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# Maladie d'Alzheimer : marqueurs génétiques et vasculaires, neuropsychologie, interventions psychosociales et technologies

Rapport Hcéres

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

Department for the evaluation of  
research units

AERES report on unit:

Alzheimer's disease: risk factors, treatment and  
support for patients and their families

Under the supervision of  
the following institution:

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**



## 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 received the following grades:

- Grading table of the unit: **Alzheimer's disease: risk factors, treatment and support for patients and their families**

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



## Evaluation report

Unit name:	Alzheimer's disease: risk factors, treatment and support for patients and their families
Unit acronym:	
Label requested:	
Present no.:	EA 4468
Name of Director (2012-2013):	Ms. Anne-Sophie RIGAUD
Name of Project Leader (2014-2018):	Ms. Anne-Sophie RIGAUD

## Expert committee members

Chair:	Mr. Jean-François DEMONET, Centre Leenaards de la Memoire- CHUV, Lausanne, Switzerland
Experts:	Mr. Athanasios BENETOS, Hôpital de Brabois, CHU Nancy (representative of CNU) Mr. Christophe BULA, University of Lausanne Medical center, Switzerland Mr. Vincent DE LA SAYETTE, Service Neurologie CHU, Caen Mr. Pierluigi GRAZIANI, University of Provence, Aix Marseille 1 (representative of CNU) Mr. Manuel MARTIN CARRASCO, Clinica Padre Menni, Pamplona, Spain Mr. Mauro SILVESTRINI, Neurological Clinic Polytechnic University of Marche, Ancona, Italy

### Scientific delegate representing the AERES:

Mr. Yves TROTTER

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

Mr. Stefano MARULLO, Université Paris Descartes



## 1 • Introduction

### History and geographical location of the unit:

Unit EA 4468 is located at Broca Hospital, APHP, Paris. It was founded recently in 2010 and involved initially 2 groups that are now being joined by a third one, each of them being identified by the research theme they address.

### Management team:

The unit is managed by PIs who conduct their respective research as listed below in the Theme-by-Theme analysis. The global aims address brain ageing and associated diseases, mainly Alzheimer's disease and the probable links with chronic cardiovascular disorders such as hypertension. Innovative methods for earlier diagnosis, prevention and assistance to affected patients are developed.

### 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
<b>N1:</b> Permanent professors and similar positions		6	6
<b>N2:</b> Permanent researchers from Institutions and similar positions			
<b>N3:</b> Other permanent staff (without research duties)		17	(11)
<b>N4:</b> Other professors (Emeritus Professor, on-contract Professor, etc.)		2	2
<b>N5:</b> Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.)		10	10
<b>N6:</b> Other contractual staff (without research duties)		2	-
<b>TOTAL N1 to N6</b>		37	29
Percentage of producers	<b>100%*</b>		

\*all researchers of the unit (all categories together) are producers



<b>Unit workforce</b>	<b>Number as at 30/06/2012</b>	<b>Number as at 01/01/2014</b>
Doctoral students	5	
Theses defended	2	
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	4	



## 2 • Assessment of the unit

### Strengths and opportunities:

The unit EA 4468 is a clinical research entity that put together clinicians and researchers addressing overall topics related to ageing of the brain and the accompanying diseases especially as regards cognitive dysfunctions. The unit participates in a significant way to the universal endeavour to better understand, cope with and treat the affected patients and families, a global social and medical challenge in developed countries. The unit is strategically located in a renown geriatric hospital in Paris, Broca Hospital, and benefits from adequate premises and clinical facilities. The unit manages / has access to large cohorts of patients suffering from cardiovascular or cognitive disorders. The unit addresses major issues such as (i) the pathophysiological links between chronic cardiovascular diseases such as hypertension and cognitive decline and Alzheimer's disease (AD), (ii) the search for new (blood) biomarkers of AD, (iii) the search for new cognitive biomarkers of normal and pathological brain ageing, (iv) the development of innovative methods to assess and assist elderly subjects thanks to "gerontechnologies" that use cutting-edge computer-based artificial assistance and robotics.

### Weaknesses and threats:

The unit is composed of heterogeneous sub-groups with different methods and aims. PIs should consider the potential risks of this heterogeneity and the lack of interactions / diverging goals it may generate.

A reinforcement of the scientific / engineer staff should be considered to allow PIs to master better the methodological issues such as complex statistical analyses of large multi-dimensional cohorts or the development of innovative devices for the "gerontechnologies" aspects of the unit overall proposal.

One may wonder about the impact of brain imaging on some aspects of the overall unit proposal and especially so for Theme 1. The unit PIs might want to address the issue of the advantage to have an on-site MRI facility instead of relying only on remote ones such as those in Sainte-Anne Hospital. This issue has been raised when the Committee interviewed the Representatives of APHP and of Paris-Descartes.

### Recommendations:

The unit EA 4468 overall proposal is very interesting and by many aspects highly innovative. The unit is a new entity founded 3 years ago; it involved initially 2 research groups, composed of MDs (Cardiology, Psychiatry, Geriatrics) that are being joined by a third group composed of PhDs (Psychologists). The main concern relates to the potential risk of heterogeneity and to an insufficiently coherent vision for this recently formed research entity. The PIs should consider very seriously how to promote the career of younger researchers talented enough to take a leadership position in the future.





### 3 • Detailed assessments

#### Assessment of scientific quality and outputs:

The unit, especially Theme 1, has participated in some excellent internationally recognized works, published in top ranking scientific journals, although mainly as an associated centre. Theme 2 and Theme 3 work has been published in well-known peer reviewed journals, but with a lower impact factor, and overall restricted to either French or European journals. The research carried out has an excellent methodological and ethical quality. There is no a global coordination across these 3 Themes in terms of common research lines of work or shared assumptions or hypotheses, as far as can be deduced from published papers.

#### Assessment of the unit's academic reputation and appeal:

The unit has a good reputation, and has attracted a good number of well qualified personnel, mainly from France. The unit members have coordinated international and, more frequently, national research groups or networks. They are well recognized at a French or European Level, but not on a larger scale, and should reinforce their participation in scientific boards, committees and societies. They have participated in a good number of well-known and demanding scientific meetings. Overall, these comments apply more to the geriatric field Theme 1, than to the neuropsychological or psychogeriatric ones Themes 2 and 3.

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

This unit has a highly meritable interaction with its social and economic milieu. It has a real concern for the problems and interrogations of French and European society concerning aspects as the aging of the population, preventive public health issues, and caregivers wellbeing. Moreover, it has an impressive innovative interest and a leader position at a national level in translational research on assistive technology for the demented and/or functionally impaired elderly subjects.

#### Assessment of the unit's organisation and life:

The unit seems well organised including with a long established expertise in clinical research procedures and the know-how related to elderly patients management for clinical research purposes; the management of large cohorts in this domain is also a remarkable achievement. However, the various teams in the unit address different topics and an important issue is the global management of the laboratory to maintain cohesion towards some well defined aims and a clear strategy.

#### Assessment of the unit's involvement in training through research:

In spite of the very recent arrival of members of Theme 2 including Master students, PhDs, and Post-Docs, it seems from the interview of students that the integration of trainees in the scientific activities of the unit is satisfactory at every level. The offer of courses and seminar is adequate.

#### Assessment of the five-year plan and strategy:

Theme programs are innovative, well determined, and seem to have reasonable feasibility in terms of resources, depending on the each specific proposal. Theme 2 presents very interesting perspectives but should focus better on specific proposals, the application of which will probably require to get further funding. However, as a whole, the unit might generate concerns about its heterogeneity and relative lack of coordination between the 3 Themes. Although unit members seem to cooperate well or ready to do so, there is not a real integration of research. The common grounds are the patient needs, but not a theoretical framework or approach. As a consequence, the overall impression is that there are three different plans, and no common strategy.



## 4 • Theme-by-theme analysis

**Theme 1:** Vascular risk factors and biological markers of Alzheimer's disease

**Manager's name:** M. Olivier HANON

### Workforce

Theme workforce in Full Time Equivalents	As at 30/06/2012	As at 01/01/2014
FTE for permanent professors	1	1
FTE for permanent EPST or EPIC researchers		
FTE of other permanent staff without research duties (IR, IE, PRAG, etc.)	1	1
FTE for other professors (PREM, ECC, etc.)		
FTE for postdoctoral students having spent at least 12 months in the unit	2	
FTE for other EPST or EPIC researchers (DREM, etc.) excluding postdoctoral students		
FTE for other contractual staff without research duties		
FTE for doctoral students	2	
<b>TOTAL</b>	<b>6</b>	<b>2</b>

### • Detailed assessments

#### Assessment of scientific quality and outputs of the theme:

The participants in this research theme have a satisfactory scientific productivity, as attested by 80 articles published from 2007 to 2012 in international journals with peer-review, sometimes with high visibility especially in the last years ( e.g. Nat Genetics, Mol Psychiatry, Lancet) or with a leading author position (2<sup>nd</sup> author in Hypertension 2012).

The research proposal is aimed at evaluating the potentially causal relationship among biological, genetic, vascular factors and cognitive impairment and dementia. Early identification of diagnostic and causal factors is considered one of the main goal in research for the potential opportunities to treat patients before the occurrence of irreversible, severe changes. Overall, the project aims to evaluate the relationship between vascular and cognitive damage. Data about this association are presently inconsistent. This sort of epidemiological study is essential to solve the present problem, and would be expected to realize a significant advance in the field. The coordinator appears to have good command of respective clinical and technical methods, and the research unit seems to be well experienced in the respective sub-field comprising the whole project. An addition of expert epidemiologist with excellent command of statistics would further strengthen the analysis and integration of the overall results.



### Assessment of the academic reputation and appeal of the theme:

The coordinator is the president of the French Geriatric Society. Members of the unit are involved on a regular basis in Scientific Committees and Boards for the organization of national and international Congresses and for updating guidelines.

### Assessment of the interaction with the social, economic and cultural environment of the theme:

Members in this research theme are actively involved in national and European collaborative projects. Senior members are engaged in ministerial and television programs for the dissemination of information related to opportunities offered to patients and caregivers.

### Assessment of the organisation and life of the theme:

This is a major point of strength. The team has the unique opportunity to share and integrate its experience with that of the other participants in the research unit. The achievement of this goal appears to be well structured through regular meetings among the team leaders and weekly meetings of all the members for the verification and coordination of scientific activities.

### Assessment of the involvement in training through research of the theme:

Team members actively participate in training programs involving Degree Courses, Specialized schools, PhD and Graduate Schools.

### Assessment of the five-year plan and strategy:

Research activities seem to have been well planned through the development of partnerships at the international level and the integration of the team in a research unit capable of addressing various issues related to aging and dementia.

### Conclusion:

The research activity appears very relevant and well designed to produce new knowledge on the important issue of the relationship between laboratory/clinical risk factors and neurodegenerative disorders.

#### ● Strengths and opportunities:

A major point of strength for this theme is the integration of research and clinical activities. This opportunity as well as being related to the ability to coordinate activities with those of other research groups belonging to the unit, is greatly facilitated by the location within a Hospital that strongly increases the possibility to recruit patients for the different investigations and facilitates the access to high-level diagnostic tools.

In terms of scientific content, better knowledge of dementia-related biological markers and clinical risk factors related to vascular diseases markers might greatly improve the efficacy of our preventive and curative interventions in the field of dementias. The coordinator has participated in numerous studies published in the best journals in neurology, geriatric and internal medicine.

#### ● Weaknesses and threats:

The complexity of research projects and the necessity to integrate activities with the other components of the unit, although a point of strength, is undoubtedly a demanding task that requires considerable economic effort and work, which could be undermined if the availability of research funds will suffer a setback. In addition, considering the high quantity of literature on the subject, it should be better specified how new results could impact common clinical practice. Further, a better definition of the statistical approach for the integration of the overall results would further strengthen the positive judgment.



- Recommendations:

The overall judgment is positive both for research aspects and those regarding teaching. This is a well-structured research approach focusing on the pathogenesis of neurocognitive decline. The project is original for the possibility of obtaining results that arise from the integration of clinical, instrumental and laboratory information and addresses the important issue of neurocognitive decline through an interesting approach. Researchers have the experience and the expertise to reach the expected goals.



**Theme 2:** Neuropsychological of normal and pathological aging

**Manager's name:** Ms Anne Marie ERGIS

### Workforce

Theme workforce in Full Time Equivalents	As at 30/06/2012	As at 01/01/2014
FTE for permanent professors	2	2
FTE for permanent EPST or EPIC researchers		
FTE of other permanent staff without research duties (IR, IE, PRAG, etc.)	3	3
FTE for other professors (PREM, ECC, etc.)	2	2
FTE for postdoctoral students having spent at least 12 months in the unit	3	
FTE for other EPST or EPIC researchers (DREM, etc.) excluding postdoctoral students		
FTE for other contractual staff without research duties	7	7
FTE for doctoral students	4	
<b>TOTAL</b>	21	14

- Detailed assessments

#### Assessment of scientific quality and outputs of the theme:

Overall 38 papers were listed from 2007 to 2012 that appeared in journals specific to the domain of cognitive neurosciences or neuropsychology, sometimes in journals of higher visibility (e.g. *Neurobiology of Ageing* 2012). Participants to Theme 2 were leading authors in these publications (mostly as last authors). Some of these publications are not in direct relation to the topics addressed in the present unit proposal.

#### Assessment of the academic reputation and appeal of the theme:

Researchers participating to Theme 2 are active and renown in their field of specialty with talks given at international conferences. The number of students either PhD or Post-docs in relatively small but one may note the regular involvement of students as author or co-author in the publications of the research group.

#### Assessment of the interaction with the social, economic and cultural environment of the theme:

Researchers are invited to / participate in public events related to fostering knowledge to the general public concerning cognitive functions and dysfunctions, especially in relation to ageing.



### Assessment of the organisation and life of the theme:

This item is difficult to address because the merging of the group of researchers involved in Theme 2 with the rest of the unit is only very recent so that one can hardly assess the actual amount of collaborations and the functional organization across the 3 theme groups. It is clear that the expertise of this new group in cognitive evaluation represents an important input to the unit overall as this expertise could be exploited to further developments of projects in the other two groups/themes. This new theme is a point of strength for the future of the unit owing to its expertise and its "transversal" function, cognitive issues being likely to be used to many purposes.

### Assessment of the involvement in training through research of the theme:

The Professors and Assistant Professors are obviously involved in many teaching programs in Psychology at Paris Descartes ( Boulogne site). Students of this group participate in regular meetings of the group / laboratory in which data presentations / discussions are organized, although one may note the relative heterogeneity within this yet small group, some works being related to developmental topics (development of reading strategies for instance) and the others to ageing-related issues. Reading the document provided via AERES was not sufficient to retrieve information about the projects in which Post-Docs are involved.

### Assessment of the five-year plan and strategy of the theme:

Theme 2 provides the unit with a new potential of research which is likely to reinforce the existing projects and to give a new axis of cohesion of the unit. Theme 2 proposal is centered on the influence of the disorders of executive and attention functions in the early phase of ageing-related cognitive diseases. New concepts and innovative paradigms (e.g. prospective memory) have been put forward and will be applied to patient population on a broader scale thanks to closer collaborations that will be either reinforced or set up between the new researchers and the clinical teams at Broca Hospital. Researchers from Theme 2 got substantial funding to pursue their research projects in this new framework. They benefit from the support brought out by the specific "Axe Thematique Prioritaire" from Paris-Descartes. Diverse fundings also exist to a relatively modest extent to support specific projects.

### Conclusion:

- Strengths and opportunities:

Theme 2 is an important "plus" to the overall unit EA 4468. It brings out new researchers, new ideas and new methods that could be directly exploited for the development of the projects specific to Theme 1 and 3. Reciprocally, the involvement of Theme 2 in Broca Hospital is a major advantage for the former as researchers will have access to a number of patients via the expertise of highly specialized MDs, long trained to the specific topics of clinical research and cognitive testing in the elderly. The potential of synergy is especially compelling with Theme 3 as very interesting perspectives can be foreseen so that to apply attention-related concepts and paradigms to non-drug intervention programs in "at-risk" ageing subjects; in addition, the input of high-tech innovative media could boost dramatically the input of Theme 2 in the domain of executive functions.

- Weaknesses and threats:

A concern is the yet imprecise way the research projects generated / impelled by Theme 2 will be implemented in Broca Hospital in practical terms; the PIs of Theme 2 will still have their basic setting in Boulogne (where they teach) and they will have to connect very frequently to Broca Hospital to supervise their experiments and on-going projects.

The absence of anteriority in terms of scientific collaborations between Theme 2 researchers and the other Themes is a potential risk that the whole group of PIs should consider and monitor in the next steps of the overall project. This concern may be more important as regards the relationships of Theme 2 with Theme 1 than those with Theme 3.

- Recommendations:

A better explicitation of the implementation of Theme 2-specific research proposals in the framework of unit EA 4468 is recommended. Such a precise planning is likely to facilitate greatly the input of Theme 2 to the rest of the unit. The unit should be encouraged to an active search for further funding for their projects as the existing ones seem relatively limited and might prove insufficient to implement research programs on a broader scale.



**Theme 3:** Psychosocial interventions and assistive technology

**Manager's name:** Ms Anne Sophie RIGAUD

### Workforce

Theme workforce in Full Time Equivalents	As at 30/06/2012	As at 01/01/2014
FTE for permanent professors	1	1
FTE for permanent EPST or EPIC researchers		
FTE of other permanent staff without research duties (IR, IE, PRAG, etc.)	3	3
FTE for other professors (PREM, ECC, etc.)		
FTE for postdoctoral students having spent at least 12 months in the unit	3	
FTE for other EPST or EPIC researchers (DREM, etc.) excluding postdoctoral students		
FTE for other contractual staff without research duties	10	10
FTE for doctoral students	6	
<b>TOTAL</b>	<b>23</b>	<b>14</b>

### • Detailed assessments

#### Assessment of scientific quality and outputs of the theme:

Overall 60 papers were listed from 2007 to 2012. Participants to Theme 3 were mostly co-authors of collaborative papers in well-known peer-reviewed journals sometimes with high visibility; however, the specific aspects of Theme 3 work has been published in journals with much lower impact factor (e.g. "Health Informatics Journal ») or in French. The research carried out is highly specific and in close connection with scientific and industrial partners that are infrequently associated with clinical practice such as computer engineers specialized in the new technologies of information and communication and robotics. Although a number of publications were produced, these publications may not be visible enough, owing to the highly specialized topics they addressed. The overall topic is the use and development of new technical means to assess and to improve care of elderly people handicaps in daily life activities. It implies experimental settings (e.g. experimental apartment where people are invited to spend some hours and perform daily life typical activities) or robotic equipment that can alleviate specific cognitive or physical age-related inabilities. The development and piloting of such new high-tech tools involve trial-and-error strategies in very small groups of subjects who are confronted with such new devices.

#### Assessment of the academic reputation and appeal of the theme:

Members of the theme have a good reputation, and have attracted a good number of well qualified personnel, mainly from France. They have coordinated international and, more frequently, national research groups or networks. They are well recognized at an French or European Level.



### Assessment of the interaction with the social, economic and cultural environment of the theme:

This theme gives rise to a highly meritable interaction with the relevant social and economic milieu. Clinicians and researchers involved in the theme develop an impressive innovative interest and a leader position at a national level in translational research on assistive industrial technology for the demented and/or functionally impaired elderly subjects. Given the pilot character of this work, its outcome in terms of high quality research output remains uncertain.

### Assessment of the organisation and life of the theme:

Few members who are working together on this theme seem to perform adequately, and no perceivable major dysfunction or conflict was identified.

### Assessment of the involvement in training through research of the theme:

Trainees seem well integrated in the scientific activities at every level. Students and PhDs are guided and monitored conveniently.

### Assessment of the five-year plan and strategy of the theme:

Theme 3 scientific strategy is clearly a risky one owing to the pilot characteristics of this research and the needs of (i) replication and validation of such innovative high-tech methods for assessing and remediating handicaps of the elderly and (ii) if successful in validation, transfer to the industrial stage.

The Committee strongly recommends the unit to identify and to promote second-generation team members talented enough to take a leadership position in the near future.

### Conclusion:

The research approach of Theme 3 is very innovative and the links established between clinicians of the unit and researchers/engineers and industrial partners developing new computerized methods applied for remediation and care of elderly subjects is quasi unique. This is also an atypical research activity whose formal validation and assessment of practical impact in real life remains highly uncertain.

#### • Strengths and opportunities:

The participants in Theme 3 activities have the unique opportunity to experiment completely new methods for assessing age-related handicaps and remediating them, thanks to long-established relationships and collaborations with groups developing high-tech innovative methods, including via industrial or academic research grants at the National of European level.

#### • Weaknesses and threats:

A clear drawback of the current activities in the absence of in-house expertise of the (complex) technical aspects of the R&D issues raised by the development of such new high-tech methods and tools. As a consequence, this activity might evolve to that of a purely applicative site in which high-tech innovations from outside are tested without real "reverse translational flux", i.e. the clinicians conveying to the engineers their original observations from patients' actual handicaps and needs. Innovative technology research should therefore be more integrated on-site, although this might be a challenge in hospital structures and premises.

#### • Recommendations:

The overall judgment is positive mainly owing to the highly innovative and promising perspectives this work brings out. Its potential could be tremendously increased with the establishment of much closer and bi-directional translation between experts in new technologies and robotics on the one hand and clinicians on the other.





## 5 • Conduct of the visit

### Visit date:

**Start:** wednesday, 30, january 2013, at 8h30

**End:** wednesday, 30, january 2013, at 18h30

### Visit site:

**Institution:** Unit EA 4468

**Address:** Hôpital Broca, 54 rue Pascal, 75013 Paris

### Conduct or programme of visit:

8h30 -9h00	Door-closed meeting - Committee members and AERES representative
9h00 -9h15	Introduction of the visiting Committee by the AERES representative
9h15-10h	Scientific assessment and projects of the Unit (Ms Anne Sophie RIGAUD)

### Groups presentations

10h-10h45	Scientific assessment and projects of group 1: Vascular risk factors and biological markers in Alzheimer disease (M. Olivier HANON)
10h45-11h	<b>Break</b>
11h-11h45	Scientific assessment and projects of group 2: Neuropsychology of normal and pathological aging (Ms Anne-Marie ERGIS)
11h45-12h30	Scientific assessment and projects of group 3: Psychosocial interventions and assistive technologies for patients and their caregivers (Ms Anne-Sophie RIGAUD)
12h45-14h	<b>Lunch</b>

### Meeting with the permanent and non permanent staff

14h -14h45	Meeting with the technical staff (committee members, AERES representative, no head/team leader of the unit)  Meeting with PhD students and Post-docs and/or fixed-term contract researcher, engineers (committee members, AERES representative, no head/team leader of the unit)  Meeting with researchers, teaching-researchers (committee members, AERES representative, no head/team leader of the unit)
14h45-15h	<b>Break</b>
15h-15h45	Meeting with the representatives of the institutions. (committee members, AERES representative)
15h45-16h15	Meeting with the head of the EA (committee members, AERES representative)
16h30-18h30	Door-closed Committee (committee members, AERES representative)



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

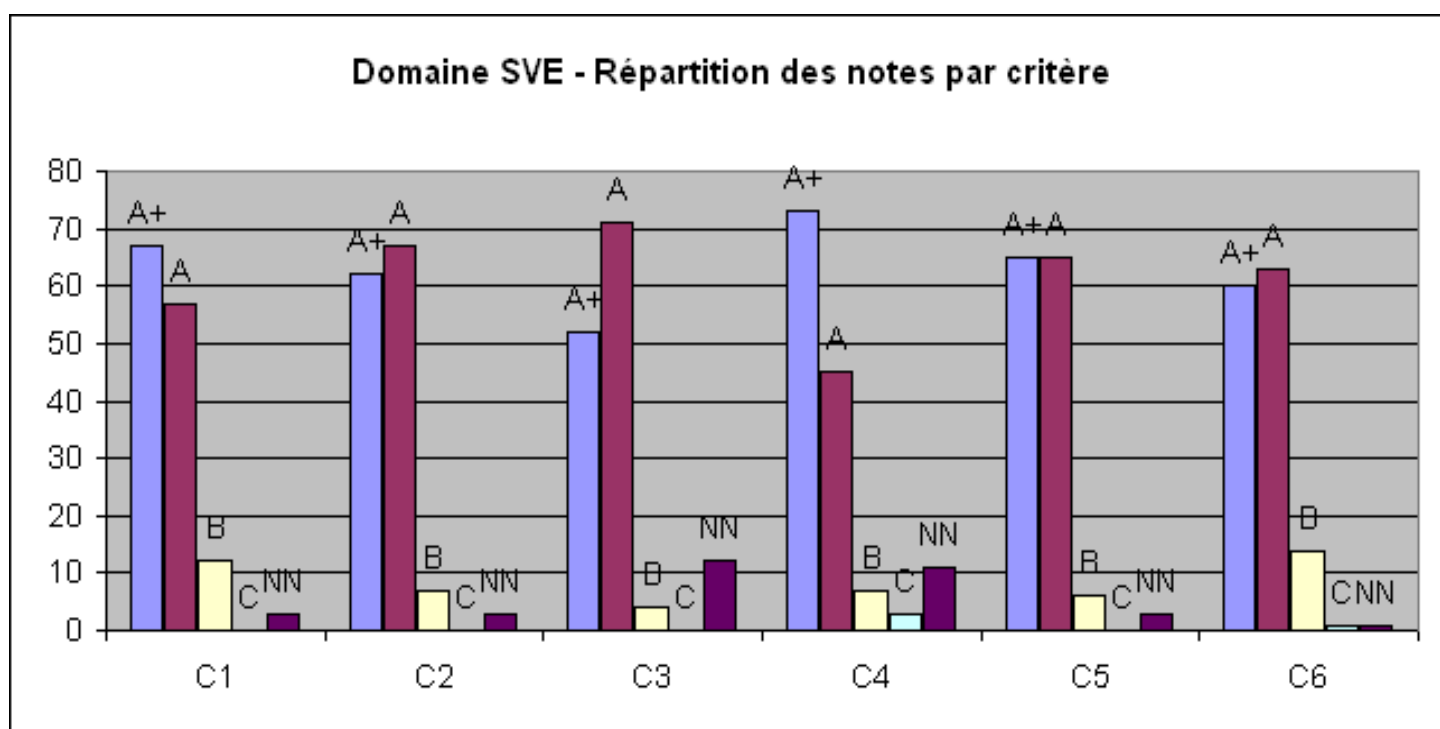
### Grades

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

Vice Président du Conseil Scientifique

Paris le 19.04.2013

Vos ref : S2PUR140006457 –  
EA 4468: Maladie d'Alzheimer:  
marqueurs génétiques et vasculaires,  
neuropsychologie, interventions  
psychosociales et technologies -  
0751721N

Monsieur Pierre GLAUDES  
Directeur de la section des unités de recherche  
Agence d'Évaluation 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 « EA 4468 : Alzheimer's disease : risk factors, treatment and support for patients and their families »

Vous trouverez ci-joint les réponses du Directeur de l'unité, Anne-Sophie RIGAUD, auxquelles le Président et moi-même n'avons aucune remarque particulière à rajouter.

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

Le Vice Président du Conseil Scientifique



Stefano Marullo, DM, DesSci



## Research unit EA 4468: Alzheimer's disease: risk factors, treatment and support for patients and their families

Research Unit Address: Service de Gériatrie 2, Hôpital Broca (AP-HP), 54-56 rue Pascal 75013 Paris  
Tel: 33 1 44 08 35 03  
Fax: 33 1 44 08 35 10  
Website: [www.gerontologie.vermeil.org](http://www.gerontologie.vermeil.org)

### Answers to the report from the visiting committee

Anne-Sophie Rigaud, Anne-Marie Ergis and Olivier Hanon

*We would like to thank the experts for their thorough investigation of our unit activities and their useful comments. We would like to briefly comment on some of the points raised in their report.*

#### 1. Introduction

*No comment*

#### 2. Assessment of the unit

##### *Weaknesses and threats:*

*"The unit is composed of heterogeneous sub-groups with different methods and aims. Pls should consider the potential risks of this heterogeneity and the lack of interactions / diverging goals it may generate":* Although we acknowledge the fact that we are different sub-groups with different methods and aims, we would like to outline that we are all focused on one unique aim: diagnosis and care of cognitive impairment in older adults, which can hardly be separated. Progressively we have been incorporating tools and knowledge from the three sub-groups of the unit under an integrative care model of cognitive impairment; for instance, over the last period clinicians have played an increasingly important role in the definition and follow up of research protocols (e.g., monthly transversal research staff). Additionally, and following your suggestions, we plan to increase interactions and collaboration between teams by preparing joined submission to research calls in the future.

*"A reinforcement of the scientific / engineer staff should be considered to allow Pls to master better the methodological issues such as complex statistical analyses of large multi-dimensional cohorts or the development of innovative devices for the "gerontechnologies" aspects of the unit overall proposal":* First we would like to emphasize the presence in the unit of four young researchers who have an expertise either in statistics or in methodology including 1) Jean-Sebastien Vidal and Matthieu Plichard, experts in complex statistical analyses of large multi-dimensional cohorts methodology, 2) Hélène Kerhervé and Maribel Pino experts in user-research methodologies for the assessment of innovative devices in the field of gerontechnology. In addition, we would like to outline the fact that we have strong links and collaborations with Cochin Unité de Recherche Clinique (URC headed by Pr JM Treluyer) which encompasses a department dedicated to methodology and statistics. We regularly leverage their skills in methodology/statistics to improve our work. However, we agree that broadening the competency of the research unit in the aforementioned areas could lead to higher impact research.

#### 3 Detailed assessments

##### *Assessment of the five-year plan and strategy:*

*"Although unit members seem to cooperate well or ready to do so, there is not a real integration of research. The common grounds are the patient needs, but not a theoretical framework or approach. As a*

consequence, the overall impression is that there are three different plans, and no common strategy". We acknowledge your view on this issue. Indeed, during the last period we did not have enough time to build up a common theoretical framework or approach since team 2 joined the unit one year ago. However we currently work on this issue and efforts are being made in the three sub-groups for building a more collaborative and integrative research framework.

## 4 Theme-by-theme analysis

### Theme 1: Vascular risk factors and biological markers of Alzheimer's disease

"An addition of expert epidemiologist with excellent command of statistics would further strengthen the analysis and integration of the overall results". As written above, we would like to insist on the presence of Jean-Sebastien Vidal and Matthieu Plichard who already have an expertise in complex statistical analyses of large multi-dimensional cohorts methodology. Of course, we would be glad to welcome other outstanding epidemiologist if possible.

### Theme 2: Neuropsychological of normal and pathological aging

We would like to emphasize the fact that Team2 members arrived in the unit EA 4468 one year ago. Thus it is hardly possible for them to join ongoing projects. But our objectives are of course to develop collaborations between colleagues from themes 1, 2 and 3, and we meet regularly on that purpose. We are currently applying jointly to a call for proposals, and we'll do for others. Concerning the comment on studies not related to aging, colleagues not mainly specialized in aging joined team 2 last year, and some studies proposed in the project are in continuation with their developmental research done in the past.

### Theme 3: Psychosocial interventions and assistive technology

"A clear drawback of the current activities in the absence of in-house expertise of the (complex) technical aspects of the R&D issues raised by the development of such new high-tech methods and tools". Although we do not have a dedicated R&D expert in the unit, we have developed strong partnerships with several experts in the field of innovation and healthcare technology who provide us with support on technical/technological issues, including the National Expert Centers (Centre d'Expertise Nationaux-CEN), especially the CEN STIMCO (Cognitive Stimulation) launched by Caisse Nationale de Solidarité et de l'Autonomie, the National Reference Center for home health and autonomy (Centre National de Référence), competitiveness clusters (pole de compétitivité), innovation centers (Centre d'Innovation d'Ile de France), the Soliage group, who brings together different stakeholders in the gerontechnology field, and other similar institutions. It is important to remind that our focus is on applied user-research and how to integrate assistive technology to the existing models of care not on the engineering aspects of technology development. However, we consider that this is a valuable suggestion and consequently for the coming years, our team plans to enlarge our competencies in this field, by recruiting engineers with an expertise in robotics and informatics.

*We thank the members of the visiting committee and observers of the AERES for considering our answers.*

Anne-Sophie Rigaud

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