it is proposed to establish this new team derived of the fusion of the former EPEE and DGP teams to which a substantial number of medical staff from UVSQ has been added. The team will be directed by two PIs from the former EPEE team. EGG staff will represent more than 50% of the unit workforce.

The EGG team proposes to investigate a wide period of development surrounding the formation of the zygote: from the formation of the gonads, the production of development competent gametes, to the mechanisms supporting successful embryonic development. The team will aim at evaluating the effect of the environment (temperature and pollutant) on these processes and at improving biotechnology targeting fertility improvement.

The EGG team will provide an integrated view of the reproductive processes leveraging the use of multiple model systems at its disposal. The team will combine fundamental research to applied research through its strengthened association with a private company. These goals seem achievable given the documented expertise and history of funding of members of the team.

Additionally, nine medical staff from three AMPs centers are included in the team and will bring a biomedical side to the investigation carried out in the team. Those will be centred around evaluating sperm epigenetic features in relation to fertility outcomes as well as evaluating the role of candidate human gene in infertility.

Overall, this is a very wide program organised along three scientific directions that total twelve research projects/questions. A large part of the proposed work aims at providing a description of the developmental



phenotype induced by various exposure to environmental cues while a few projects will delve into the mechanisms underlying ZGA as well as an exit from pluripotency.

RECOMMENDATIONS TO THE TEAM

1- It is not clearly apparent which PI is responsible for which axes. In addition, the thematics covered are very large, which risk diminishing the visibility and identity of the team. We strongly recommend structuring the team with fewer themes and well-identified leaders.

2- Only two-three PhD students are expected to join the team. This seems very low for a team totalling 30 permanent staff, including sixteen researchers. To bolster the dynamic of the team it would be important for the team to recruit more students and to extend the move for recruitment to postdocs.

3- It is not entirely clear how well the medical staff (devoting 10 to 50% of the time to research) will be integrated in the team and what will be the added value. Indeed, only one project (sperm epigenome) seems to focus on human material, the other one mostly involving existing animal model to investigate candidate human gene for a role in infertility. The integration of the medical projects should be better defined.

4- Lastly, it is not too clear if this restructuration is driven by science or just by the fact that DGP was too small to be maintained as a standalone team. The proposed EGG team does not appear very different to a combination of the research activities from the two former teams. To gain visibility/attractiveness it might be sensible to reduce the breath of the scientific area covered.



Team 8:

Programmation gestationnelle par l'environnement (Progenie)

Name of the supervisor: Mss. Christine Baly and Anne Couturier-Tarrade

THEMES OF THE TEAM

For the next mandate, the merger between the PEPPS team and members of the MECP2 and Rhuma teams will give rise to the Progenie team. Its primary aim will be to investigate the effects of the maternal context, whether positive, negative, or complex, on metabolic outcomes, behaviours, and physiopathological risks, with a focus on sex differences and the contribution of the placenta. A key objective of the team will be to establish a link between exposure markers and health trajectories, while deciphering the underlying epigenetic mechanisms.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

N.A.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

N.A.

EVALUATION

Overall assessment of the team

N.A.

Strengths and possibilities linked to the context

N.A.

Weaknesses and risks linked to the context

N.A.

Analysis of the team's trajectory

This team will result from the fusion between the PEPPS team and members of the MECP2 and Rhuma teams. It will be co-directed by the head of the former PEPPS team and a former member of the MECP2 team. One research axis will focus on the placenta-brain axis in the foetal programming of behaviour, while a second

will examine the relationship between the placenta and liver in metabolic programming. This innovative positioning, placing the placenta at the centre of these programming processes, will provide a unique thematic approach for the future team.

Leadership of the future team will be shared between two researchers, one from each of the two founding teams, who are affiliated with the Phase and AlimH departments. The team possesses all the necessary expertise, competencies, and technical platforms to successfully carry out this multidisciplinary project, and will leverage the complementary skills of its new members. However, the team has identified a few areas for improvement, particularly in terms of human resources, such as the need for additional technical staff in histology, physiological phenotyping, neurobiology development, and behavioural phenotyping.

A broad range of experimental conditions are being considered (e.g., dietary contaminants, obesity, ultraprocessed foods, thermal stress, organic foods, dietary diversity, maternal odorants), which poses the risk of dispersing the focus and potentially hindering in-depth exploration of each individual theme.

Furthermore, the team plans to use a large number of animal models (mice, rabbits, pigs, sheep, horses), which could further increase the risk of dispersion, especially considering the team will consist of ten researchers, including two professors and one university-hospital researcher and four technical staff.

The team plans to capitalise on its investment in nine master's programs to facilitate the recruitment of Master's students (M2) and PhD candidates, although securing funding remains a significant challenge.

Some risks persist, including the distance from experimental centres, the relatively low attractiveness of the Paris region (due to salary issues), and the sustainability of the rodent experimental facilities.



The new team will naturally benefit from the collaborations established by the previous teams and has strong visibility in terms of potential national and international collaborations. Socio-economic partnerships will be based on existing links with IFCE and will benefit from the connection to IC France Futur Elevage. Moreover, several ongoing projects, including two ANR projects coordinated by team members, will provide a strong foundation for launching the new team's initiatives.

RECOMMENDATIONS TO THE TEAM

The committee strongly recommends that the team refocuses its projects on a smaller number of experimental conditions.

The team is also invited to reflect on the respective interests of the different animal models.

The team should also develop more in-depth and mechanistic explorations.

The tenured researchers should obtain their HDR to increase the capacity of the team to hire PhD students, in particular for medical staff.



Team 9:

Reproduction et construction des phénotypes ruminants (Dream)

Name of the supervisor: Ms Hélène Kiefer

THEMES OF THE TEAM

For the next mandate, the Dream (Développement, Reproduction des ruminants, Epigénétique, Adaptation, Modélisation), which is composed of a major part of the team MECP2, will focus its projects to the involvement of epigenetic mechanisms in the development of the phenotype of ruminants.

CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

N.A.

WORKFORCE OF THE TEAM: in physical persons at 31/12/2023

N.A.

EVALUATION

	Overall assessment of the team
N.A.	

Strengths and possibilities linked to the context

N.A.

Weaknesses and risks linked to the context

N.A.

Analysis of the team's trajectory

The DREAM team will be composed of a large part of the MECP2 team (2 DR, 1 PR, 2 CR, 1 MCF, 2 support staff) and will be associated with Eliance through the LPA Epsilon (4 persons). It will be headed by H. Kiefer (CR Inrae). The team will also host 4 PhD students hired in 2023 or 2024. The composition of the team is sound and provide a solid basis for the proposed research program.

The departure of the other members of the MECP2 team (working on mouse olfaction and behaviour) toward another team is positively viewed by the committee, as it will provide a clearer scientific identity and facilitate the refocusing of the research projects. Accordingly, the Dream team will focus its projects on the involvement of epigenetic mechanisms in the development of the phenotype of ruminants. Three lines of research will be developed dealing with (1) seed quality and construction/prediction of male fertility; (2) construction of female fertility and health; (3) early environmental programming of phenotypes and epigenetic transmission (e.g. impact of nutrition or temperature). These projects are integrated in the framework of the RUMIGEN and BULLNET European projects and the LPA Epsilon but also rely on an important network of other national and international collaborations. These themes are also particularly relevant in terms of agricultural needs and in line with the Inrae missions.

This ambitious program is well in line with the expertise of the members of the MECP2 team and their past project, as they have a strong leadership position and excellent expertise in the characterisation of ruminants' epigenome. The association with Eliance through the LPA Epsilon is also an important asset for the success of the project.

RECOMMENDATIONS TO THE TEAM

The team seems to have the capacity to further improve its scientific production. Notably, it is encouraged to be more ambitious in its publication strategy.



The team should probably invest more efforts into functional analyses, including through the proposed development of epigenome editing techniques in cell culture.

The researchers and assistant professor of the team are encouraged to obtain their "habilitation" in order to maintain the PhD supervision capacity of the team.

Interaction with the society should be consolidated.

The valorisation of the Epichip should remain a priority of the team.



CONDUCT OF THE INTERVIEWS

Date

Start: 12 December 2024 at 8:00 a.m.

End: 12 December 2024 at 6:00 p.m.

Interview conducted: online

INTERVIEW SCHEDULE

- 8:00 8:15 Testing Zoom connections
- 8:15 8:30 Closed session Expert Committee (EC) Scientific Officer (SO)

Assessment of the Unit, Scientific Plenary session

- 8:30 8:40 Presentation of the EC to the staff members by SO
- 8:40 9:15 Presentation of the unit by Pascale Chavatte and Katia Tarassenko (25 + 10 min questions) Attending: EC, SO, all the unit members

Presentation of the teams

9:15 - 9:45 Embryon et Pluripotence : Epigénétique et Environnement EPEE, Alice Jouneau et Amélie Bonnet-Garnier

(15 min presentation + 10 min questions)Attending: Team members, EC, SO, director of the Unit+5' private discussion with the PI; attending: EC+SO

9:45 - 10:15 Reproduction Humaine et Modèles Animaux RHUMA (15 min presentation + 10 min questions) Attending: Team members, EC, SO, director of Unit +5' private discussion with the PI; attending: EC+SO

10:15-10:45Différenciation gonadique et ses perturbations DGP, Béatrice Mandon-Pépin
(15 min presentation + 10 min questions)
Attending: Team members, EC, SO, director of Unit

+5' private discussion with the PI; attending: EC+SO

10:45-11:15 Break – Closed session with EC and SO

- **11:15-11:45Placenta Environnement et Programmation des Phénotypes PEPPS, Anne Couturier-Tarrade**
(15 min presentation + 10 min questions)
Attending: Team members, EC, SO, director of Unit
+5' private discussion with the PI; attending: EC+SO
- 11:45-12:15 Mécanismes Epigénétiques : Construction Prédiction des Phénotypes MECP2 ; Hélène Jammes (15 min presentation + 10 min questions) Attending: Team members, EC, SO, director of Unit +5' private discussion with the PI; attending: EC+SO

12:15-13:30 Lunch Break



13:30-13:45 Trajectory: EGG- Embryon Gamète Gonade - Alice Jouneau et Amélie Bonnet-Garnier (10'+5') 13:45-14:00 Trajectory : PROGENIE - Programmation Gestationnelle par l'environnement Christine Baly et Anne Couturier-Tarrade (10'+5')

- 14:00-14:15 Trajectory: DREAM Reproduction et Construction des phénotypes ruminants Hélène Kiefer (10'+5')
- 14:15-14:45 Closed session with thesis students and postdocs (sub-committee 1) Attending: PhD students and postdocs, EC, SO
- **14:15-14:45 Parallel meeting: Closed session with researchers and professors** (sub-committee 2) Attending: Researchers except group leaders, EC, SO
- **14:45-15:30 Closed session with technical and administrative personnel** Attending: Technicians, Engineers, Administrative staff, EC, SO
- 15:30-16:00 Break Closed session with EC and SO
- **16:00 16:30 Closed session with the representatives** of supervising bodies Attending: expert committee, representatives of Institutions, SO
- **16:30–17:00 Closed session with the head of the unit** Attending: Unit Direction, expert committee, SO
- 17:00 18:00 Meeting of the Committee Finalization of the report (closed hearing)

PARTICULAR POINT TO BE MENTIONED



GENERAL OBSERVATIONS OF THE SUPERVISORS









Jouy en Josas, le 04 mars 2025

Monsieur le président et Mesdames et Messieurs les membres du jury,

La direction de BREED et les responsables des équipes de l'unité vous remercient de votre rapport et du temps consacré à cette évaluation.

La direction de l'unité a pris note de la position de la direction de l'Université Versailles Saint Quentin. De notre côté, nous n'avons pas de remarque d'ordre général à faire remonter.

Nous avons bien pris note de vos recommandations et vous en remercions. Elles nous seront utiles pour finaliser le projet de l'unité lors des interactions prochaines avec nos tutelles.

Nous vous prions de croire, Monsieur le président et Mesdames et Messieurs les membres du jury, à l'expression de notre considération respectueuse.

Pascale CHAVATTE-PALMER Directrice UMR BREED Dr Vétérinaire N° 12 671 INRAE Ile-de-France - Jouy-en-Josas - Antony Domaine de Vilvert - Bâtiment 230 78352 Jouy-en-Josas Cedex - France 01-34-65-25-58 / pascale.chavatte-palmer@inrae.fr

la science pour la vie, l'humain, la terre



UMR 1198-BREED Biologie de la Reproduction, Environnement, Epigénétique et Développement

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Le Président de l'Université de Versailles Saint-Quentin-en-Yvelines

Α

Monsieur Stéphane Le Bouler, Président Haut Conseil de l'évaluation de la recherche et de l'enseignement supérieur 2 rue Albert Einstein - 75013 PARIS

A Versailles, Le jeudi 20/02/2025

Ref. DER-PUR260024776 - BREED - Biologie du développement et reproduction

Objet : Evaluation des unités de recherche - Volet Observation de portée générale

Monsieur le Président,

Nous avons pris connaissance avec le plus grand intérêt du rapport de l'HCERES concernant la demande de renouvellement de l'Unité de Recherche (UMR 1198), dénommée « Biologie de la reproduction, environnement, épigénétique et développement (BREED)», portée par Mme Pascale Chavatte-Palmer.

Nous remercions l'HCERES et le comité pour l'efficacité et la qualité de leur travail d'analyse et pour leurs recommandations constructives sur l'ensemble de l'unité.

Nous souhaitons mettre en avant le soutien de l'Université à l'équipe RHuMA. Les remarques formulées à l'encontre de l'équipe sont hors de propos. Nous estimons que les observations transcrites dans le rapport devraient être modérées pour le bien du futur de l'équipe et de ses membres pour qui la situation pourrait être préjudiciable.

Nous souhaitons également corriger une remarque formulée en page 10 du rapport : « La situation de certains doctorants dans cette équipe n'est pas appropriée. Le comité a estimé que la position de l'école doctorale de l'UVSQ consistant à accepter des doctorants sans contrat de travail clair n'était pas adéquate et le comité est d'accord avec le directeur de l'unité pour dire que cela ne devrait pas se produire ».

Les écoles doctorales sont des objets de l'Université Paris Saclay auxquels les laboratoires ayant pour tutelle l'UVSQ émargent. Les doctorants de ces laboratoires sont des étudiants de l'Université Paris Saclay et sont donc régis et autorisés à s'inscrire en thèse selon les règles établies par la maison du doctorat de l'Université Paris Saclay. L'UVSQ n'interfère pas dans ces règles. Par ailleurs, nous souhaiterions souligner que les inscriptions en thèse sont toutes assujetties à un financement couvrant la thèse, qui est normalement formalisé par un contrat de travail. Aucune obligation de contrat doctoral issue de l'école doctorale n'est attendue pour une inscription en thèse.

Nous vous prions de croire, Monsieur le Président, à l'expression de nos cordiales salutations.

ofesseur Loïc Joss

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