CNPP - Centres de neurophysique, physiologie, pathologie

Rapport Hcéres

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

Department for the evaluation of research units

AERES report on unit:

Centre de Neurophysique, Physiologie, Pathologie

Under the supervision of the following institutions and research bodies:

Centre National de la Recherche Scientifique

Université Paris Descartes

January 2013

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

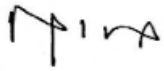
Research Units Department

President of AERES

Didier Houssin

Research Units Department

Department Head



Pierre Glaudes

The president of AERES "signs[...], the evaluation reports, [...]countersigned for each evaluation department by the relevant head of department (Article 9, paragraph 3, of french decree n°2006-1334 dated 3 november 2006, revised).

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.
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 following grades:

- Grading table of the unit: Centre de Neurophysique, Physiologie, Pathologie

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

- Grading table of the team: Spinal Physiology & Pathophysiology

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

- Grading table of the team: Cerebral Dynamics, Plasticity, Learning

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

- Grading table of the team: Sensorimotor Adaptations & vestibular pathologies

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

- Grading table of the team: Development & Pathologies of Neuromuscular Junctions

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

Evaluation report

Unit name:	Centre de Neurophysique, Physiologie, Pathologie
Unit acronym:	CNPP
Label requested:	CNRS, Universite Paris Descartes
Present no.:	UMR 8119 & 2 teams from UMR 8194
Name of Director (2012-2013):	Mr Claude MEUNIER
Name of Project Leader (2014-2018):	Mr Claude MEUNIER

Expert committee members

Chair:	Mr Jean-René CAZALETS, CNRS, Université de Bordeaux
Experts:	Mr Pascal BARONE, CNRS, Universite Toulouse Sabatier
	Mr Jean BLOUIN, CNRS, Université Aix-Marseille
	Mr Rob BROWNSTONE, Dalhousie University, Canada
	Mr Marcel DE JEU, Erasmus University, Holland
	Mr Viktor JIRSA, CNRS, Université Aix-Marseille
	Mr Caroline STRUBE, CNRS, Université Aix-Marseille, (CoNRS representative)
	Mr Franck VIDAL, CNRS, Université Aix-Marseille, (CNU representative)

Scientific delegate representing the AERES:

Mr Laurent GROC

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

Mr Stefano MARULLO (Universite Paris Descartes)

Mr Bernard POULAIN (CNRS)

1 • Introduction

History and geographical location of the unit

The laboratory entitled Center for Neurophysics, Physiology, Pathology emerges from the fusion of four teams previously hosted by two different laboratories i.e. the "Laboratoire de Neurophysique et Physiologie" and the "Centre d'études sensorimotricité". It is located in the Saint-Pères research and teaching building. Altogether, the four teams gather 21 researchers (13 full-time and 6 with teaching duty) and 4 ITA/IATOS. As such, the laboratory is one, even if not the only one, example of a genuine center of interdisciplinary research, since it gathers in equal number theoreticians and experimentalists from both the Institut des Sciences Biologiques (INSB) and the Institut de Physique (INP) of the Centre National de la Recherche Scientifique (CNRS), but there will be a majority of experimentalists in the new laboratory. Another feature of the Center for Neurophysics, Physiology, Pathology is the wide palette of experimental techniques since true technical and experimental expertise ranges from molecular analysis on animal models to human behavioural analysis going through in vivo and in vitro electrophysiology, and indeed theoretical approaches.

The laboratory is part of the Institute of Neurosciences and Cognition that gathers various laboratories from the University Paris Descartes, encompassing a large community of researchers in the various domains of Brain Sciences.

Management team:

Mr Claude MEUNIER, DR at CNRS, will head the new research unit.

AERES nomenclature:

SVE1_LS5 Neurobiology

Unit 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	2	5	5
N2: Permanent EPST or EPIC researchers and similar positions	12	13	13
N3: Other permanent staff (without research duties)	3,2	5	
N4: Other professors (PREM, ECC, etc.)	2	2	2
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)	3	3	3
N6: Other contractual staff (without research duties)	2		
TOTAL N1 to N6	24,2	28	23

Taux de produisants	***100,00 %***

Unit workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	10	10
Theses defended	2	5
Postdoctoral students having spent at least 12 months in the unit*	4	3
Number of Research Supervisor Qualifications (HDR) taken	1	8
Qualified research supervisors (with an HDR) or similar positions	8	16

2 • Assessment of the unit

Strengths and opportunities:

The most important strength of the laboratory is the overall high level of publications across the teams together with very good international visibility. There is no significant weaknesses in any team. Real translational approaches have been developed in the lab.

One peculiarity and strength is the complete integration of theoreticians and experimentalists that conceive and conduct research at the same place. As a rare example, the spectrum from molecular biology to the most integrated and theoretical aspects are covered within the laboratory.

This is a key reason for the attractiveness of the laboratory.

Weaknesses and threats:

Two weaknesses have been raised. First of all, the very low institutional technical support. Due to the very wide span of technical expertise, development of the laboratory will be impeded by the lack of adequate support. Secondly, the present lack of clarity about the governance of the new unit should be also addressed as a priority

Recommendations:

Improving the ratio of technical support should be a priority.

In light of the restructuring and growth of the unit, the new challenge will be to set a well defined governance structure that will gather a general consensus.

3 • Detailed assessments

Assessment of scientific quality and outputs

A detailed analysis of scientific quality and output is analytically performed in each team report. Overall, the scientific quality in terms of academic publications is excellent since, among much more, they published 23 papers in the leading Journal of Neuroscience, 1 Science, 2 Physical Letters. The total number of international peer-review publications is > 130. Laboratory members organized several international meetings and schools or workshops.

Assessment of the unit's academic reputation and appeal

The laboratory is very attractive since 6 young researchers have been recruited in the last years on permanent positions. Post-docs, and more surprisingly students, are joining the laboratory from various countries (Argentina, Japan, USA, Europe…). Although challenging, significant funds have been successfully obtained and several international conferences/ workshops and international meeting have been organized by laboratory members.

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

One member of the laboratory has clinical responsibilities (in team 3) and the laboratory configuration will promote other teams to be involved in translational projects. Members are also involved in general public dissemination.

Assessment of the unit's organisation and life

Several aspects of the organization still need to be set up. The committee clearly understood that priority had been given to scientific organization since the centre is a new amalgamation that brings together investigators with different scientific and laboratory cultures. While the committee has been impressed by the high level of scientific quality, it had very little, if any, information on the future laboratory governance as well as on various issues such as hygiene and security. The committee strongly encourages the director to organize, following the evaluation, general meetings in which every one can participate in defining new rules.

Assessment of the unit's involvement in training through research

Overall, training is very good to excellent, specifically attributable to the investment of one PI. The graduate students and postdoctoral fellows claim that they have a supportive and collegial environment and are fully integrated to the neuroscience community at the University Paris Descartes.

Assessment of the five-year plan and strategy

The committee has been highly convinced by the two-axes strategy that allows for a real merger between the two founder laboratories. Furthermore, it is planned to have a general scientific policy that would grant the teams through these axes.

4 • Team-by-team analysis

Team 1: Spinal Physiology & Pathophysiology

Name of team leader: Mr Daniel ZYTNICKI

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	2.5	3	3
N3: Other permanent staff (without research duties)			
N4: Other professors (PREM, ECC, etc.)			
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)	1	1	1
N6: Other contractual staff (without research duties)	1	1	
TOTAL N1 to N6	4.5	5	4

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	2	2
Theses defended	0	1
Postdoctoral students having spent at least 12 months in the unit	1	1
Number of Research Supervisor Qualifications (HDR) taken	0	1
Qualified research supervisors (with an HDR) or similar positions	2	2

• Detailed assessments

Assessment of scientific quality and outputs

Over the past several years, this lab has engaged in high risk activities which have paid off. First, they developed the technique of in vivo dynamic clamp of spinal motoneurons in the cat, then adapted their in vivo techniques to develop an in vivo mouse preparation for recording spinal neurons, and thirdly successfully developed the mouse preparation for in vivo motor unit typing. They are the only lab in the world that is able to do this, which has provided them the opportunity to study the physiological and pathophysiological properties of type-identified motoneurons. These preparations have set the stage for future work, and will facilitate the exploration of important questions in the coming years (see below).

A young new researcher has introduced these techniques to the laboratory in the deparment of Physiology at Northwestern University in Chicago, where he did his post-doctoral fellowship. The team is strengthened by his recent recruitment back to their centre, where he will complement the other team members.

The team has published 16 papers in the last 5 years (including those by the junior investigator when at Northwestern), 8 of which are in the high-ranking Journal of Neuroscience. Three of their papers have already been cited more than 20 times each, and total citations are 102 (data from Web of Science), which considering that 10 of the publications were in 2011 or 2012 is impressive. Their conference presentations are international. One to two of these are review papers. This productivity amounts to about 1 research paper per person per year.

Assessment of the unit's academic reputation and appeal

The work done by this team has influenced the work in many labs around the world. It has also led to success in obtaining grants. Importantly, the team holds an NIH R01 award together with a laboratory at Northwestern. This would be an excellent accomplishment at any time; in the current fiscal situation in the USA with funding rates very low, this is truly outstanding. They have collaborations with Northwestern as well as with others in Rome, Paris, and Marseille. They have organized an international meeting in Paris (2010) that was very well attended.

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

After taking risks to develop these preparations (see above), these successful preparations will allow them to explore the pathophysiology of a devastating disease, ALS. So although they have not yet collaborated with clinicians, their grouping with the expertise of the development and pathologies of neuromuscular junctions team – which has clinical collaborators – is promising.

Assessment of the unit's organisation and life

Nothing specific to mention for this criteria

Assessment of the unit's involvement in training through research

There are a number of undergraduate and graduate students that have been trained by this team. Evidence of their integration includes their involvement as authors on publications. In addition, some trainees have gone on to have successful academic careers.

The group leader and colleagues are involved in formal teaching. The group leader teaches at the Masters level (at Descartes and UPMC), and represents Descartes on the board of the ED3C PhD program. He is also involved in PhD and masters candidate juries. A member of team teaches at the Spring School of the ENP, and another one, although newly appointed, has also begun to teach BIP Masters.

Assessment of the five-year plan and strategy

The strategy of the team is based on the novel preparations that they have developed and the findings they have obtained from the use of these preparations. The strategy represents a logical extension from this work. They have divided the research into 3 projects: 1) to profile sub-types of motoneurons; 2) to characterize a central synapse (motoneuron to Renshaw cell), and to study motoneuron degeneration in ALS. They have the tools and expertise to carry out these experiments. That is, their investment in high risk activity in the past is now paying off and they are assured of obtaining high quality and meaningful data.

This is an excellent project that will certainly impact the field of spinal physiology as well as the pathophysiology of ALS. The preparations are difficult and unique, making the program ambitious and innovative. The strategy is clearly delineated. The team will maintain its international standing through this high quality research.

The strategy of alignment with team 4 is very powerful. Specifically, as ALS affects (and may start at) the neuromuscular junction, their combined expertise could lead to further understanding of this disease. In addition, there is potential for translation with the links that team 4 has established with clinicians.

Conclusion

- Strengths and opportunities:

This is a very strong group of researchers who have a track record of producing high quality results. The opportunity for collaboration with the the development and pathologies of neuromuscular junctions team and possibly in the future with clinicians is a tremendous opportunity.

- Weaknesses and threats:

Despite their success at obtaining external peer-reviewed grant funding, the team is lacking in stable technical support. Given the difficulty of their experiments, improvement in this situation would significantly benefit the team and hence the field.

The lack of space in the current animal house is preventing some series of experiments. The team has a limited number of cages that they are managing well, but the acquisition of new transgenic strains is difficult to impossible. Hopefully, the new animal facility will be ready in the not too distant future.

- Recommendations:

The team should continue their strong work, and build supports with the other teams in the lab through journal clubs and group/lab meetings. This may lead to new and interesting collaborations.

4 • Team-by-team analysis

Team 2: Cerebral Dynamics, Plasticity, Learning

Name of team leader: Mr David HANSEL & Ms Carole LEVENES

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	1	1
N2: Permanent EPST or EPIC researchers and similar positions	4	5.5	5.5
N3: Other permanent staff (without research duties)			
N4: Other professors (PREM, ECC, etc.)			
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)	1		
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6	6	6.5	6.5

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

• Detailed assessments

Assessment of scientific quality and outputs

The publication activity is excellent as quantified by 32 publications published during 2007-2012, of which 24 publications appeared when the members were actually working in the unit. The remaining publications appeared prior to the members' arrival in the unit. It is notable that a large percentage of the publications appeared in high-ranking journals such as Journal of Neuroscience (7), Physical Review Letters (2) and Science (1). Especially theoretical papers are notoriously difficult to publish in high-ranking general neuroscience journals; hence the accomplishments of the team are laudable. Statistically the scientific output quantifies to 0.98 articles per year per researcher (counting 6.5 full-time researchers), which in itself is not necessarily high. However, the committee of experts appreciated the scientific strategy of the team to strive for quality rather than quantity.

Assessment of the unit's academic reputation and appeal

The team is internationally well recognized as one of the leading groups in theoretical neuroscience in Europe. Various indicators support the superb academic reputation of the team and are discussed in the following.

Team members are regularly invited to national and international conferences, as well as workshops and graduate schools, and assistance in international peer evaluation committees. They have organized various international conferences and workshops. The team takes a leadership role in the France-Israel LEA for Neuroscience, which further enhances the international attractiveness of the team due to frequent academic exchanges outside the laboratory. Quite a substantial number of national and international collaborations is in place and has proven functional documented by mutual publications. The team has clearly demonstrated to be able to attract funding from national and international sources, which helps them to finance their research and international activities. Further, a significant percentage of students and postdocs is international, further underwriting the team's international reputation.

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

Outside of the academic context, no main interactions have been noted except of the affiliation of a member as vice president of CAPET Biotechnologies.

Assessment of the unit's organisation and life

Nothing specific to mention for this criteria

Assessment of the unit's involvement in training through research

Several of the team members are regularly invited to teach at pedagogical sessions of international workshops and graduate schools.

Assessment of the five-year plan and strategy

The novel composition of the team of theoreticians and experimentalists promises to provide an exciting and fruitful environment. So far only little interactions of two subgroups are evidenced through mutual publications, but clear plans in terms of regular and frequent seminars and common subprojects have been put in place to nurture these interactions. Each subgroup has interesting projects that are doable given the resources. The evaluation committee appreciates the multi-tiered approach in continuing existing research lines that promise to be successful since they are based on prior results; as well as addressing novel scientific problems arising from the novel team composition. Notably, a member of the team brings a new exciting scientific field to the team and has built a new experimental set-up to perform studies on behavior and electrophysiology with birds (including brain lesions) in parallel to computational neuroscience.

Conclusion

- Strengths and opportunities:

The novel team has well-developed projects that promise interesting results within a four year framework. Notable is the well-formulated scientific vision of the theoretical component. The interdisicplinary composition is a wonderful opportunity to physiologically ground the theoretical work. A potential enhanced computational support by the institution, preferably by the acquisition of a High Performance Computer (HPC) cluster and its technical support, provides an excellent opportunity to improve the already superb performance of this team.

- Weaknesses and threats:

No weakness or threat was clearly identified.

- Recommendations:

The novel configuration of the team is very exciting. The committee encourages the team to pursue its well-proven and established scientific strategy, however, prioritize the interactions between theoreticians and experimentalists within the new team whenever possible.

4 • Team-by-team analysis

Team 3: Sensorimotor Adaptations & vestibular pathologies

Name of team leader: Mr Joe MCINTYRE & Mr Mathieu BERANECK

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	3	3	3
N3: Other permanent staff (without research duties)			
N4: Other professors (PREM, ECC, etc.)			
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)	2	2	2
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6	8	8	8

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	0	
Theses defended	0	
Postdoctoral students having spent at least 12 months in the unit	2	
Number of Research Supervisor Qualifications (HDR) taken	0	2
Qualified research supervisors (with an HDR) or similar positions	4	6

• Detailed assessments

Assessment of scientific quality and outputs

The research developed by this new team essentially concerns the integration of multisensory cues in the control of movement and perception. The team members are experts in a wide range of vestibular system's functions, and a special interest is therefore devoted to the vestibular inputs. Another important aim consists in determining how sensorimotor processes adapt to perturbations such as change in the gravito-inertial force field, pathologies and sensory conflicts. The use of both human (healthy, idiopathic scoliosis) and animal (rodent, frog, pigeon) studies and the use of numerous different innovative and complementary approaches (e.g. body and eye movement recordings, virtual reality, tracking of intracellular calcium ions concentration, modelling, labyrinth ablation of frog Xenopus at larval stage, …) allow them to undertake a focused attack on these issues.

A strength of the members of this team concerns technical developments. They have been involved in numerous technical research innovations (e.g., system for recording movements of rodents with respect to their underlying skeletons, electro-optical technique for controlling calcium concentration in real time at submicron resolution…) and are currently working on robots movement control.

The team is very productive. Since 2007, 66 original papers have been published in peer-reviewed journals. Many of them were published in very competitive international journals (e.g., Journal of Neuroscience (N=8), Journal of Neurophysiology (N=8), Journal of Physiology Lond). The fact that the team is similarly successful to publish animal and human studies in such journals is remarkable. Several papers were also published in important clinical journals (e.g., Annals of Thoracic Surgery, Archives of Otolaryngology -- Head and Neck Surgery, Clinical and Experimental Allergy). The originality and importance of the work developed by his team are attested by the high number of citations of several papers (e.g., at least 7 papers have an average citation per year greater than 4.45).

Assessment of the unit's academic reputation and appeal

The team has established a large and stable network of local, national (Lyon, Marseille, Strasbourg) and international (Germany, Italy, US, Belgium) partners. They lead collaborations financed by grants (e.g., CNRS (PEPS and Neuro IC programs), CNES, ESA and ANR that involve national and international contributors. They are referees for many of these funding agencies.

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

This is another strength of the members of the team. Indeed, several researchers conducted by the team may have important impacts in clinics, space navigation, robotics, virtual reality. Numerous non-academic partners use their expertise and this takes the form of contracts between the team and these external partners (Fondation Cotrel, Pierre Fabre Médicaments, CNES, ESA). The members have a strong a sustained interest in dissemination, and have contributed to the TV program “Une Nuit dans l’Espace” (France 2, French TV).

Assessment of the unit's organisation and life

Nothing specific to mention for this criteria

Assessment of the unit's involvement in training through research

Team members have supervised the research internships of several Masters (1 and 2) students. 2008 was the last year that a student has obtained a PhD degree under the direction of a team member. Currently, the team does not have any enrolled PhD student. The HDR recently obtained by a team member will probably help to increase the involvement of the team in research training.

Fulltime researchers have contributed to teaching in local Masters programs and as lecturers in international summer schools (e.g. Champalimaud Neuroscience Program, Portugal).

Assessment of the five-year plan and strategy

The proposed project is original and important for the advance of knowledge in the field of sensorimotor integration. It is in direct continuity with the work developed in recent years by the members in their originating teams. Thanks to the integration within a single team of researchers having different strengths (electrophysiology, clinics, computation, behavior, etc.), multi-disciplinarity will be pushed further in the project of this new research coalition.

The proposed project is ambitious but it appears feasible due to the excellence of the team and its members. Most of the techniques that will be employed are mastered by them. External researchers to the team will provide additional assistance when required (e.g. fMRI). Globally, this research strategy holds great promise and its feasibility appears also assured by the funding that is already available.

Conclusion

- Strengths and opportunities:

The strength of the team clearly lies in the unique combination of competences, combining methodological and content-related expertise. The integration of this team within the same research axis of the team "Cerebral, Dynamics, Plasticity, Learning" who has great expertise in computational neuroscience is promising.

- Weaknesses and threats:

Although the project will still be feasible without them, it will certainly take a longer time to be accomplished without the recruitment of the two multi-talented postdocs who are currently in the team but who are at a pivotal time in their careers.

- Recommendations:

The members of this team are encouraged to maintain the high quality of their scientific productions. They are highly encouraged to create, as they planned to do, the new and promising collaborations between members of the team who have never worked together before.

4 • Team-by-team analysis

Team 4: Development & Pathologies of Neuromuscular Junctions

Name of team leader: Ms Claire LEGAY

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	2	2	2
N2: Permanent EPST or EPIC researchers and similar positions	1	2	2
N3: Other permanent staff (without research duties)	2	2	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	5	6	6

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	2	2
Theses defended	0	0
Postdoctoral students having spent at least 12 months in the unit	0	0
Number of Research Supervisor Qualifications (HDR) taken	0	3
Qualified research supervisors (with an HDR) or similar positions	1	4

• Detailed assessments

Assessment of scientific quality and outputs

The team generated 16 publications in 5 years (i.e. 1.07 publications per year per ETP), which is considered a good output in this scientific field. Several of these publications were published in high impact factor journals: like J. of Neuroscience and Development indicating the level of scientific quality as well as the level of attractiveness of their research. The team has in particular identified two new ligands of the MuSK/LRP4 complexe and their sequential role in the neuromuscular junction synaptogenetic process. Their recent discovery of the role of the doublecortin in such process is also of great importance for the field.

Assessment of the unit's academic reputation and appeal

There are several indicators that support the good academic reputation and appeal of this team. First of all, the group leader has been invited for several international seminars and her expertise has been requested by several international research councils. Second, the team recruited one CR2 INSERM researcher and one CR1 CNRS researcher joined the team in the last 3 years. And finally, the amount of financial support over the last years also indicates that this team has an excellent reputation.

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

This interaction is clearly expressed by the clinical relevance of this unit's research. The team received several AFM grants and AFM fellowships. Furthermore, the group leader expertise was also used by the AFM council, showing a bidirectional involvement.

Assessment of the unit's organisation and life

Nothing specific to mention for this criteria

Assessment of the unit's involvement in training through research

The involvement of this team in teaching research to students is very big. In short: lecturing student's for 128 hours per year, management of the Master programme (Co-Head) and within this programme managing the Neurobiology programme (Head), management of the PhD programme (Head), training international students at the level of master or PhD and participating in many PhD committees.

Assessment of the five-year plan and strategy

The current five-year plan is a logical continuation of this team's research of the last years. The solid foundation that they created with their research together with the current plan will undoubtedly results in more insight in the factors that are involved in the development of the NMJ. Additionally, the extension of their future research on NMJ pathologies and their collaboration with clinicians will be important for the translation of fundamental NMJ research to clinical applications and will (ultimately) be beneficial for society.

This team recruited 2 new researchers and the team grew from 4 to 6 members. Therefore this team can cover a larger research area and can generate a larger scientific output in the coming 5 years.

Conclusion

- Strengths and opportunities:

This team is deeply involved in the education and training of master and PhD students on many levels. Due to this involvement, this team has insight in the quality of Paris Descartes students which is important for the selection and recruitment of new excellent young scientists. This is not only important for this team themselves, but also for the entire unit.

Their collaboration with spinal physiology team is an interesting and logical choice, because together their research will cover the entire lifecycle of motor neurons in sickness and health. The committee believes that this collaboration can be very fruitful.

With the enhanced clinical relevance in the new 5 year research plan, the team steps into the 'well-appreciated' field of translation research.

- Weaknesses and threats:

The vitality and commitment of this team to science, education, and health-care is to be commended. The team has a high teaching load and teaching responsibilities (without secretarial support). Therefore, it is important to recognize that the impact of some of these projects may be limited by the inability of these researchers to spend as much time doing research as other scientists without significant teaching. Despite their high teaching load and teaching responsibilities, they maintain a very good standard of publication.

- Recommendations:

The committee encourages the team to continue their translational research and prioritize whenever possible the collaboration with a team having expertise in spinal physiology. In fact the current team can strongly benefit from the electrophysiological know-how of spinal physiology team, whereas such team can strongly benefit from the molecular expertise of the current team.

5 • Conduct of the visit

Visit dates:

Start: 07-01-2013, at 8.30 am

End: 08-01-2013, at 2.00 pm

Visit site(s): Université Paris descartes, St Pères

Address: rue des St Pères

Conduct or programme of visit:

January 8 (Tuesday)

8h30-8h50	Welcome and breakfast
8h50-9h20	Committee discussion (closed door)
9h20-9h30	Welcome presentation AERES (Mr Laurent GROC)/Committee (Mr Jean-René CAZALETS)
9h30-11h30	Meeting with students/postdocs
	Meeting with ITAs
	Meeting with researchers (without team leader and director)
12h40-14h00	Lunch (on site)
13h30- 14h	Unit presentation by Mr Claude MEUNIER (20 min + 10 min question)
14h- 14h30	Team Mr Daniel ZYTNICKI (20 min + 10 min question)
14h30-15h00	Team Ms Claire LEGAY (20 min + 10 min question)
15h00- 15h40	Team Mr David HANSEL & Ms Carole LEVENES (30 min + 10 min question)
16h00-16h30	Team Mr Mathieu BERANECK & Mr Joe MCINTYRE (30 min + 10 min question)
16h30-17h30	Discussions with teams
18h15-18h30	Debriefing committee
18h30	End of the day

January 9 (Wednesday)

8h30-9h	Interview with director
9h-10h	Meeting with institutions (tutelles)
10h-12h45	Closed door final meeting (committee only)
12h45	Lunch (continuation of the final meeting)
14h00	End of the visit - Departure

Specific points to be mentioned:

The program of the first day visit was adapted together with the director the day before due to the delay of arrival of an expert (snowfall in North America).

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

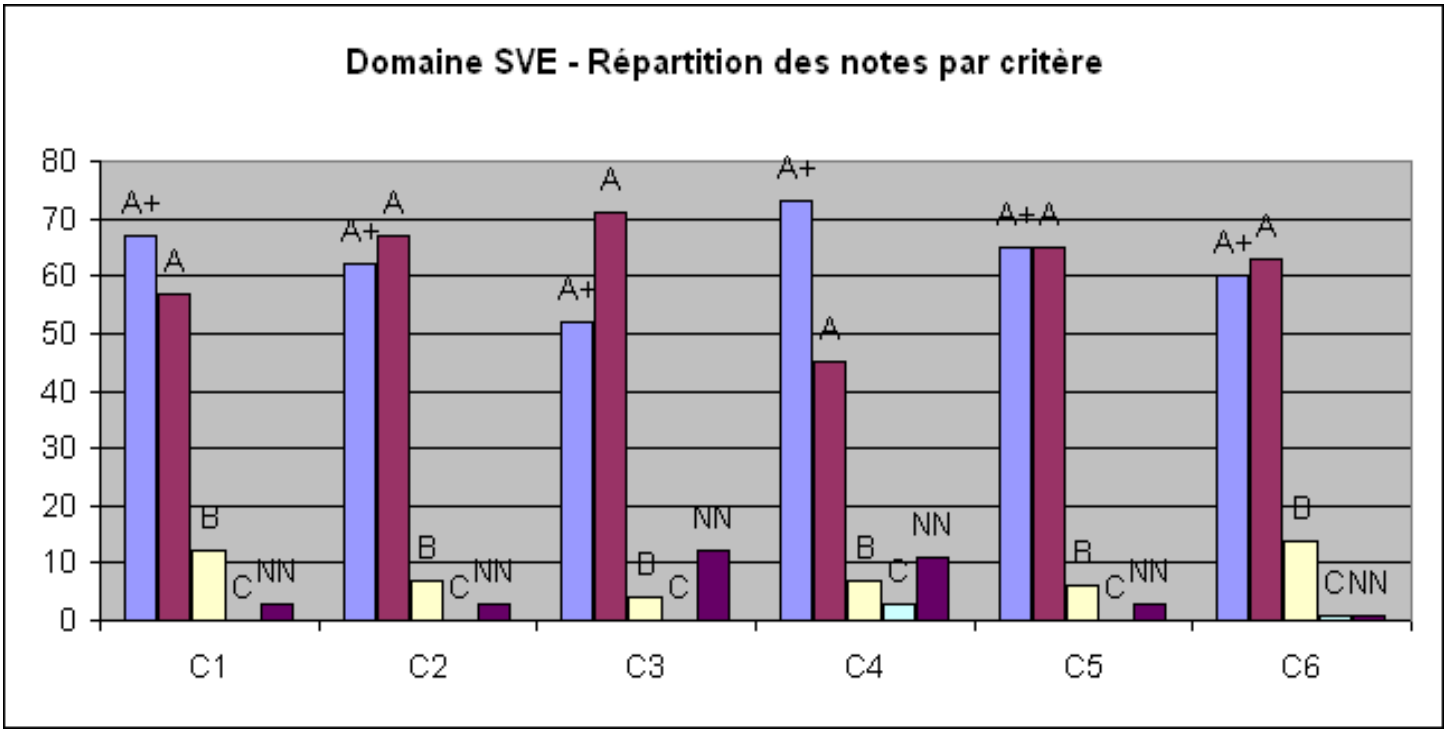
Grades

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

UNIVERSITÉ PARIS DESCARTES

Vice Président du Conseil Scientifique

Paris le 10.04.2013

Vos ref : S2PUR140006278 –
Neurophysique Physiologie
Pathologie - 0751721N

Monsieur Pierre GLAUDES
Directeur de la section des unités de recherche
Agence d'Evaluation de la Recherche et de l'Enseignement Supérieur
20, rue Vivienne
75002 PARIS

Monsieur le Directeur

Je vous adresse mes remerciements pour la qualité du rapport d'évaluation fourni à l'issue de la visite du comité d'expertise concernant l'unité « Neurophysique Physiologie Pathologie »

Vous trouverez ci-joint les réponses du Directeur de l'unité, Claude MEUNIER, auxquelles le Président et moi-même n'avons aucune remarque particulière à apporter.

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

Le Vice Président du Conseil Scientifique

Stefano Marullo, DM, DesSci

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Comments on the report

We are all thankful to the visiting committee for their thorough and in depth evaluation of our project, and we are very glad of their praise on our accomplishments and our scientific plans. In this context, I have little comments to make as project leader.

The committee well noticed that the lack of technical support was our main problem, both within teams and at the scale of the whole unit. This point was emphasized in my presentation of the project. Thanks to the evaluation process, our institutions have become fully aware of our dramatic situation in this respect and are now taking steps to improve it. Our part time CNRS secretary will work full-time for the new unit, and both CNRS and Paris Descartes are committed to give us an appropriate technical support. I am very grateful for their efforts in a difficult economic context. However, we still lack technical support for the moment, not only in Team 1 but also in Teams 2 and 3, in part because of the Sauvadet law, which limits the duration of temporary contracts, and of changes of rules for recruitments on ANR grants.

As stated in the report, a higher priority was put till now on the scientific project than on the management of the new unit. Giving a scientific identity with clear research topics to the new unit was the basis for a sound project. Our next priority, for 2013, is to formalize a new management model for the unit, innovative and taking into account the past experience of the LNP and CESeM teams, to nominate a Vice-Director and to write down the clear rules (laboratory board, budget, common investments, hygiene and safety issues…) that will underlie our collective life. I fully understand the recommendations committee on this point, and I am confident that this will prove rather easy. The four teams have already interacted both within their former units, LNP and CESeM, and in the framework of the Institute of Neuroscience and Cognition, which provides a healthy scientific and social background for the new unit. Let me also recall that my management style allowed to lead successfully the LNP since 2010 while creating and extending the INC with the help and support of two CESeM team leaders involved in the unit.

The animal housing problems mentioned in the report affect not only Team 1 but the whole unit. Researchers in Teams 2 and 3 also lack room for their strains of mice, and a new aviary and A2 facility for viruses is needed by Team 2. Hopefully, all these problems will be solved in a near future thanks to the joint efforts of IFR95, the Biomedical Faculty, CNRS and Paris Descartes University for installing a new animal house.

The installation of a High Performance Computing Cluster, with a dedicated technical support, is evoked in the report, and some informal discussions are indeed starting on this issue. If the Biomedical Faculty or Paris Descartes University actually made that move, this would be extremely beneficial for Team 2 (and to a lesser extent Team 3) that is at the forefront of Computational Neuroscience and has important needs in large scale numerical simulations.

Concerning the recruitment of young researchers, the committee is right in pointing out the importance of stabilizing the two post-docs who are playing a pivotal role in Team 3 and are still funded for 18 to 24 months. This is a priority of the new unit together with the recruitment of a young researcher (short listed by CNRS Section 25 this year at her first application) in Team 2 to develop an original project on the cerebellum that will strengthen our interactions with psychiatrists within the INC. A coordinated recruitment policy avoiding sterile concurrence between our candidates should help us to recruit these young researchers. We agreed to support one of them on an assistant-professor position, which makes sense in view of the strong involvement of our unit in the life of Paris Descartes, thanks notably to the strong investment of Team 4 in teaching, and the small proportion of (Assistant-)Professors on the profile of the new unit. Our two other candidates apply to CNRS in different sections (25 and 26).

Finally and as noticed by the committee, I intend to strengthen the ties as soon as possible between the two teams constituting each research axis. This will give each axis a critical mass and impressive scientific assets and will help to merge researchers coming from two different labs.

I am glad that the visiting committee well appreciated the scientific rationale of our organization and the move of all four teams towards translational research. I am confident that this will translate into a competitive and attracting laboratory with recognized international outreach.

Claude Meunier
Directeur de Recherche CNRS