BFA - Unité de biologie fonctionnelle et adaptative

Rapport Hcéres

agence d'évaluation de la recherche
et de l'enseignement supérieur

Department for the evaluation of research units

AERES report on unit:

Biologie Fonctionnelle et Adaptative

BFA

Under the supervision of the following institutions and research bodies:

University Paris 7 - Denis Diderot

Centre National de la Recherche Scientifique

December 2012

Evaluation Agency for Research
and Higher Education

Research Units Department

President of AERES

Didier Houssin

Research Units Department

Department Head

Pierre Glaudes

Grading

Once the visits for the 2012-2013 evaluation campaign had been completed, the chairpersons of the expert committees, who met per disciplinary group, proceeded to attribute a score to the research units in their group (and, when necessary, for these units' in-house teams).

This score (A+, A, B, C) concerned each of the six criteria defined by the AERES and was given along with an overall assessment. NN (not-scored) attached to a criteria indicate that this one was not applicable to the particular case of this research unit or this team.

Criterion 1 - C1 : Scientific outputs and quality ;
Criterion 2 - C2 : Academic reputation and appeal ;
Criterion 3 - C3 : Interactions with the social, economic and cultural environment ;
Criterion 4 - C4 : Organisation and life of the institution (or of the team) ;
Criterion 5 - C5 : Involvement in training through research ;
Criterion 6 - C6 : Strategy and five-year plan.

With respect to this score, the research unit concerned by this report and its in-house teams received the overall assessment and the following grades:

- Grading table of the unit: Unité de Biologie Fonctionnelle et Adaptative

C1	C2	C3	C4	C5	C6
A	A	A	A+	A+	A

- Grading table of the team: Biology and Pathology of the Endocrine Pancreas

C1	C2	C3	C4	C5	C6
A	A	A	NN	A+	A

- Grading table of the team: Regulation of Glucose Homeostasis by Nervous System

C1	C2	C3	C4	C5	C6
A	A	A	NN	A	A

- Grading table of the team: Physiology of the Gonadotrope Axis

C1	C2	C3	C4	C5	C6
A+	A	A	A+	A+	A+

- Grading table of the team: Pathophysiology of Striated Muscle

C1	C2	C3	C4	C5	C6
B	A	A	A	A+	A

- Grading table of the team: Central Control of Feeding Behavior and Energy Expenditure

C1	C2	C3	C4	C5	C6
A	A	A	NN	A	A+

- Grading table of the team: Molecular and Cellular Responses to Xenobiotics

C1	C2	C3	C4	C5	C6
A	A+	A+	NN	A+	A+

- Grading table of the team: Degenerative processes, stress and aging

C1	C2	C3	C4	C5	C6
B	A	A	A	A	A

Evaluation report

Unit name:	Biologie Fonctionnelle et Adaptative
Unit acronym:	BFA
Label requested:	UMR
Present no.:	EAC 4413
Name of Director (2012-2013):	Mr Jean-Marie DUPRET
Name of Project Leader (2014-2018):	Mr Jean-Marie DUPRET

Expert committee members

Chair:	Mr Hubert VAUDRY, Université de Rouen
Experts:	Ms Daniela COTA, Université Bordeaux Segalen
	Mr Pascal DE SANTA BARBARA, Université de Montpellier
	Ms Nathalie GUERINEAU, Université d'Angers, representative of the CNRS
	Ms Dominique LAGADIC, Université de Rennes 1
	Ms Maria MALAGON, Université de Cordoue, Espagne
	Mr Claude REMACLE, Université Catholique de Louvain, Belgique
	Mr Olivier ROHR, Université de Strasbourg, representative of the CNU
	Mr Bernard THORENS, Université de Lausanne, Suisse
	Mr Jean-Michel VERDIER, Université de Montpellier
	Ms Claire VOURCH, Université de Grenoble

Scientific delegate representing the AERES:

Mr Jean GIRARD

Representative(s) of the unit's supervising institutions and bodies:

Mr Marc BENEDETTI, Université Paris 7 – Denis Diderot

Ms Brigitte RENÉ, CNRS

Ms Anne ROCHAT, INSERM

1 • Introduction

The visit of the unité de Biologie Fonctionnelle et Adaptative (BFA) and meetings was held on December 19-20, 2012, at the University Paris 7 – Denis Diderot. The panel included 11 experts covering all the fields of this research unit. A coordination meeting was held on December 19, 2012, from 6:30 to 8:30 pm. During this meeting, a general introduction was given by the AERES representative and the organization of the visit was discussed. The site-visit itself took place on December 20, 2012, from 8:15 am to 5:30 pm. The origin, general organization and evolution of BFA were presented by the director during 30 min in the presence of all the personnel of the unit. Then, each group leader presented the past activities and projects during 30 min including a 15-min report followed by a 15-min discussion with the committee members. These presentations were held in the presence of all team members. Two poster sessions (30 min each) complemented the scientific presentation. The committee was split into 3 sub-groups for 30-min meetings with (1) researchers with permanent position, (2) engineers, technicians and administrative staff and (3) PhD students and postdoc fellows. A 30-min meeting was then organized with a representative of the President of University Paris 7 – Denis Diderot, a representative of the Direction Scientifique du CNRS, a representative of the Department Evaluation et suivi des programmes Inserm and a representative of the CNU. Finally, a 15-min discussion with the director and deputy-director of the unit took place before the final closed-door meeting of the committee.

History and geographical location of the unit

The BFA unit was founded in 2009 as a collaborative initiative of teams originating from 3 CNRS units (UMR 7059, UMR 7079 and UMR 7592), 3 Equipes d'Accueil from Paris 7 University (EA 300, EA 3508 and EA 1553) and 1 ATIP CNRS. The creation of this new research unit took place just after the relocation of the research teams from Jussieu to Paris Rive Gauche (PRG) campus. The BFA unit contributed substantially to the organization of new core facilities on the PRG campus. However, the researchers point out that the relocation has somewhat impaired their research projects.

Brief presentation of the evolution of BFA

The scientific ambition of BFA was to create a research center dedicated to integrative biology in the University Paris Diderot and, more widely, in the PRES Sorbonne Paris Cité. During the 2009-2012 period, BFA was composed of 7 teams organized in 3 departments i.e. Plasticity of endocrine and neuroendocrine systems (3 teams); Vulnerability of the major functions to genetic disorders (2 teams); Adaptation and vulnerability to abiotic environment factors (2 teams). Besides BFA, the PRG campus encompasses 3 Inserm or CNRS units in the fields of bioinformatics and chemoinformatics (UMR-S 973), epigenetics (UMR 7216) and development and cell biology (UMR 7592). In spite of the recent settlement of BFA in this new environment, several fruitful collaborations have already been established with the other research units, notably through the development of the BFA core facilities.

A significant reorganization of BFA teams and "departments" is under way, that can be summarized as follows: (1) the 3 departments described above will be replaced by 4 "main topics" (nutrition, degenerative pathologies and aging, reproduction, toxicology); (2) as a result of a call launched in July 2011, a new group headed by a DR2 Inserm will join team 4 to generate a new team focusing on human muscle disorders; (3) following the same call, the team Physiology of the gonadotrope axis has been reinforced by several researchers and the recruitment of a CR1 Inserm; (4) teams 5 and 7 will merge and give rise to a new team Degenerative processes, stress and aging; (5) the ATIP headed by a CR1 CNRS will become independent.

Management team

The director (Jean-Marie DUPRET) and deputy-director (J. COHEN-TANNOUDJI) who are in charge of the operational management of the unit, are directly advised by a laboratory advisory council composed of all team leaders. The laboratory council, composed of the director, deputy-director, elected and nominated representatives, has an advisory role on scientific, administrative and financial management. There is no external international scientific advisory board. The management team and the advisory council are responsible for taking the main decisions regarding strategic perspectives, selection of new teams and new collaborators.

AERES nomenclature

SVE1_LS4

Unit workforce

Unit workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
N1: Permanent professors and similar positions	24	24	24
N2: Permanent researchers from Institutions and similar positions	13	15	15
N3: Other permanent staff (without research duties)	23	24	-
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)	-	3	3
N5: Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.)		1	1
N6: Other contractual staff (without research duties)	8		
TOTAL N1 to N6	68	67	43

Percentage of producers	*100 %*

Unit workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	20	
Theses defended	22	
Postdoctoral students having spent at least 12 months in the unit*	7	
Number of Research Supervisor Qualifications (HDR) taken	5	
Qualified research supervisors (with an HDR) or similar positions	26	29

2 • Assessment of the unit

BFA is a relatively new research unit (created in 2009) which has already substantially evolved since its foundation. It occupies an original niche in the field of integrative biology within the University Paris 7 – Denis Diderot campus as well as at the national level. Following a national call, BFA has been able to attract new scientists that will re-inforce its research potential and open new translational perspectives. The unit has overall a very good scientific output and has been quite successful in raising national and European fundings. BFA is strongly implicated in teaching activities and training of PhD students, thus providing opportunities to attract the best graduate students in the unit teams. The review committee was impressed by the quality of the management and the dynamics of the unit in terms of attractiveness of new researchers, fund raising capacity and development of central core facilities.

Strengths and opportunities

- The BFA unit is composed of research teams that moved in 2008 from the Jussieu campus to the PRG campus with the objective to get national (University Paris 7 – Denis Diderot /CNRS) recognition in the field of integrative biology. In spite of this relatively new foundation, the research unit has already experienced a dynamic evolution with notably (i) merge of two initial teams, (ii) emergence of a new team, and (iii) strengthening of two teams thanks to the addition of external human resources. The unit enjoys large and functional lab space in a favorable environment of other CNRS units and laboratories.

- The call for applications launched by BFA in July 2011 to host researchers with permanent positions has been successful. The arrival of new members will considerably reinforce two teams of BFA and open new opportunities for translational projects in close collaboration with University hospitals.

- The research unit is developing a cross-disciplinary approach that provides opportunities for internal collaborations, excellence of training of students and post-docs, and transversal projects.

- Several projects include translational studies with clinicians and Inserm researchers, or with industrial partners, with potential development in human health and valorization of basic research.

- The unit has set up central core facilities that include a functional and physiological exploration platform, a FlexStation and a Bioprofiler with dedicated human resources. These facilities are available to all researchers of the unit and external utilizers including private partners, thus promoting collaborations.

- Several research projects, that are quite unique in France (e.g. xenobiotic metabolism through arylamine N-acetyltransferase; the search for therapeutic compounds in ataxias by combining the use of a collection of drosophila models; pathophysiological impact of nanoparticles; lipid sensing in the brain and pituitary including the study of the role of the mesolimbic system in feeding behavior and use of optogenetics in this context; etc.), undoubtedly contribute to the recognition and attractiveness of the unit.

- The research unit is strongly involved in teaching and training activities providing influence towards undergraduate and graduate students.

- Most of the teams of the unit are quite successful in fund raising with a broad variety of national and international sources i.e. Ile-de-France region, foundations, national funding agencies (ANR, PNRA, AFSET/ANSES…), EU programs and contracts with private companies.

- The unit has made all possible efforts to satisfy the major recommendations of the previous AERES review committee in terms of attraction of new researchers, increasing valorization of research and implementation of core facilities.

- The review committee has appreciated the cohesion of the unit and the pleasant working atmosphere.

Weaknesses and threats

- Given the size of the unit, the total number of publications since 2009 (173 with a mean IF of 4.6) is good but could be improved in the future. Moreover, these global figures obscure a certain heterogeneity with 14 papers having an IF>7 while 28 papers have an IF<3. Team-by-team analysis also reveals some disparities in the scientific productivity level.

- The number of publications (13) involving at least two distinct teams of the unit is relatively low (only 7% of the whole number of publications). Initiatives should be taken to strengthen collaborations within the unit.

- While the number of non-permanent researchers has significantly increased over the past 3 years, the number of permanent staff is slightly declining causing an erosion of the ratio permanent/temporary positions. Some of the teams are spared while others are clearly affected by this tendency.

- Overheads withdrawn on research grants (3%) are very moderate. This is certainly not sufficient to give the management team the means to set up incentive actions e.g. for internal collaboration or scientific animation.

- The lack of administrative secretary has hampered the execution of the daily work of the management team, but things are bound to get better with the imminent appointment of a dedicated staff personnel.

- The unusual association of the unit to CNRS as “Equipe d’Accueil Conventionnée” (a type of contract that is hardly known by the scientific community) has hindered the national visibility of the unit and has made administrative relationships with CNRS more complex.

- The diversity of topics covered by the different teams of the unit could represent a potential threat if not under control, and necessitates a will to build a strong unit spirit. To enhance the cohesiveness of the unit, the management team should stimulate transdisciplinary projects and scientific networking (see below).

- In-house cross-disciplinary scientific animation should be boosted. This is best illustrated by comments made by PhD students who recognize a deficit of communication among the different teams and admit they often ignore what fellows in other teams are exactly doing. This is partly due to the fact that the PhD students are registered in different doctoral schools. The situation should improve when all PhD students of BFA depend on a single doctoral school.

Recommendations

- Initiatives to improve internal communication and collegiality should be taken such as journal clubs, monthly progress reports, residential seminars, workshops, creation of an association of PhD students,… to strengthen the cohesion of the unit and the mentoring of trainees. Internal meetings should be conducted in English to better integrate foreign students and postdocs.

- Overheads on research grants should be “re-negotiated” within the laboratory advisory council. These overheads should provide the management team the means to boost internal communication and between-team collaboration.

- An international advisory board should be set up to help the management team and laboratory advisory council in strategic aspects of internal decisions such as re-organization of the unit, consolidation with new teams, actions that should be taken regarding less productive teams or teams that have been less successful in obtaining external fundings.

- Efforts should be pursued to improve the impact of publications through collaboration with CNRS and Inserm units within PRG campus and beyond in order to build ambitious projects with leaders in biomedical science, chemistry, physics and mathematics.

- The team leaders are encouraged to be more selective and to limit the number of ongoing projects.

- The international visibility of the unit should be strengthened through different actions including (i) intensification of external collaboration, (ii) recruitment of foreign PhD students and researchers, and (iii) organization of international meetings.

- Negotiation with CNRS should be pursued to reach the objective of obtaining the UMR label.

- Team 3, which includes 3 full-time INSERM researchers together with 4 clinicians, postulates to an INSERM affiliation as Equipe de Recherche Labellisée (ERL).

3 • Detailed assessments

Assessment of scientific quality and outputs

BFA encompasses 7 teams structured in 4 domains of integrative biology, i.e. nutrition, reproduction, degenerative pathologies & aging, and toxicology. The originality of the research is very good in all four domains with some excellent projects that should be supported: xenobiotic metabolism through arylamine N-acetyltransferase; cellular responses towards particles and their pathological consequences; anti-Müllerian hormone and non-classical actions of estrogens in ovarian pathophysiology; lipid sensing in the brain and pituitary including the study of the role of the mesolimbic system in feeding behavior and use of optogenetics in this context; the role of DyrkaA in Down syndrome and hyperhomocysteinemia; the development of drosophila models of trinucleotide expansion diseases for dominant cerebellar ataxia (SCA3 and SCA7), and Friedriech ataxia (FA). Most of the team leaders are internationally renowned researchers in their fields

During the period 2009-2012, BFA produced a total of 173 publications with an average IF of 4.6. Most of the papers were published in the top journals of the discipline and some as principal authors in general journals such as Nat. Rev. Microbiol, Mol. Cell, Cell Host Microb., J. Clin. Invest. (2), ACS Nano (2), PNAS and EMBO J. About half of the papers are published in journals of IF<4. Of note, 13 publications involved at least 2 distinct teams of BFA. Clearly, this relatively low proportion of joint publications (7.5%) should be increased in the future. About 1/3 of the papers were co-authored with foreign researchers indicating a very good international recognition. During the same period, BFA delivered 97 invited lectures, participated to the organization of 10 local, national or international meetings and filed 2 patents, 1 of which was valorized.

22 PhD theses were defended with an average duration of 3.5 years and 21 PhD students are currently preparing their thesis. This represents a mean of 0.6 PhD students per professor/assistant professor/permanent researcher per 3 years. In addition, 8 postdoc fellows are working in BFA. These figures are reasonable but could probably be improved. As recommended in several team assessments, recruitment of top level postdocs (including foreigners) would be desirable to pursue their recruitment as full-time CNRS or Inserm researchers.

Owing to the fact that human resources of BFA comprise a majority of professors and assistant-professors with teaching and administrative duties, the overall scientific output is very good with some between-team disparities. Efforts should be made toward qualitative (rather than quantitative) improvement e.g. impact of publications, quality of postdocs and, for certain teams, implementation of more translational research.

Assessment of the unit's academic reputation and appeal

The academic reputation of some of the BFA teams is good to very good but the academic reputation of BFA as a whole unit has to be consolidated.

BFA researchers are involved in networks and projects at the national (PRES Sorbonne Paris Cité, DHU, LabEx MeDIResisTox, ANR, PNRA,…) and international level (FP7 projects, LARC-Neurosciences network,…). This has resulted in substantial fund raising capacity from public sources. However, the unit has not yet obtained institutional international agreements such as international associated laboratory or Hubert Curien bilateral partnerships.

One third of the researchers (13/37) have received an award for scientific excellence (Prime d'Excellence Scientifique) and 6 researchers have been awarded scientific or civilian distinctions. BFA members belong to the editorial board of 9 journals. These are respectable figures but BFA researchers should try to enhance the radiance and influence of their unit e.g. by acting as (senior) editors of journals in their field of expertise or by organizing international conferences taking advantage of their scientific reputation and unique localization in Paris down-town.

BFA researchers have been invited to about 100 international conferences, which is a relatively low figure considering the number of researchers (41), suggesting that all permanent investigators may not have yet reached international recognition.

Four BFA teams are involved in European research programs. The whole unit has published 60 papers co-signed with foreign researchers. Among the 20 postdoc fellows who have been recruited by BFA, 4 only were foreigners. Efforts should be made to attract a higher proportion of top-level foreign researchers.

One of the most remarkable proofs of attractiveness of BFA is the successful call for application of new researchers made in July 2011 that has resulted in the decision of 3 Inserm or CNRS researchers and 4 clinicians to join BFA. This process satisfies the recommendation made by the previous AERES evaluation committee to attract top quality researchers.

Another remarkable achievement of BFA is the set up of a unique core facility (FPE Flex Bioprofiler) open to academic researchers and private laboratories. Not only BFA teams benefit by it most, but this platform provides excellent opportunities for top level collaborations. In the future, it would be desirable to apply for an IBiSA accreditation for this platform.

Assessment of the unit's interaction with the social, economic and cultural environment

BFA teams have been quite successful in raising funds from competitive calls, both at the national and European levels, as well as from private partners (4.34 M€ since 2009). Grants have been obtained from several pharmaceutical industries and some have led to CIFRE fellowships for PhD students. Of note, these diverse funding sources do not seem to have affected the coherence of the research lines.

BFA researchers are members of various expert committees, have participated to several interviews and have written a few popularization articles for the layman. These actions significantly contribute to establish the influence and visibility of the unit.

BFA has set up an attractive website (both in French and English) that contributes to the promotion of the unit. The management team is encouraged to keep it updated.

Globally, the unit appears to interact strongly with the economic and social environment.

Assessment of the unit's organisation and life

During the two poster sessions and the 30-min meetings with the unit staff members, the review committee has appreciated the friendly working atmosphere.

The management team is composed of a director and deputy-director who belong to two distinct topics of BFA and are both recognized leaders in their respective fields. They are assisted by a laboratory advisory council (composed of all team leaders). Each of the 7 teams is headed by one group leader or two co-leaders (team 4). Functioning of the unit is based on full independency of the 7 teams with a central animal house and a shared core-facility. Globally, all staff members seem to be satisfied with the life of the unit.

Researchers and professors/assistant professors say they work in a high quality scientific environment with very good facilities stimulating technical collaborations between teams based on the complementarity of the approaches and projects. They insist on the importance to obtain UMRisation by CNRS. Regarding this label, four main points are raised: (i) easier recruitment of researchers and thus improvement of the ratio researchers/lecturers; (ii) better visibility of the unit at the national and international levels (the current EAC label is not clearly understood by the scientific community); (iii) easier access by the staff to training organized by CNRS; and (iv) easier access to CNRS delegation for professors or assistant-professors (during this contract, all delegation requests were rejected). Faculty members with high responsibilities (head of master programs and doctoral schools) receive relief teaching duties. Professors/assistant professors emphasize their role in contact with students, including the realization of training courses in the unit. Due to the large number of faculty members in the unit, they call for a strengthening of technical assistance. They indicate that the technical staff on the platforms is involved in 50% of the research activities within teams. It is also noted that the retired technical staff are not replaced and technical support usually occurs through personal CDDs. Finally, they emphasize that the unit staff moved into its new premises in 2009; the period of removal and installation, which lasted 6 months, has greatly slowed down the research activity.

Of note, the set up of the unit faced logistical problems, particularly regarding the animal house which, because of water leaks, became operational only in mid-2010. This latter point has considerably impaired some projects.

For the BIATSS interview, 28 people (statutory and CDDs) were present and the following points were discussed. (i) Technical functions. The unit encompasses teams and core facilities.

Certain BIATSS are assigned to teams while others have a 50/50 assignment to platform vs. team. Currently, the boundary between the platform and the teams is not yet fully defined and provides flexibility. However, in the future, it is possible that this becomes more formal. This 50/50 split fully satisfies the agents as it allows to maintain research activity within a team and leaves time for engineering. They also believe that the implementation of the platform favors cohesion among the teams. (ii) Administrative functions. The 3 current administrative agents each address 1 or 2 teams transversely: they take care simultaneously of missions, billing, maintenance contracts, etc. This mode of functioning suits them because it is varied and allows them to know all the files. However, the workload is very important, particularly at the beginning and end of the year. Financial management is sometimes difficult to follow. They also believe that additional recruitment would be necessary because a number of administrative tasks are performed by researchers (e.g. website, BFA flowcharts,…). (iii) Training policy of unit and mobility. There is not properly speaking a policy of continuing education within the unit but all courses are available upon agent requests, depending on the cost. However, it is difficult for not-CNRS agents to have access to CNRS training insofar as the unit is not UMR. A policy to encourage mobility should also be implemented. Progress in career can also be built with internal mobility, that has to be discussed with team leaders. Regarding external mobility, agents do not feel encouraged to apply except for CNRS agents, but no one discourages them from doing so, although agents believe that it is not necessarily desirable to apply to these competitions because they may have to move and the context is not very favorable. Nevertheless, they receive help to prepare applications, if necessary. (iv) Relations with researchers. Globally, BIATSS agents feel they enjoy a certain degree of initiative in the conduct of the team project in so far as researchers are busy with other tasks. But, this largely depends on the manager of the team. (v) Positions. BIATSS agents want to address two key messages. First, they think researchers do not put enough effort to recruit BIATSS, their first priority being to recruit other researchers/assistant professor or students rather than BIATSS. Second, they think that, given the size of the unit, a person dedicated to the care of computer equipment and licenses (informaticien réseau) is becoming indispensable, as well as a biostatistician.

PhD students and postdocs acknowledge that they are working in a privileged environment with functional lab space and high-quality facilities. At the moment, PhD students are registered in various doctoral schools and do not seem to interact with each other as they should. They recognize that they do not know much about the projects conducted by other teams. Thus, the committee recommends to take actions to stimulate interactions among students such as journal clubs, progress reports, seminars,… at the unit level in order to spread information about expertise, know how and techniques available within the unit. Such actions should contribute to trigger collaborations between the different teams of BFA. PhD students are satisfied with the continuing education provided by their doctoral schools or unit. For instance, several of them have obtained accreditation for animal research. They are also globally satisfied with the mentoring they receive from their supervisors, although they mention the existence of disparities.

Assessment of the unit's involvement in training through research

Of the 41 BFA researchers, 26 have a Professor or Assistant-Professor position at the University Paris Diderot. Most researchers, postdoc fellows and PhD students also contribute to training and teaching. BFA members are strongly implicated in the organization of various bachelor and master programs. In particular, several BFA members are coordinators of master degrees. Of note, several master programs are consonant with the research projects of BFA and the students clearly benefit of the expertise of BFA researchers. Globally, 33 master students have been trained in BFA teams. This figure is relatively modest when compared to the number of researchers (less than 1 master student per researcher per 4 year period).

Of the 41 BFA researchers, 26 are qualified research supervisors (HDR) and 29 will be in January 2014. Several BFA researchers are members of doctoral school councils and some of them are involved in the management of doctoral schools. Twenty-two PhD students have defended their thesis since 2009 and the mean duration of PhD theses was 3.5 years. All PhD students have participated to international meetings and most BFA doctors are currently pursuing postdoctoral training, reflecting excellent mentoring of PhD students.

These figures highlight the strong implication of the BFA unit in educational programs and research training. As aforementioned, attention should be paid to inter-team interactions and communication for the benefit of trainees.

Assessment of the five-year plan and strategy

BFA is a relatively new unit that has already undergone dynamic re-organization and has now reached its cruising speed. BFA scientific projects will be performed by 7 individual teams sharing mutual facilities. A few collaborative projects between teams have already been initiated. These inter-team cooperations should be encouraged and strengthened. To stimulate such internal collaborations, the management team should use incentive means, including financial support for joint projects and support to the technical platform.

Several very good to excellent projects have been identified and highlighted in the team-by-team analysis. Development of clinical translational projects already initiated during the preceding period should now go faster thanks to the recruitment of clinicians and Inserm researchers. To perform their projects, the teams have well-equipped and relatively large laboratory space and have access to excellent core facilities. One of the challenges of the BFA management team will be to build an ambitious unit project from the sum of individual team projects.

For most teams, human resources encompass a well balanced association of professors/assistant-professors, researchers and technical staff. However, teams 2 and 6 do not have any full-time researchers, which may slow down their research projects, while team 5 does not have professors/assistant-professors, which may inpair the recruitment of good master students. All teams have reasonable engineer/technician support. The way new assistant-professor and engineer/technician positions are allocated by the management team to the different research teams appears well-balanced.

All BFA teams have a remarkable capacity to raise external funding both from public agencies/foundations and from industrial partners. Together with the ability of the unit to attract new talented researchers and good students, this is a guarantee of the sustainability of the unit.

4 • Team-by-team analysis

Team 1 : Biology and Pathology of the Endocrine Pancreas

Name of team leader: Ms Jamileh MOVASSAT

Workforce

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
N1: Permanent professors and similar positions	4	2	2
N2: Permanent EPST or EPIC researchers and similar positions	1	2	2
N3: Other permanent staff (without research duties)	3	2	
N4: Other professors (PREM, ECC, etc.)		1	1
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)			
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6	8	7	5

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	3	
Theses defended	3	
Postdoctoral students having spent at least 12 months in the unit	2	
Number of Research Supervisor Qualifications (HDR) taken		
Qualified research supervisors (with an HDR) or similar positions	3	4

• Detailed assessments

Assessment of scientific quality and outputs

Facing the anticipated high increase in the occurrence of the metabolic syndrome including propensity to develop obesity and type 2 diabetes, the aim of Team 1 is clearly of high importance and impact. The endocrine pancreas, and in particular the beta cell, its development, regulation, vulnerability, regeneration are indeed central players in this problem.

Over the years, the Team acquired an undeniable and excellent international reputation in the experimental study on the origin and progression of type 2 diabetes. They use mainly rodent models of the disease : diabetes induced by neonatal treatment by streptozotocin and the spontaneously diabetic Goto-Kakisaki (GK) rat, one of (or even) the best rodent models of type 2 diabetes, not complicated by overt obesity. The team is the main one using the GK(-Paris) rat in Western research.

For the last five years, they contributed to several highlights:

1. Dissection of respective contribution of genetic factors and maternal diabetic environment in the programming of the endocrine pancreas.
2. Demonstration of the impact of inflammatory micro-environment on islet functional deficit in type 2 diabetes.
3. Demonstration of the implication of sphingolipids in beta cell apoptosis induced by glucolipotoxity.
4. Proof of concept of the efficiency of morpholino oligonucleotides for in vivo gene knock down. Implication for targeting genes involved in adaptive beta cell growth.
5. Identification of new signaling pathways and molecular targets for regenerative therapies of diabetes.
6. Investigation, in close interaction with pharmaceutical industry, of the mechanisms of action of new anti-diabetic drugs.

The first four items very efficiently participated in improving the knowledge of mechanisms implicated in the pathology of the beta cell. Obviously, the Team is not the only one working in that field, but they offered innovative approaches in topics 1-4. The last two target applications to new strategies for diabetes therapy. In recent years, the Team added new methodological tools like rat embryo transfer strategies, or using morpholino knock-down procedures, or total internal reflection fluorescence microscopy to their panel of techniques in physiology, cell biology and biochemistry.

The results are published in high-standard Journals (generally in the first third of the category ranking: either as senior authors : Amer. J. Physiol, , Diabetologia, Molecular Therapy, …, or in close association with other groups: Diabetes PNAS, …). The quantitative output (45 peer-reviewed papers in international journals since 2009) is excellent for a team comprising 4 professors/assistant professors and 1 full-time researcher.. During this period, no publication was made in top-level generalist journals. The results are also disseminated in numerous invited talks (international: 10, national: 13 since 2009), as well as oral (international: 27) and poster communications.

Assessment of the Team's academic reputation and appeal

The published articles indicate a good degree of collaborative work with other national and foreign research groups. As already stated, the senior members of the Team are often invited to give conferences and lectures in international and national conferences or Institutions. The other permanent researchers of the Team have now to take over in that matter. The Team has not been involved in the organization of international meetings in recent years, but they animate efficiently a grouping of scientists and physicians implicated in the field of diabetes in the PRES "Sorbonne Paris Cité" ("Journées" and "Réseau Diabéto-Diderot"). The team features the expertise and recognition to participate to international networks (EASD, ALFEDIAM, EGIDE, and modestly to EU funding).

They address however very substantially to private funding. Members are in the Editorial board of Experimental Diabetes Research and the Tohoku Journal of Experimental Medicine and participated to panels of international and national expert authorities.

Assessment of the Team's interaction with the social, economic and cultural environment

As just stated, the Team has strong interaction with pharmaceutical and biotech companies in terms of scientific collaboration or consultancy (NOVO NORDISK, POXEL, Metabrain Research, MSD, Materia Medica). They collected already very important funding by that way and they have the intention to still reinforce these partnerships. The comfortable funding allowed the enrolment of several (7) post-docs since 2007 as well as PhD theses (7). They have modest involvement in scientific vulgarization.

Assessment of the Team's organisation and life

One may suppose that communication within a rather small group is fluent and easy. The accession of the previous group leader to the status of Prof-emeritus will clearly influence the organization and development of the Team.

Assessment of the Team's involvement in training through research

The Team clearly features a great interest in teaching and training activities. With the exception of one member INSERM CR1, all the researchers are teachers as well. Two members actively organize and coordinate Masters ("Biologie Cellulaire, Physiologie, Pathologie" and "Nutrition, Métabolisme Energétique, Signalisation"), as well as the Doctoral School "Physiologie et Physiopathologie". During the period 2007-2010, they welcomed students to complete Master thesis (3) and PhD thesis (7).

Assessment of the five-year plan and strategy

Two prospects of research are proposed. The first extends previous observations on the influence of the diabetic environment upon the beta cell. The second will develop new strategies of beta cell replacement.

The Team was one of the first to study the fetal programming concept in France. Nowadays, several groups in Paris, Rennes, Lille, Nantes, … are involved in this type of research and one may hope that some coordination will be encouraged with the recent creation of the French section of DOHaD association. In the project, the Team shall continue to apply its sophisticated technique of embryo transfer, will start examining the programming by the father, which is rather new, and will examine the epigenetic marks on specific genes. The latter approach provided very interesting results in another model of programming (R. Simmons: uterine artery ligation).

They will precise the effect of disturbed environment on the exocytosis mechanism, in line with the previous project. An innovative theme will be the intertissue cross-talk: beta cell with adipocytes and beta cell with endothelium. There exists a vast recent literature on the relation endocrine pancreas – vascularization in normal development and function, and the application to GK rat appears of high interest. Another new way is the analysis of tryptophan metabolism in islets, in normal and pathological conditions.

All these aspects of the project are congruent with the previous expertise of the Team and open new perspectives, in a coherent program.

The team has identified the enzyme GSK3¤ as a possible target to regenerative intervention towards beta cells. They intend to pursue the fundamentals of this finding on GK rat and NOD mice, in collaboration with another group. They will namely use the technique of morpholino oligonucleotides that the team recently developed.

The last project they present concerns the potential regenerative capacity of beta cells from the pancreatic ducts, via induction of neurogenin expression. The theme is highly competitive, as numerous groups are searching on this topic, so that the positioning of the project has to be chosen with circumspection.

The association with other groups is clearly mentioned in the project : a team from Paris-Diderot for the epigenetic analysis, Physicians of Bobigny for a common Obe-Care project, a team from Paris-Descartes and a ateam from Hôpital St Louis, Paris. These collaborations will reinforce the success of the project. In the self-assessment (SWOT), the Team indicates these associations as a strength, which is clearly true. Perhaps during this period, the Team should also envision to enter into an international network, i.e. in a EU program.

A weakness is also pointed out: the drastic decrease in human resources to which the team will be exposed. Every mean to recruit new researchers, either permanent or post-docs is cited as an opportunity to be seized vigorously.

Conclusion

- Strengths and opportunities:
  - Excellent international reputation;
  - Up-to-date approach of the research theme;
  - Perspectives of collaborations with epigeneticians and clinicians;
  - Very good funding from varied sources;
  - Good possibilities of recruiting PhD students and training though research.
- Weaknesses and threats:
  - Drastic decrease in human ressources;
  - Slight dispersion of research topics.
- Recommendations:
  - To reinforce the collaborative research with other groups (national and abroad);
  - To enroll postdocs and to recruit a permanent position as soon as possible;
  - To tighten the research programme.

Team 2 : Regulation of Glucose Homeostasis by Nervous System

Name of team leader: Mr Christophe MAGNAN

Workforce

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
N1: Permanent professors and similar positions	3	4	4
N2: Permanent EPST or EPIC researchers and similar positions	1		
N3: Other permanent staff (without research duties)	4	3	
N4: Other professors (PREM, ECC, etc.)			
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)			
N6: Other contractual staff (without research duties)	5		
TOTAL N1 to N6	13	7	4

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	3	
Theses defended	2	
Postdoctoral students having spent at least 12 months in the unit	1	
Number of Research Supervisor Qualifications (HDR) taken	2	
Qualified research supervisors (with an HDR) or similar positions	3	2

• Detailed assessments

Activities over the last five years

The research activities of this team are centered on the elucidation of the mechanisms by which nutrients signals, in particular lipids, are detected centrally to control energy homeostasis, i.e., through regulation of glycemia and feeding behavior. This Team is most known for its work on lipid detection by specific neurons and how this detection is translated by a change in electrophysiological properties of the sensing neurons, how this is linked with changes in energy balance (body weight control) and insulin secretion. Newer studies also involve the deciphering of the signaling intermediate between lipid uptake and signal generation with new important information about the role of nitric oxide. An important line of investigation is the recent identification of the role of lipoprotein lipase in hippocampus. This Team showed that blocking the activity of this enzyme in this structure induced obesity, a mechanisms likely dependent on ceramide production. These are important informations as they may explain how lipids reach the brain to modulate neuronal circuits in physiological conditions. As an extension to these studies of the role of brain in homeostatic regulation of energy homeostasis, this teams is now also equipped to perform behavioral studies to investigate another aspect of the control of feeding, the interaction with hedonic control of feeding.

Beside this "brain work", this team is also involved in the study of beta-cell mass and function in different experimental conditions, in particular in response to metabolic stress induced by high fat diet feeding, through both an IMI project and a project in collaboration with industry (Servier).

Overall assessment: the research topic is of high current interest; the specific questions addressed are original; the team has established appropriate, diverse technologies to address these relevant questions in an integrated manner.

The team has established numerous collaborations with colleagues in Paris, in France, and in Europe and the USA. This network of collaborations reinforces significantly the strength of the team. This leads also to numerous grants supporting joint research programs, at the French as well as European levels. These grants contribute significantly to the financial support of the team. Collaboration with industry is an additional strength of this lab, contributing to additional scientific publications as well as financial support.

The publications record is good with 42 publications in international journals (19 as first and/or last authors) over the last 5 years. As stated by the principal investigator, publications in high impact journals (IF > 10) with team members as first and/or last authors s are lacking.

Planned research

The overall scientific objectives are to identify new mechanisms involved in regulation of glucose homeostasis by nervous system and to validate biomarkers and target identified during the previous period. Whereas the first objective is a continuation of the team's core expertise, the second objective is part of a European initiative, in which the team has played a major role to generate the fundamental, extensive, phenotyping information that form the basis for this project.

In addition, the program is well designed with leading roles for subprojects attributed to co-PIs. The first subproject is to further the study of lipoprotein lipase hydrolysis and local production of free fatty acid in the regulation of glucose homeostasis by the CNS. One particular hypothesis to be tested is the role of ceramide production in the overall phenotype observed when LPL activity is blocked in specific brain nuclei. This will make use of different nuclei/cell-specific CRE mice as well as stereotactic injections of recombinantn adeno- or adeno-associated viruses for the delivery of CRE recombinase. This will allow inhibition of LPL in hippocampus or hypothalamus. The role of ceramide in lipid signaling will be tested using mice that will allow deletions of some the ceramide synthesis genes and of sphingosine kinase.

As these experiments will be coupled to integrated physiological studies they will allow precise identification of the neurons involved in specific physiological regulations.

A new project is proposed based on the hypothesis that olfaction may be an important component of the regulation of energy homeostasis and which will investigate the role of another brain region in this regulatory function, the olfactory bulb (OB).

This project is based on preliminary data that the protein prokineticin 2, when injected in OB, induces a reduction in food intake. A complete research proposal based on these initial observations is proposed to understand the role of the OB in feeding and energy expenditure.

A third project will investigate the signals derived from the gut and which control glucose homeostasis. This will be based on two experimental paradigms, first, the effect of gastric surgery on improved glycemic control, and in particular testing different protocols for gastric surgery, and second, the effect of gut microbiota from gastric surgery mice on glycemic control when transplanted into axenic mice. These are very interesting studies, which will be performed in collaboration with other laboratories.

Finally, further investigations of potential biomarkers predicting beta-cell function or failure in response to metabolic stress and diagnostic of insulin secretion defects or insulin action will be carried out in the context of a European grant.

Overall assessment: These projects are innovative and ambitious and address important, timely questions. They are well structured to take into account the strength of the team, and the added strength conferred by the collaboration with outside laboratories. Together this makes the proposed plan realistic.

In addition, the proposal to establish a new research group under the direction of team 5 leader, who is developing distinct but complementary line of research will certainly reinforce the global structure and performance of the unit.

Again, a major request would be for the team to select and concentrate on the publication of their research work in top journals, which should be perfectly feasible based on the research topics and experimental approaches proposed. This may however require that the PI and co-PIs be allowed to dedicate more time to research.

Conclusion

- Strengths and opportunities:

The major strength of this unit is the resarch topic – the role of the CNS in the detection of nutrients, particularly lipids, in homeostatic and behavioral control of feeding and energy expenditure - which is of high current interest worldwide for both scientific and public health reasons. This unit has developed over the recent years many investigative technologies that are appropriate to study these questions in an integrated manner, using mouse genetics, integrated physiology and behavioral approaches, a collection of expertise that are present simulatenously in only a few laboratories in Europe. The proposal for future research is based on original observations and the availability of appropriate mouse models. The close collaboration with the newly established group of S. Luquet is a furher strength to combine different approaches potentially allowing synergistic approaches to questions of fundamental importance. The research projects are very competitive at an international level and combining all the expertise of this group to answer the questions asked may definitively lead to publications that can reach the quality required for publications in top tier journals.

The other strength of the unit is its capacity to raise external funds and participate in national and international research collaborations, as well as to collaborate with industry.

- Weaknesses and threats:

A major potential weakness of such a team is the very strong teaching load, which, on the one hand, further underscores the quality of the team being able to put together such strong research projects, but on the other hand, may threaten its competitive position by not being able to put sufficient manpower in the project for their fast advancement.

- Recommendations:

Additional support, in terms of research personnel, should be provided to the unit. The unit may also focus on what they consider the most promising research project to increase the chance of high impact publication.

Team 3 : Physiology of the Gonadotrope Axis

Name of team leader: Ms Joëlle COHEN-TANNOUDJI

Workforce

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
N1: Permanent professors and similar positions	4	5 + 1 (50%)	6
N2: Permanent EPST or EPIC researchers and similar positions	3	4	4
N3: Other permanent staff (without research duties)	2	5	
N4: Other professors (PREM, ECC, etc.)			
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)		1	1
N6: Other contractual staff (without research duties)	1		
TOTAL N1 to N6	10	16	11

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	2	
Theses defended	3	
Postdoctoral students having spent at least 12 months in the unit		
Number of Research Supervisor Qualifications (HDR) taken	1	
Qualified research supervisors (with an HDR) or similar positions	4	6

• Detailed assessments

Assessment of scientific quality and outputs

The team has a good number of publications in the last years, which have appeared in well-known journals, of medium/medium-high IF. Specifically, the results have been published in recognized journals of the Endocrinology field (Endocrinology, Mol Endocrinol), reproduction (Biol Reprod, Int J Androl) as well as in more general well-known journals (JBC, PLoS ONE). The quantity and quality of the scientific production generated is adequate and balanced according to the number of researchers in the group and the topics developed. It is expected that the group will improve the impact of their research in the next future, given the lines of research that are being or will be developed, and the solid background of the group on different aspects of the gonadotropic axis. Finally, some members of the team have presented invited conferences in reputed International meetings (Endocrine's Society Annual Meeting, Int Congress of Neuroendocrinology, etc).

Assessment of the Team's academic reputation and appeal

The team has had several projects in collaboration with other groups, mainly national and, particularly, with other groups from Paris7, some of which have been leaded by the PI. The topics developed are integrated in the lines of research of the lab and include from studies on the effects of endocrine disrupters on reproduction (in collaboration with a CNRS unit in Rennes 1 University), to a more recent project on the impact of nanoparticles on reproductive function (in collaboration with team 6). The team has formerly participated in an exchange program with Poland and has recently received a Marie Curie IRG. They are integrated in one European scientific network (LARC), one national network on GPCR, and two local networks. The group has also collaborated and published with foreign researchers and had one invited researcher from USA for 3 months. The PI has participated in the organizing committee of an international symposium and one one-day national meeting. Both the PI and other members of the team have participated as experts for the review of grants in international (Welcome Trust, MRC) and national (ANR) committees and collaborate as reviewers for several journals. One team member belongs to an Editorial Board (Sexual Development).

Assessment of the Team's interaction with the social, economic and cultural environment

There is a clear interest to convey the results of their research to non-academic institutions, though the activities developed by the team in this regard are still limited (professional journal articles, public conference, websites, review articles for general public and for a French scientific society), which might be nevertheless reasonable given the type of research and activities carried out by the group.

Assessment of the Team's organisation and life

In general terms, the team is balanced in its actual composition, with an appropriate number of professors and researchers, both senior and young. It is especially worthy to mention that the team has been able to attract and recruit a good number of researchers, which will undoubtedly reinforce the research potential of the team and, consequently, of the unit. This includes a CR1 INSERM who has a good record of publications on thyroid tumours in good journals (Oncogene, MBC, Carcinogenesis, Cell Cycle) as well as the members of the new group, comprising both researchers and clinicians, who have an excellent expertise in ovarian physiology and pathophysiology and publications in recognized journals in the field (JCEM, Hum Mol Genet, Hum Reprod, Fertil Steril).

Assessment of the Team's involvement in training through research

Several PhDs have been defended in the last years, with a reasonable average duration (3,8 years). A good number of these Thesis have already resulted in published articles. A HDR has been also defended. Other activities related to educational aspects include the participation of the PI as member of the executive committee of one Master and as coordinator of two Master courses.

Assessment of the five-year plan and strategy

In the next years, this team will be responsible of one of the four scientific domains included in the research project of BFA, specifically of the domain on Reproduction. This will be articulated around two main topics (differentiation and regulation of gonadotrope function and development and regulation of ovarian function), which can be considered as the natural extension of the research project developed by the group but including both novel conceptual and cutting-edge methodological approaches. In addition, they will develop new lines of research with a more translational nature, focused on the study of pathological disorders associated with the reproductive system and the effects of environmental disruptors on reproduction. The feasibility of all these projects is warranted on the basis of the background of the group (reinforced by the new incorporations). The work is also supported by previous data from this and other groups and the molecular tools, cell models, facilities and equipments required to achieve the milestones seem to be available. It is noteworthy that the team has initiated some transversal projects with other members of the BFA to develop some new lines of research that are nonetheless complementary to the studies carried out by the team. To summarize this evaluation, and according to the composition of the group and the background and facilities/tools available, the project is realistic and viable.

Conclusion

- Strengths and opportunities:

It is expected that the group improves the impact (academic and societal) of their research in the next future, given the lines of research that are being or will be developed, the recent incorporation of a good number of recognized researchers in the team, who complement and reinforce the technical and conceptual capacities of the group, and the solid background and successful trajectory of the group on the analysis of different aspects of the gonadotropic axis.

- Weaknesses and threats:

There is still few transfer of the results of research to industry/economic partners. The lines of research, though all focused on the gonadotropic axis, may suffer from some dispersion.

- Recommendations:

The strategies developed during the last years to define the master lines of research of the group taking advantange of the synergies between its components as well as to reach the actual composition of the group seem very promising and appropriate. The team is encouraged to keep on working in this line to consolidate their success in the international research community.

Team 4 : Pathophysiology of Striated Muscle

Name of team leader: Mr Patrick VICART and Ms Anna FERREIRO

Workforce

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
N1: Permanent professors and similar positions	3	3	3
N2: Permanent EPST or EPIC researchers and similar positions	4	4	4
N3: Other permanent staff (without research duties)	3	3	
N4: Other professors (PREM, ECC, etc.)			
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)			
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6	10	10	7

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	3	
Theses defended	2	
Postdoctoral students having spent at least 12 months in the unit	1	
Number of Research Supervisor Qualifications (HDR) taken		
Qualified research supervisors (with an HDR) or similar positions	5	5

• Detailed assessments

Assessment of scientific quality and outputs

The PI and co-PI who will ensure a shared co-leadership have gained a solid reputation in the field of myopathy. The co-PI is presently a group leader of an INSERM team at the "Institute of Myology" at Université Pierre et Marie Curie. The PI and the co-PI are both active members of European networks. The PI is internationally recognized for his seminal work on myopathies involving mutations of ß-cristallin and desmins.

The co-PI has created and animated a European network which provided a critical mass of patients, identified new gene mutations responsible for 8 forms of infantile myopathies, and contributed to establish a new, genetically-based nosological classification in this field.

Assessment of the Team's academic reputation and appeal

The attractiveness of the group is attested by the recent integration of two senior researchers. Both group leaders benefit from international collaborations.

Assessment of the Team's interaction with the social, economic and cultural environment

Both of them have shown a very good capacity to fund their research through private and public agencies (ANR, AFM, Stem Pole, Agence de Biomédecine). Their expertise and belonging to European networks represent important assets to obtain funding and to recruit postdocs.

The co-PI develops an interface activity as a consultant at the reference center for Neuromuscular pathologies at Pitié Salpétrière (0.5 day/week). She has developed a therapeutic protocol using N-acetyl cysteine (NAC) antioxidant as a new treatment against myopathies of the skeletal muscle associated with a mutation of the SEPN1 gene.

Assessment of the Team's organisation and life

Despite its excellent relationship with the rest of the BFA, the level of scientific interactions formalized with joined publications, with members of other groups of BFA, could certainly be reinforced in the future.

Assessment of the Team's involvement in training through research

The PI team is actively involved in the formation of students. The PI is himself a Professor and several members of his group participate to diverse formation including permanent formation. The PI was the former director of the UFR of biology.

Assessment of the five-year plan and strategy

The choice to focus on a few types of myofibrillar myopathies, early-onset myopathies and laminopathies, already genotypically characterized in the PI's and co-PI's groups is pertinent. Both groups have developed powerful models (KO mice, mutated muscle cell lines..) over recent years. The new group will benefit from its implantation at the BFA through the Functional and Physiological Exploration platform to study the consequences of mutations on metabolic and energy production. It will also benefit from interface projects with physicists to examine the effects of mechanical stress on desmin filaments and associated signaling.

Conclusion

- Strengths and opportunities:

The fusion between the groups of the PI and co-PI represents an excellent opportunity, already recommended in the preceding evaluation. The co-PI will bring a strong link with the clinics thanks to her role as a consultant at the hospital. One group will bring the critical number of permanent researchers currently missing in the other group.

The strong interaction in the past between the two group leaders represents an excellent guarantee to its future development.

The personality and dynamism of the co-PI represent a strong assest to the success of the new team.

The capacity of both PI and co-PI to fund their group represents a real strength.

- Weaknesses and threats:

Low level of collaborations of the group with other groups at BFA

Absence of publications with Impact factors >10

Care should be taken that the identification of new genes involved in myopathies will not represent a source of dispersion. The merge of both groups is to be lived as a major opportunity to strengthen the most promising axes in order to publish at the best level.

- Recommendations:

The development of research projects directly benefiting from the scientific environment and local collaboration at BFA (for example the analysis of mice KO for the selenoprotein SEPN1 encoding gene in metabolic cages) is strongly encouraged.

Team 5 : Central Control of Feeding Behavior and Energy Expenditure

Name of team leader: Mr Serge LUQUET

Workforce

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
N1: Permanent professors and similar positions			
N2: Permanent EPST or EPIC researchers and similar positions		1	1
N3: Other permanent staff (without research duties)		2	
N4: Other professors (PREM, ECC, etc.)			
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)			
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6		3	1

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students		
Theses defended		
Postdoctoral students having spent at least 12 months in the unit		
Number of Research Supervisor Qualifications (HDR) taken		
Qualified research supervisors (with an HDR) or similar positions		1

• Detailed assessments

Assessment of scientific quality and outputs

During the period 2009-2012, the team led by the PI was an ATIP team part of Team 2.

The research activity of the team 5 has been therefore carried out in close collaboration with team 2. The research activity of Team 5 aims at identifying new mechanisms involved in the neuroendocrine regulation of energy balance, with a focus on the modulation of both feeding behavior and energy expenditure. In recent years, the research activity of the team has contributed in advancing the understanding of the role of the NPY/AgRP neuronal population located in the hypothalamic arcuate nucleus in the regulation of energy balance. The most recent study carried out by the team on this topic has resulted in an extremely interesting publication (EMBO J 2012). In addition, the team has been also exploring the possible relationship between serotonin and AgRP neurons and has generated still unpublished data suggesting that AgRP neurons play a key role in the homeostatic versus the non homeostastic control of food intake. The team has also explored the impact of central lipid sensing on food intake and energy balance. The team has established a model of intra-carotid delivery of triglycerides perfusion in freely moving mice. Finally, the team is currently investigating whether brain lipid sensing per se could directly activate the brain's reward system. The team has established an international collaboration to be able to gain the conceptual and technical tools needed to investigate this original hypothesis.

Overall the team has contributed to advancing the research in the field also by generating a novel transgenic mouse model and setting up a novel technique for the intra-carotid administration of triglycerides in mice, which has led to the generation of still unpublished data and to the formulation of a novel research hypothesis.

Since 2009 the team has had 12 published articles, with the PI last author in 1 original article, an EMBO J, and co-author in a J Clin Invest in 2009. The PI has been invited speaker in 4 international conferences.

Assessment of the Team's academic reputation and appeal

The PI has obtained an ATIP grant, which has allowed him setting up his team in 2007. His team has been a partner in several national ANR-funded projects and currently holds collaborations with 5 foreign academic laboratories. The team has also received financial support and has established collaborations with private companies.

The PI has served as reviewer for National (ANR) and foreign funding bodies and serves as reviewer for grade A journals in the field of neuroendocrinology and diabetes. The team has hosted foreign researchers thanks to the exchange program of the local University. The most remarkable accomplishment of the team has been the set up of the functional and physiological platform in the unit, which has enabled several collaborations. The local University has recognized the importance of the platform for the team and the BFA unit with the creation of an engineer position.

Assessment of the Team's interaction with the social, economic and cultural environment

The team has developed research collaborations with 2 private companies (Servier, KOT-CEPRODI) and S. Luquet is part of the scientific advisory board of KOT-CEPRODI. In 2010 S. Luquet participated in the preparation of a chapter part of the OPECST report focusing on research and perspectives for the prevention and treatment of obesity in France; an initiative supported by the French Senate.

Assessment of the Team's organisation and life

The team leader is in charge of the functional and physiological (PFE) platform of the BFA unit and has been successful in obtaining funding from Regional and National bodies/associations as well as from private companies, enabling to support the research activity of his team. The research topic carried out by the team is supported by the unit and constitutes part of the Department 1 of the unit, together with 3 other teams of the unit. The team has also hosted several lectures from internationally renowned scientists within the unit.

Assessment of the Team's involvement in training through research

Since 2007, the team has trained 2 post-docs and 2 PhD students, which have both obtained post-doctoral positions elsewhere, has hosted 2 invited foreign researchers (1 post-doc and1 PhD student), 3 master students and 2 Bachelor's degree students. The PI has given lectures for Master degree courses, belonging also to European Master programs.

Assessment of the five-year plan and strategy

For the period 2014-2018, the research activity of the team will be part of the Nutrition research topic of the unit, to which the research activities of the teams 1 and 2 will also contribute. The team 5 shares complementary research approaches with the team 2 and plans to continue to closely collaborate with this team, but requests to become an independent team.

The project that the Team 5 proposes is consistent with its previous research activity. The project spans from further investigating the brain-periphery interactions using the genetic AgRP mouse model the team has available to the study of motivational aspects of food intake to central lipid sensing and its role in addictive-like behavior. The study of the role of lipid sensing in motivation and addictive-like behavior is of particular interest.

The team proposes to use a wide array of techniques, including new methodologies not yet established in the team, such as the vagotomy surgery in mice and the use of optogenetic methods in vivo. The project is very original, ambitious and risk-taking. Considering that the Team is currently constituted by 3 researchers (the team leader, 1 AI and 1 IR) and that 2 of these people are very much involved in the activity of the FPE platform, the threats are represented by the insufficient work-force belonging to the team and by a possible dispersion of energies due to the numerous collaborations handled through the FPE platform. The feasibility of this very interesting five-year research plan will therefore closely depend on the ability of the team leader to obtain funding so to recruit appropriate number of staff members (such as post-docs) to carry out the proposed studies.

In the SWOT analysis the team has appropriately discussed both the strengths and the weaknesses/threats of the team.

Conclusion

The research activity of the team has so far contributed in advancing the understanding of the role of hypothalamic mechanisms in the regulation of energy balance. The project that the team proposes for the 1024-2018 period is in line with its previous research activity and it is very original and ambitious. The team has set up several national and international collaborations also thanks to the FPE platform, which represents an important technical asset for the research activity of the team. The major weaknesses and threats are represented by the critical mass of the team, which is currently constituted by 3 researchers. The feasibility of the research plan will closely depend on the ability of the team to obtain sufficient funding so to allow the recruitment of research personnel (particularly post-docs). It is expected that the team will be able to have/recruit during the 2014-2018 period at least 1 PhD student (if not more).

●Strengths and opportunities:

It is expected that the group will further improve the academic and societal impact of its research in the next future, given the lines of research that will be developed, the technical asset represented by the FPE platform, and the already established collaborations with partners in both the academia and the industry.

● Weaknesses and threats:

The major weaknesses and threats are represented by the critical mass of the team, which is currently constituted by 3 researchers.

● Recommendations:

The team is encouraged to keep on working on its ambitious and original project. Due to the very limited work force currently available, it is recommended to reduce collaborative projects that sit clearly outside the main research line of the team, so to avoid dispersion of human resources.

Team 6 : Molecular and Cellular Responses to Xenobiotics

Name of team leader: Mr Jean-Marie DUPRET

Workforce

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
N1: Permanent professors and similar positions	7	6	6
N2: Permanent EPST or EPIC researchers and similar positions			
N3: Other permanent staff (without research duties)	3	3	
N4: Other professors (PREM, ECC, etc.)		1	1
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)			
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6	10	10	7

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	8	
Theses defended	5	
Postdoctoral students having spent at least 12 months in the unit	1	
Number of Research Supervisor Qualifications (HDR) taken	2	
Qualified research supervisors (with an HDR) or similar positions	6	6

• Detailed assessments

Assessment of scientific quality and outputs

The main activity of team 6 is to better understand the adaptation and vulnerability of the human organism to abiotic environmental factors, especially atmospheric particles, nanoparticles, aromatic compounds and heavy metals. To do so, they focus on adaptative or pathological cell responses towards these factors as well as on the impact of these factors on biotransformation processes, notably arylamine N-acetyltransferases.

Their work is original since few research teams in the world indeed study the effects of these factors on the human organism, and try to relate the biological responses observed with physico-chemical properties of the particles. Besides, arylamine N-acetyltransferases have been so far understudied compared to other enzymes.

Team 6's results are of importance in the "Environment & Health" field of research since they clearly show a strong impact of particles on pro-carcinogenic and inflammatory pathways in airway tissues as well as on detoxication pathways of aromatic amines. Furthermore, thanks to their original work on the adaptation of microorganisms towards aromatic amines, they propose microorganisms as possible new tools for the remediation of aromatic amines-contaminated soils.

One consequence of this original work is a very good production of publications: 74 articles (51 since 2009) in peer-reviewed journals (Environ Health Perspect, Part Fibre Toxicol, ACS Nano, Eur Respir J, Nat Rev Microbiol, J Biol Chem, among others), most of them with leading authorship. Of note, several of the quoted journals are in the top when considering the rank in the different categories. Also, several congress or workshop participations have led to oral communications, thus emphasizing the quality of this Team's work.

Assessment of the Team's academic reputation and appeal

Team 6 is composed of 3 professors, 4 assistant professors, 3 research engineers/technicians, 1 post-doc and 8 PhD students. The team leader, who is also the unit director, is visible scientifically and highly experienced in term of management.

Team 6 displays a high number of oral communications and invitations in national and international meetings. Team 6 has a strong track record in fund raising, both at national and international levels. Also Team 6 has been involved in the organization of several national and international congresses. One member of this Team has also edited two books including an international one, and Team 6 has participated in several scientific books. Several Team 6 members belong to the editorial boards of several international journals and are often asked for reviewing scientific papers as well as for expertises for international and national authorities.

Assessment of the Team's interaction with the social, economic and cultural environment

Due to its expertise notably on nanoparticles, Team 6 has published numerous articles of popularization and has also participated on TV programs. They also often participate in debates for social groups on the theme Nanotechnology.

Two members of Team 6 have been appointed to national expert committees dedicated to Health and Environment. This has led Team 6 to participate to the publication of diverse expert reports for private or public-decision-makers. Team 6 is also part of an international expert committee on Nanotechnologies and has realized several expertises for international expert authorities.

Regarding non-academic partnerships, Team 6 has been involved in partnerships with diverse industries and companies. They also have consulting activities for private companies, and have participated to expertise reports for such companies.

Assessment of the Team's organisation and life

The team is well organized. The proposed research program is well thought and suitable to Team 6's expertise and track record. There is also a good balance between experienced and young researchers, which favors mentorship. The team can be externally reached through a website.

Assessment of the Team's involvement in training through research

Team 6 plays an essential role in the regional structuration of higher education in integrative biology through running of diverse master and PhD programs.

Several Master and PhD students have been trained by Team 6 over the period 2007-2012, and eight theses are presently ongoing.

Assessment of the five-year plan and strategy

The team will globally carry on the same project. This project is of good quality and well thought. The necessary collaborations have been established, and sufficient funding for the next two years so far exists.

Resources are accessible through core facilities. Note that two members of Team 6 handle a technical facility included in a larger platform, which should ease the use of it.

Conclusion:

- Summary:

This is a team with solid contributions in the field of the impact of particles on human health and of xenobiotic metabolism, which are internationally recognized. Their work on particles and on XME has been and will remain their most competitive advantage.

- Strengths and opportunities:

This team possesses a well-recognized activity in cellular and molecular toxicology. The scientific expertise of the team covers the two main domains considered by the proposed project.

The research team is balanced with a number of senior members that can work independently.

The capacity of this team to raise national and international fundings is very good, with participations in several national and international networks.

Regarding the local scientific environment, the fact that Team 6 is partly in charge of a platform essential for their activities is a clear advantage.

- Weaknesses and threats:

A potential weakness of the team is the lack of full-time researchers, which must be considered in designing future studies, especially as several members of Team 6 are already very busy with training at the university. Besides, no clear collaboration with clinicians is evident whereas part of the team project deals with pathophysiology.

- Recommendations:

A clear effort in the recruitment of high level post-docs should be made in the future in order for the team to have good candidates for recruitment of full time researchers. Team 6 is therefore strongly encouraged to take advantage of its participation in several granted national or international scientific networks to attract such candidates.

Team 7 : Degenerative processes, stress and aging

Name of team leader: Mr Hervé TRICOIRE

Workforce

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
N1: Permanent professors and similar positions	1	3	3
N2: Permanent EPST or EPIC researchers and similar positions	1	3	3
N3: Other permanent staff (without research duties)	1	2	
N4: Other professors (PREM, ECC, etc.)		1	1
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)			
N6: Other contractual staff (without research duties)	1		
TOTAL N1 to N6	4	9	7

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	1	
Theses defended	1	
Postdoctoral students having spent at least 12 months in the unit	1	
Number of Research Supervisor Qualifications (HDR) taken		
Qualified research supervisors (with an HDR) or similar positions	1	5

• Detailed assessments

Assessment of scientific quality and outputs

The assessment includes first the former team , and then the former team 7.

Former Team 5 (J.M. DELABAR)

The work of the team is focused on one genetic pathology (Trisomy 21 or Down Syndrome, DS) and hyperhomocysteinemia (HHcy), which is due to an excessive homocysteine levels in blood, and constitutes a risk factor of cardiovascular diseases. Why these diseases have been chosen, and possibly the link between them is not explained.

Down syndrome

Down syndrome is supposed to be due to an alteration of gene dosage. Team 5 has therefore studied the role of 5 genes borne by chromosome 21: DYRK1A, PCP4, APP and CBS in several mice disease models. Again, why these 5 genes have been chosen is not explained:

• Dyrk1A: depending on the copy number, Dyrk1A controls brain growth, neuron density (with opposite effects depending on the regions), and alters brain development (ACL43). Using therapeutic approaches with the polyphenol EGCG (a natural inhitor of Dyrk1A) in Ts65Dn (DS) mice, they observed that the « major features of the transgenic phenotype were rescued », without more details, and LTP in mBACtgDyrk1a model (still not published). Pre-clinical studies in TgDyrk1A and TsD65n trisomic mouse models showed that decreasing the level of Dyrk1A to a normal level (with EGCG) improves cognitive performances. Based on these results, clinical trials have now started.

• PCP4: an increase of PCP4 copy number in Ts1Cje DS model resulted in premature neuronal differentiation (overmaturation of neurons, ACL36). It is supposed that this overmaturation led to functional alterations in learnings (submitted) ;

• APP: overexpression of APP in hYACtgAPP mice has protective effects in young animals but not in old ones ; the role of catecholamines and serotonine, and sleep abnormalities, in hYACtgAPP and mBACtgDyrk1A mice, seemed to be studied but no results are given ;

• SOD: overexpression of SOD has deletorious effects in mice (which model ?) but is reversed by overexpression of APP (skin, proteasome,…) (submitted and ACL37) ;

• CBS: overexpression increases LTP in hippocampus and consequently the plasticity (ACL42).

Hyperhomocysteinemia

Hyperhomocysteinemia (HHcy) is characterized by an increase in plasma concentration of homocysteine. It is an independent risk factor for cardiovascular, peripheral vascular and cerebrovascular diseases. Cystathionine beta-synthase (CBS) catalyzes the condensation of homocysteine (Hcy) and serine to cystathionine, which is then hydrolyzed to cysteine. Therefore, CBS-deficient mice constitute a model of HHcy. They found a negative correlation between the level of Hcy and the expression of Dyrk1A in this mice (ACL18). This observation is confirmed in HHcy rats where they observed a decreased level of Dyrk1A protein (ACL33). Furthermore, specific hepatocyte (not in brain, Dyrk1A being deleterious) gene transfer of Dyrk1A in HHcy mice resulted in a decrease of Hcy (submitted).

• In DS, the level of Hcy is low. Using several murine models of DS, they showed that Hcy is condensed to adenosine, decreasing Hcy, and this mechanism involves Dyrk1A.

• They also measured the level of Hcy in diabetes models (type 2 GK rat and type 1 hyperglycemic mice). They showed a strong association between Hcy metabolism and insulin (ACL38,…). Finally, using polyphenols, they showed that they were able to decrease Hcy level and prevent some (which ones ?) phenotypes in HHcy (ACL20, ACL35, ACL46).

Finally, they also look at other problems not detailed here (ACL47, ACL49).

The committee believes that the scientific activity is too much dispersed, without a clear scientific direction. Considereing the limited number of researchers or faculty members of the team, they should have instead focused their efforts on a rather small number of projects.

Scientific production:

From 2009, the total number of publications in peer-reviewed journals is 29 (including 3 reviews: ACL26, 29 and 45), and 7 papers in collaboration (ACL22, 23, 37, 44 with other labs, and 3 inter-teams: ACL24, 32, 40), that is 22 papers (with first and/or last authorship) produced by the team during the four-year contract (2009-2012). The IF of papers of team publications ranged from 2 to 7, with a mean IF around 3. Surprisingly, the paper ACL33 (Int J Cardiol, IF=7) is not quoted in the 5 major publications of the team.

In addition, there is a patent, but the year of publication (may be 2011), the coverage of the patent and the title are not indicated.

Fundings:

Numerous and regular fundings have been obtained by members of the team from associations, foundations (especially the Jérôme Lejeune Foundation on trisomy 21). One funding came from the FP6 programme (however I am a bit surprised by the dates indicated 2006-2011 since the FP6 ended up in 2006 ; this point has to be checked), and one through the ANR programme (2010-2013, DSTER).

Former Team 7 (H. TRICOIRE)

Using a model organism, Drosophila melanogaster, they developed a programme in 3 directions:

1) Identifying new pathways in longevity at the whole organism level ;

2) Focusing at the aging heart ;

3) Developing new model of neurodegenerative diseases, notably trinucleotide expansion diseases.

Part 1. It had been previously shown that heterozygotous (vs homozygotous) drosophila for mutations in the ecdysone receptor (EcR), a steroid hormone, showed increased longevity. In males, using RNAi in « mild » conditions during adulthood, they confirmed these previous results. However, high level of EcR inactivation led to reduced lifespan. Conversely, in females all conditions resulted in reduced lifespan, and was dependent on the presence of ovaries. These results showed a steroid signaling control of longevity in a sex-specific manner (ACL4).

In the frame of the « free radical theory of aging » (FTRA), a mild reduction of several mitochondrial genes during development showed no lifespan extension contrarily to worms, suggesting the existence of different mechanisms (ACL5).

Part 2. Because heart is subject to major dysfunctioning as we age, they looked at heart molecular signatures in young and old male flies. They showed that, like in mammals, oxidative stress is involved in cardiac senescence (paper in coll., in revision).

Part 3. They developed models of trinucleotide expansion diseases for dominant cerebellar ataxia (SCA3 and SCA7), and Friedriech ataxia (FA). They showed in SCA models that blocking the replication (primase inhibition) by RNAi resulted in a restoration of longevity in flies expressing the pathological forms (ATXN3-70Q or ATXN7-102Q) (patent in 2011). This result however was not confirmed in AD models. In another work, they showed that miRNA dysregulation did not play a major role in SCA3, SCA7, FTD or PD. They have also identified potential therapeutic compounds for SCA3 and HD, but no informations are given. Finally, they have developed new FA drosophila models (not described). Because of heart hypertrophy in FA, they generated a heart model of FA, and showed that several compounds improved the different phenotypes (no details given).

Scientific production:

From 2009, the total number of publications in peer-reviewed journals is 4 (ACL3-6). Among them, 2 were in collaboration with other labs (ACL3, IF=13,5 ; ACL6, IF = 4), whereas 2 are from the team (ACL4, ACL5 with a mean IF of 3,4), with first and last authorship. One additional paper (Plos Genetics, IF = 8,7) is “in press” (first autorship). Considering the very small size of the team (1 researcher and 1 faculty member), the recent paper published in Plos Genetics, and the production of an international patent (2009), the scientific production is good.

Fundings:

Several interesting and regular fundings have been obtained: national (FRM, ANR, Association, University), and european (FP7, 2011-2014), either as coordinator (ANR, Association, University) or participant (FP7).

Assessment of the Team's academic reputation and appeal

The team is dynamic in terms collaborations with other labs, scientific networks, participation in scientific committees.

Assessment of the Team's interaction with the social, economic and cultural environment

The team is involved in an european network (TREATPolyQ), and develop a regular activity of collaborations with other labs, as participant in scientific committees, editorial board,etc… Some informations provided are not from the four-year period (i.e., earlier than 2009). Ineractions with the society in general are also regular.

Assessment of the team organisation and life

As of June 30, 2012, the team 5 was made of 2 researchers (DR2 CNRS), 2 Professors (University Paris Diderot, UPD), 1 ATER (non permanent Assistant Professor), 2 technicians and several master's students. There is also former members, 1 Assistant Professor (UPD) and 1 Assistant Engineer (AI CNRS), who departed on June 2011 during the four-year contract, and 6 PhD students and 1 post-doc.

As of December 30, 2011, the team 7 was made of 1 researcher (DR2 CNRS), 1 Assistant Professor (University Paris Diderot, UPD), 1 ATER (non permanent Assistant Professor), 1 post-doc and 1 PhD student. There is 1 post-doc and may be 1 PhD student (unspecified date) as former members during the four-year contract.

Assessment of the five-year plan and strategy

The process of merging two previous teams (team 5 and team 7) will strengthen the new team by leading to more focused topics. As a consequence, the project presented is very attractive and ambitious. It covers the full spectrum from basic to applied research. However, it is also raising some concerns:

1) Although a real effort has been made in focusing topics, the number of projects still remains high (4 types of diseases, 2 animal models, several technical approaches: screening of compounds, use of lentiviruses) ;

1) The motivation and attitude of researchers of the previous team 5 to refocus on the new project ;

2) Several researchers will reach retirement age in few years, and therefore it will be necessary to recruit new researchers or assistant professors to ensure harmonious development of the projects ;

3) In this context, it is necessary to ensure a clear prioritization of projects.

5 • Conduct of the visit

Visit date:	
Start:	December 20, 2013, at 8:15
End:	December 20, 2013, at 17:30
Visit site:	Unité de Biologie Fonctionnelle et Adaptative
Institution:	University Paris 7 Denis Diderot
Address:	Bâtiment Buffon, 4 rue Marie-Andrée Lagroua Weill-Hallé, Paris
Specific premises visited:	BFA unit

6 • Statistics by field: SVE on 10/06/2013

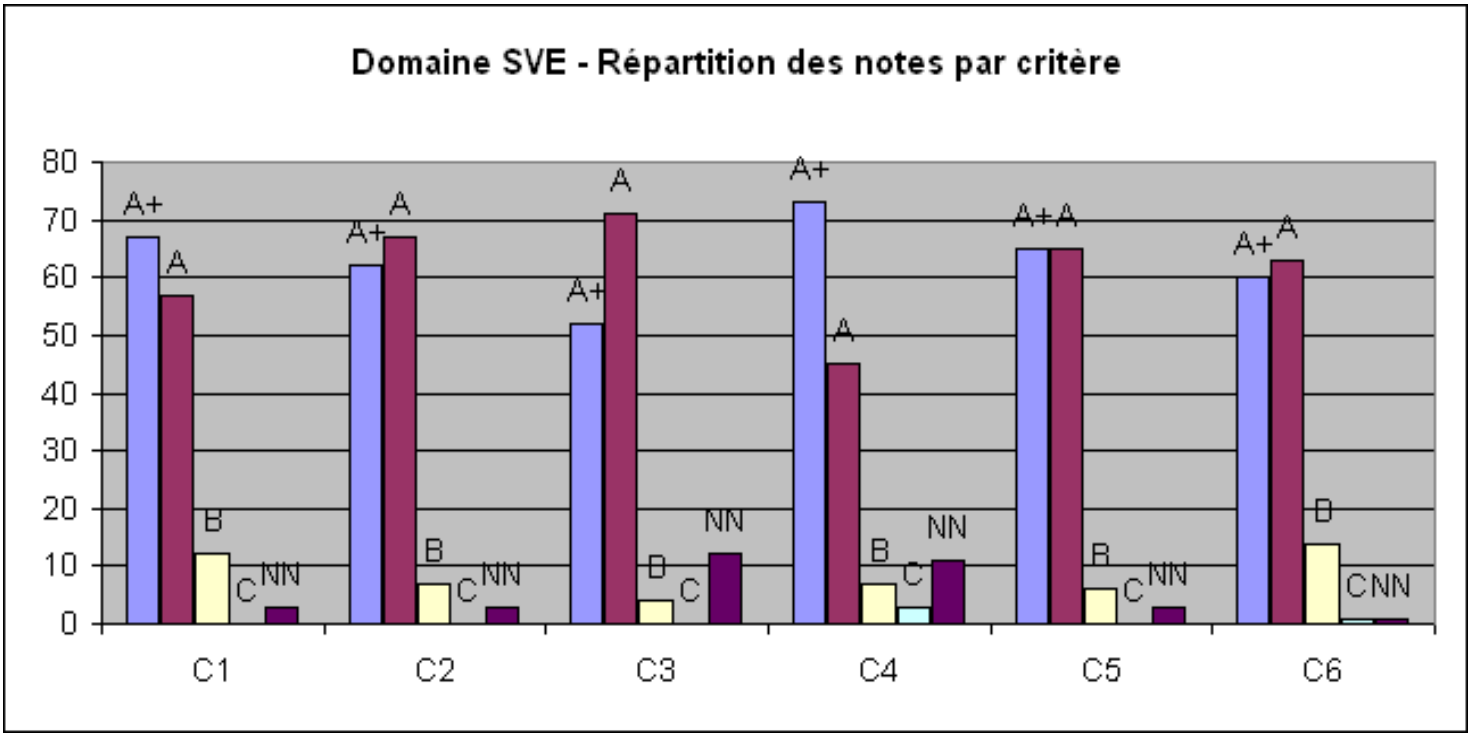
Grades

Critères	C1 Qualité scientifique et production	C2 Rayonnement et attractivité académiques	C3 Relations avec l'environnement social, économique et culturel	C4 Organisation et vie de l'entité	C5 Implication dans la formation par la recherche	C6 Stratégie et projet à cinq ans
A+	67	62	52	73	65	60
A	57	67	71	45	65	63
B	12	7	4	7	6	14
C	0	0	0	3	0	1
Non Noté	3	3	12	11	3	1

Percentages

Critères	C1 Qualité scientifique et production	C2 Rayonnement et attractivité académiques	C3 Relations avec l'environnement social, économique et culturel	C4 Organisation et vie de l'entité	C5 Implication dans la formation par la recherche	C6 Stratégie et projet à cinq ans
A+	48%	45%	37%	53%	47%	43%
A	41%	48%	51%	32%	47%	45%
B	9%	5%	3%	5%	4%	10%
C	0%	0%	0%	2%	0%	1%
Non Noté	2%	2%	9%	8%	2%	1%

Histogram



7 • Supervising bodies' general comments

Le Président

P/VB/NC/YM – 2013 - 120
Paris, le 26 avril 2013

M. Pierre Glaudes
Directeur de la section des unités de l'AERES
20 rue Vivienne
75002 PARIS

S2PUR140006441 - Unité de Biologie Fonctionnelle et Adaptative - BFA - 0751723R

Monsieur le Directeur,

Je vous remercie, ainsi que les membres du comité de visite, pour l'envoi du rapport d'évaluation concernant le « Laboratoire BFA », rapport qui souligne l'excellente production scientifique ainsi que l'excellente capacité à lever des financements nationaux et européens. Ce rapport souligne aussi la forte implication de BFA dans les activités d'enseignement et de formation des doctorants, offrant ainsi des opportunités pour attirer les meilleurs étudiants de l'université dans les équipes de l'unité.

Je me réjouis également des commentaires très élogieux qui sont portés sur la qualité de la gestion et de la dynamique de l'unité en termes d'attractivité de nouveaux chercheurs. Je me réjouis aussi de la reconnaissance par le comité de tous les efforts réalisés pour satisfaire les principales recommandations du comité d'examen AERES précédent en termes d'attraction de nouveaux chercheurs, l'augmentation de la valorisation de la recherche.

Enfin, je prends note du besoin de renforcer la visibilité internationale de l'unité, via par exemple la mise en place d'un comité consultatif international, aidant l'équipe de direction dans les aspects stratégiques de prises de décisions. Le comité souligne également la nécessité d'une négociation avec le CNRS pour l'obtention du label UMR. Sur tous ces points, l'établissement aidera l'unité à la hauteur de ses moyens.

Je vous prie d'agréer, Monsieur le Directeur, l'expression de toute ma considération.

Vincent Berger

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SORBONNE PARIS CITÉ
RECHERCHE ENSEIGNEMENT SUPÉRIEUR

Unité de Biologie Fonctionnelle & Adaptative
Université Paris Diderot-Paris 7, CNRS EAC4413

Paris, April 9, 2013

Re : comments on AERES report on BFA Unit.

To whom it may concern

We thank the AERES committee for their careful and constructive report on BFA Unit and project.

We would like to clarify one point underlined in the whole assessment of the unit namely that some of the teams may be affected by the decrease in permanent staff number. We are pleased to inform the AERES committee that two positions of assistant professor have been opened to recruitment and will reinforce the teams 1 and 7 next september 2013.

We appreciate that our efforts to satisfy the major recommendations of the previous AERES review have been recognized in the present report and will try to do so regarding the present comments.

Sincerely,

Jean-Marie Dupret, Director

Joëlle Cohen-Tannoudji, Deputy-director

Specific comments from BFA teams.

Team 1 reply
During the last recruitment campaign of Paris Diderot University in fall 2012, a permanent assistant-professor position has been attributed to our team (Team 1- B2PE). The selection among national and international candidates is taking place in May 2013 and the successful candidate will join the team on September 2013. The recruitment of the assistant professor will reinforce the research potential of our team and positively influence the new organization of the group.

Team 4 reply
We would like to precise some points, particularly in response to the points evoked as "Weaknesses and threats":
1 We totally agree with the importance of developing further collaborations with other groups of BFA, stressed both under the "Weaknesses and threats" and under "Recommendations". As we mentioned in our written document, the impact of the BFA scientific environment on several of our research projects was one of the reasons for A. Ferreiro's group move to BFA. Several axes of collaboration are already under discussion or under way: i) analysis of the metabolic and bioenergetics phenotype of the SEPN1 KO mice in metabolic cages is already in progress through a collaboration with team 5, first results are expected within the next weeks; ii) this collaboration will be pursued through the analysis of a novel mouse model (SEPN1/TRP53 KO) which we have generated recently; iii) selenoprotein N deficiency causes a myopathy which is systematically associated with oxidative stress and insulin resistance. We will try to understand further the role of oxidative stress on this metabolic phenotype through collaboration with team 1 using the cell and animal models already available in our lab.
2 "Identification of new genes involved in myopathies could represent a source of dispersion". We agree with this, and to avoid this potential threat we have the following strategy: we i) have selected a series of patients whose phenotype, identical among them and to those with SEPN1 mutations, increases the likelihood of finding genetic abnormalities involving the same/similar pathways; ii) will study directly only the new genes involved in pathways within our field of interest/expertise; other genes potentially identified in the future will not be fully characterized in our group but through collaborations with the international reference groups in the field, with most of whom we have already established solid links.

Team 7 reply
On part 1: Assessment of past work:
The following precisions can be brought on two points mentioned by the committee.
Fundings: The integrated EU program AnEUploidy was funded last year of FP6 for a duration of 4 years with a six months extension (December 2006-June 2011).
Scientific production: The patent entitled "Composés contenant un vecteur viral à spécificité hépatique et présentant une activité anti-inflammatoire » was submitted on July 2011 and published in February 2013.
On part 2: Assessment of the five-year plan and strategy
We fully agree that the projects have to be prioritized with a high implication of all the team members.
Therefore, in the first two years of the five years plan, when the current funded projects from ANR or UE will be performed, we will ensure a strong internal scientific animation to impulse priority projects conducted in the last three years. In this perspective, we believe that the strategy of synergistic work on two organisms (drosophila and mice) with same aims but complementary experimental approaches, is a real opportunity rather than a source of dispersion.
The recruitment in September 2013 of an assistant professor with strong competences in neurogenetics of vertebrates and invertebrate models will strengthen this approach and will be a first step to compensate scheduled retirements inside the team.