DGeMM - Génétique du développement chez les modèles marins

Rapport Hcéres

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

Department for the evaluation of research units

AERES report on unit:

Developmental Genetics and Marine Models

DGeMM

Under the supervision of the following institutions and research bodies:

University Paris 6 - Pierre & Marie Curie

Centre National de la Recherche Scientifique

December 2012

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

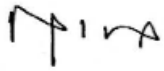
Research Units Department

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, when necessary, its in-house teams) received the following grades:

- Grading table of the unit: Developmental Genetics of Marine Models

C1	C2	C3	C4	C5	C6
NN	NN	NN	NN	NN	C

- Grading table of the team: Development and Evolution of Vertebrates

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

- Grading table of the team: Morphogenesis of Macro Algae

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

Evaluation report

Unit name:	Developmental Genetics of Marine Models
Unit acronym:	DGeMM
Label requested:	UMR
Present no.:	Does not apply
Name of Director (2012-2013):	Does not apply
Name of Project Leader (2014-2018):	Ms Sylvie MAZAN

Expert committee members

Chair:

Mr Daniel CHOURROUT, Sars International Centre for Marine Molecular Biology, Bergen, Norway

Experts:

Mr Dominique DE VIENNE, UMR de Génétique Végétale, INRA, Gif /Yvette

Ms Kathrin GIESELER, Centre de Génétique et de Physiologie Moléculaires et Cellulaires, University of Lyon, (representative of the CNU)

Mr Jan TRAAS, Laboratoire de Reproduction et Développement des plantes, ENS, Lyon, (representative of the CoCNRS)

Scientific delegate representing the AERES:

Mr Pierre COUBLE

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

Mr Laurent KODIABACHIAN (CNRS)

Ms Martine MAIBECHE-COISNE (University Pierre et Marie Curie, Paris)

1 • Introduction

History and geographical location of the unit

The proposed unit results from a reorganization of the UMR 7139 (*Biomolécules et Végétaux Marins*) and UMR 7150 (*Mer et Santé*). It associates two teams, one headed by Sylvie MAZAN (presently in UMR 7150) and one headed by Bénédicte CHARRIER (presently in UMR 7139). This led to the project of creation of a unit using algae and metazoan and entitled Developmental Genetics of Marine Models.

Management team

It is proposed that the Unit is directed by Ms Sylvie MAZAN and that a scientific Council is set up for governing the Unit. The Unit also expects to rely on FR424 for health and safety follow-up, logistics as well as administrative services and technical plateforms.

AERES nomenclature

SVE1_LS3, SVE2_LS3

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	2	2	2
N2: Permanent researchers from Institutions and similar positions	2	2	2
N3: Other permanent staff (without research duties)	1	1	0
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)	0	0	0
N5: Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.)	5	1	1
N6: Other contractual staff (without research duties)	0	0	0
TOTAL N1 to N6	10	6	5

Percentage of producers	***100.00 %***

Unit 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	0	
Qualified research supervisors (with an HDR) or similar positions	2	2

2 • Assessment of the unit

Assessment of scientific quality and outputs

The project submitted for the creation of a new UMR named « Developmental genetics and marine models » aims at gathering the teams of Sylvie MAZAN and of Bénédicte CHARRIER, currently in the UMR 7139 Biomolécules et Végétaux Marins and UMR 7150 Mer et Santé respectively. The team led by Sylvie MAZAN studies the evolution of vertebrate development, at early stages of embryogenesis (formation of axes and main layers) as well as at later stages (establishment of brain asymmetries), using taxa occupying basal positions in the vertebrate tree (Lamprey and Catshark). Bénédicte CHARRIER's team studies the development of brown algae using the new model system Ectocarpus, which was largely established in the Station by joint efforts from another group and Bénédicte CHARRIER herself. She is interested in how Ectocarpus cell types and filament branching are established during development, using induced mutants and increasingly biophysical approaches. Brown algae are very distant from the prominent models currently used in the evo-devo field, which is not a real problem. However, Bénédicte CHARRIER's project does not specifically addresses evolutionary processes through comparative approaches. The committee has evaluated each team individually and has reached very positive conclusions on their respective past research and current projects, which are both excellent and original. There is no doubt that both PIs are able to produce high impact publications and to attract talented young scientists.

Weaknesses and Threats

The committee was quite surprised to observe in the documents provided for the evaluation and during the presentations by the team leaders that none of their past or current research projects has associated or associates the two teams. There are neither collaboration and common publication, nor shared intellectual constructions on potential synergies that would give their association a relevant scientific ground. Elaborating common reflections would have been particularly required in this case, since the scientific questions, the model systems and the methodologies used by either team are very different. The genesis of credible common projects in the highly competitive context of external funding demanded major efforts and these are not at all visible.

The opinion of the committee is that sharing general interest for a broad discipline such as developmental biology is far from sufficient for justifying the creation and support of a new structure, even in a Marine Station where scientific projects are traditionally more dispersed than elsewhere. Because no current or potential synergy is found in the documents provided, the committee was also surprised to hear that the other main reason put forward for the UMR creation is "a common view on UMR management".

The proposed creation carries obvious risks of a damageable scientific split between Bénédicte CHARRIER's team and another team at the station, whose project is to be carried out within a distinct UMR. This team also works on the development of Ectocarpus and on the generation of multiple resources that Bénédicte CHARRIER's team will need for its own projects.

Recommendations

In conclusion, the committee feels that, as proposed, the association of the two teams in one unit is not scientifically justified.

3 • Detailed assessments

Assessment of scientific quality and outputs

Not applicable

Assessment of the unit's academic reputation and appeal

Not applicable

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

Nort applicable

Assessment of the unit's organisation and life:

Not applicable

Assessment of the unit's involvement in training through research

Not applicable

Assessment of the five-year plan and strategy

See Assessment of the unit in section 2

4 • Team-by-team analysis

Team 1 : Development and Evolution of Vertebrates

Name of team leader: Ms Sylvie MAZAN

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	
N2: Permanent EPST or EPIC researchers and similar positions	1	1	
N3: Other permanent staff (without research duties)			
N4: Other professors (PREM, ECC, etc.)	3		
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)			
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6	5	2	

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	2	
Theses defended		
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	1

• Detailed assessments

Assessment of scientific quality and outputs

The research team, which arrived at the Marine Station in 2009, is currently composed of 6 members. It is interested in the evolution of development in vertebrates. In this context the team is using two non-conventional model organisms, the Lamprey and Catshark. In these two species, the team is currently focusing on two different aspects: (i) patterning and morphogenesis are analysed during early embryogenesis and (ii) asymmetry in the epithalamus is studied during later development. In parallel, the team is coordinating and contributing to the Catshark genome project. Whereas evolution and morphogenesis are widely studied and competition is strong, the choice of these non-conventional models provides the team with a strong strategic advantage, as this will allow them to approach the scientific questions from an original and exciting historical angle. The committee therefore evaluated the project as original and innovative. The installations at Roscoff also guarantee optimal conditions for carrying out such an ambitious set of projects and the team has benefited from several technical platforms, in particular for the production and manipulation of embryos as well as imaging. The downside of choosing non-conventional models is that a substantial amount of energy has to be invested in technical developments. The team has made this effort and has now an extensive set of tools and resources, ranging from bio-informatics to 3D imaging and whole mount in situ hybridization.

The scientific production of the team PI is good, with a total of 13 publications in the last five years, mostly in collaboration (Mol Biol Evol, PLoS One, J Comp Neurol, BMC Evol Biol…). Among these, one review with the team leader as corresponding author (J Anat) is directly resulting from the projects started in 2009. In addition, several publications are currently being submitted to high impact journals. In view of the time needed to set up such an ambitious and challenging project this seems more than fairly productive.

Assessment of the unit's academic reputation and appeal

The team is well integrated in the international evo-devo community. The team leader has been invited to several national and international meetings and has been very active and successful in developing collaborative networks. Notably, she is currently coordinating an ANR project (EVOLAX) involving two other partners and is heading an international consortium of 35 partners (GENOSHARK) aimed at analysing the transcriptome and genome of the catshark.

At this stage, with the project still in its early stages, it is difficult to assess the ability to recruit top level scientists, but the ambition to do so is clearly present.

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

Not applicable

Assessment of the unit's organisation and life

The team is relatively small and functions in a competent, efficient manner, with regular team meetings. The team members are all very motivated and expressed their enthusiasm for their own projects. The team has access to all the facilities at the Marine Station, which provides strong technological support.

Assessment of the unit's involvement in training through research

With the presence since 2011 of a lecturer (enseignant-chercheur) in the team, the potential is high. Since 2011, a number of initiatives have been taken, but these were not assessed during the evaluation.

Assessment of the five-year plan and strategy

The team has established a set of clear objectives within three well-defined projects. As mentioned above, the choice to focus on non-conventional models bears a number of obvious risks and presents a number of challenges. However, the important investments made over the last three years have put the team in a strong strategic position and the team should produce highly visible results within the coming years. Nevertheless, the committee also considered the amount of work to be carried out on the three proposed themes possibly overambitious given the current team size. This problem is mentioned in the SWOT analysis of the research unit (involving the two teams).

Conclusion

- Strengths and opportunities:

During the last three years, the team has been able to set up an original, strong research project which has started to yield very promising results. The developed techniques and resources, further complemented by the facilities available at the Marine Station provide the team with a solid basis for further research. The team has access to a well-established, international network of collaborations.

- Weaknesses and threats:

The size of the team seems sub-optimal in view of the ambition of the research projects. The team seems also to be little connected scientifically to the rest of the Marine Station. Interactions with the B. Charrier's team in particular seem minimal.

- Recommendations:

The evaluation committee encourages the team to prioritize clearly their research objectives and to focus all their strength on the most promising goals.

4 • Team-by-team analysis

Team 2 : Morphogenesis of Macro Algae

Name of team leader: Ms Bénédicte CHARRIER

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	1	1	1
N3: Other permanent staff (without research duties)	1	1	
N4: Other professors (PREM, ECC, etc.)			
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)	2	1	
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6	5	4	2

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	1

• Detailed assessments

Assessment of scientific quality and outputs

The research team was created in January 2009 and has largely contributed to the development of Ectocarpus siliculosus as an experimental model for brown algae genetics and developmental biology. The main aim of the team is to characterize the mechanisms and molecular factors involved in Ectocarpus morphogenesis and early filament development including cell communication, proliferation and polarization.

Over the last 5 years the team members have contributed to 13 scientific publications most signed in first and/or last position (including 2 reviews) and two book chapters. Three publications as well as one review – all signed in first and/or last position – have been published after the creation of the team (Plant Physiol. (IF 6.5), Plant Cell. (IF 8.9), Plant Signal Behav., Trends Plant Sci. (IF 11)), thus indicating a good potential of the team for high quality publications.

In addition, the team has contributed to the development of valuable new tools and approaches. Most notably the team has contributed to Ectocarpus genome annotation and the generation of a library of about 60 mutants exhibiting morphogenetic defects (the characterization of one of these mutants is reported in two publications) and has developed bioinformatics tools for the modelling of early filament development and branching in Ectocarpus.

Assessment of the unit's academic reputation and appeal

The team already has an important international reputation as demonstrated by the initiation of international collaboration and its role as a co-founder of an international network on macro algae morphogenesis (Phycomorph) unifying 23 partners from 10 different countries as well as by several invitations for seminars in French and European institutions. In addition the team has benefited from the support by the Europole Mer research consortium.

Since its creation, the team has recruited one permanent assistant engineer, one Post-doc, one PhD student and one non-permanent technician attesting the attractiveness of the team.

The major point of weakness is the current lack of funding and research grants

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

Not applicable

Assessment of the unit's organisation and life

The functioning and life of the group is difficult to judge, as the team is recent. The current organization of the team is coherent with respect to the scientific project. The competences of the team members cover in particular developmental biology, genetics, bioinformatics and biochemistry. In addition, the group benefits from the various facilities available at the FR2424.

Assessment of the unit's involvement in training through research

The team is strongly involved in training through research. On the one hand, the group has trained two PhD students and three Masters students. On the other hand, an assistant professor at UPMC conceived and coordinates teaching units in Masters programs, which are related to his research competencies and contribute to training through research of students.

Assessment of the five-year plan and strategy

The five years project of the team is well constructed and mainly aims at pursuing the study of the mechanisms involved in Ectocarpus morphogenesis through the characterization of two mutant strains exhibiting cell differentiation effects and the identification of the affected genes. The major evolution of the project concerns the study of the influence of mechanical constraints to Ectocarpus morphogenesis. The main strength of this project is the use of a great variety of approaches that are at the interface between biology, bioinformatics and biophysics. The team further puts important efforts in the development of transgenic approaches. The achievement of this aim would be of greatest interest for the scientific community working on Ectocarpus as it presents an important and still missing tool for genetic studies in this organism.

Conclusion

- Strengths and opportunities:

The team is well integrated in an international network and has an important expertise in the study of early Ectocarpus development. The research project proposed by the group is innovative and original in particular by the combination of multiple approaches at the interface between biology, bioinformatics and biophysics.

The team is further strongly involved in the training through research and has a high potential of attractiveness for Masters and PhD students as well as post-doc researchers.

- Weaknesses and threats:

The main weakness of the group is the current lack of funding. In addition, while the national and international collaborations of the team are expanding, interactions with local teams seem limited.

- Recommendations:

The implication in an international network potentially increases the opportunities and the success rate for grant applications. However, given the local environment it could be opportune to develop stronger interactions with local teams working on Ectocarpus to 1) share expertise and put common efforts in the development of new tools and approaches and 2) to submit joint applications for local and national funding.

5 • Conduct of the visit

Visit date:

Start: Tuesday 18, December 2012 at "time"

End: Tuesday 18, December 2012 at 6:00 PM

Visit site(s):

Institution: Station Biologique de Roscoff

Address: Roscoff

Specific premises visited: none

Conduct or programme of visit:

Tuesday 18, December 2012

11/00 – 11:15 AM:	Closed door Committee meeting
11:15 - 11:30 AM:	Presentation of the AERES evaluation Committee
11:30 – 12:30 PM:	Presentation of the research unit by Sylvie Mazan (including 15-20 mn questions)
12:30 – 1:30 PM:	Lunch / Meeting with representatives of Institutions supporting the unit
1:30 – 2:20 PM:	Team 1 (Sylvie Mazan)
2:20 – 3:10 PM:	Team 2(Bénédicte Charrier)
3:10 – 3:30 PM:	Break / Debriefing of the Committee
3:30 – 3:45 PM:	Meeting of the Committee with technical and administrative staff
3:45 – 4:00 PM:	Meeting of the Committee with Thesis students
4:00 – 4:15 PM:	Meeting of the Committee with researchers and postdocs
4:15 – 4:30 PM:	Meeting of the Committee with the head of research unit
4:30 PM:	End of visit
4:30 – 6:00 PM:	Closed door meeting of evaluation Committee.

Specific points to be mentioned: none

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

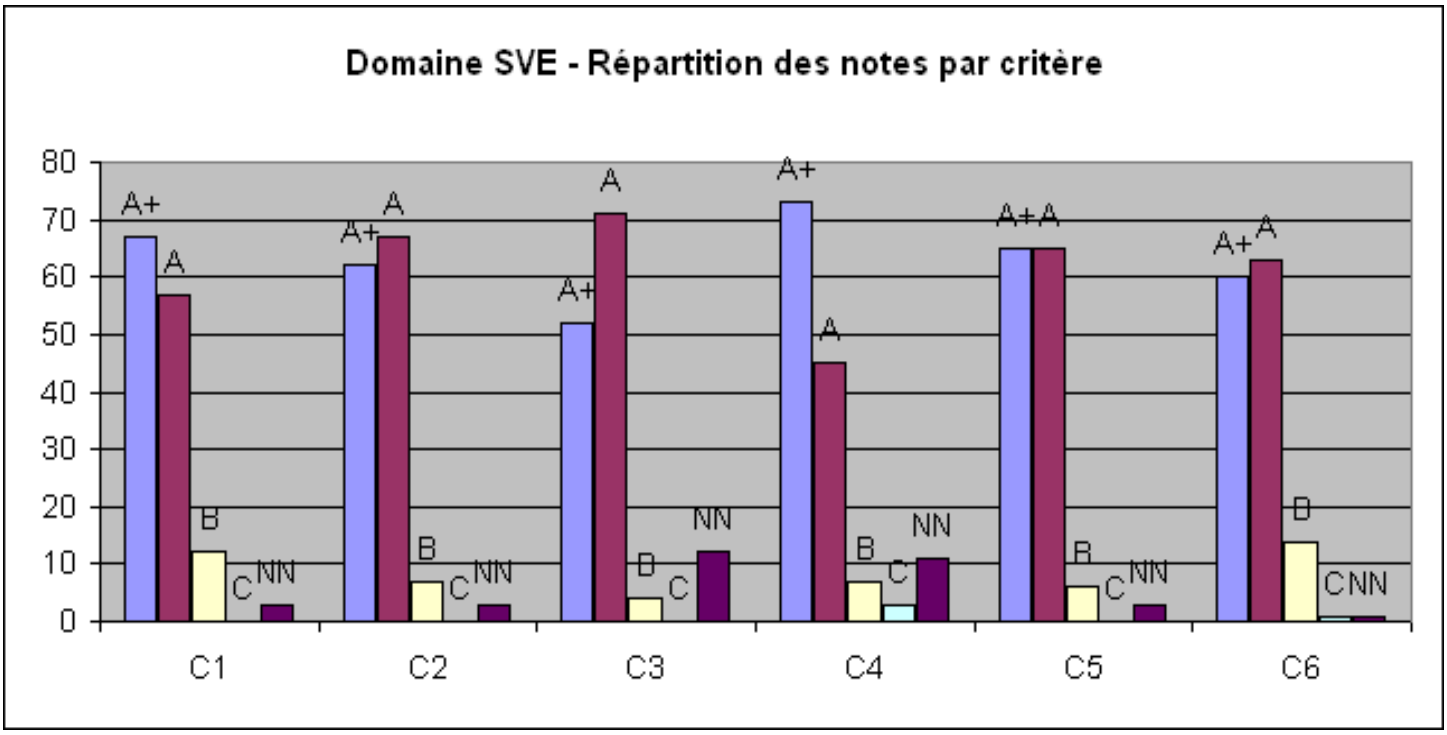
Grades

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

Paris le 11 04 2013

Le Président
Didier Houssin
Agence d'évaluation de la recherche
et de l'enseignement supérieur
20 rue Vivienne - 75002 PARIS

M. le Président,

Nous avons pris connaissance avec le plus grand intérêt de votre rapport concernant le projet du laboratoire de Génétique du Développement chez les Modèles Marins, porté par Mme Mazan. Nous tenons à remercier l'AERES et le comité pour l'efficacité et la qualité du travail d'analyse qui a été conduit.

Ce rapport a été transmis à la directrice du laboratoire qui nous a fait part en retour de ses commentaires que vous trouverez ci-joint. Nous espérons que ces informations vous permettront de bien finaliser l'évaluation du laboratoire.

Restant à votre disposition pour de plus amples informations, je vous prie de croire, M. le Président, à l'expression de mes salutations respectueuses.

Le Vice -Président Recherche et Innovation

Paul Indelicato

Vice-présidence Recherche et Innovation
Tél. 01 44 27 20 09
www.upmc.fr

Developmental Genetics and Marine Models : UMR creation project (S. Mazan)

Comments on the AERES assessment (AERES delegate P. Couble, president D. Chourrout)

1. Assessment of the individual groups

We have no comments on the assessments of the DGeMM project teams and are of course happy of the very positive return from the committee.

2. Assessment of the unit

Concerning the unit project, we would like to stress several aspects, which were missed in the assessment and which reply to the criticisms of the committee.

2.1. Assessment of scientific quality and outputs

This section of the report makes a synthesis of the assessment of the individual groups but makes no mention of key questions such as the relevance of an expansion of the evo-devo community in Roscoff and the modalities to reach this goal in this case.

2.2. Weaknesses and threats:

The main weaknesses put forward are (1) the absence of scientific links between the applicants, (2) a risk of split between the MMA (Charrier) and Cock's groups and (3) to a minor extent, the overestimation of management issues. All these points are successively addressed below.

(a) Differences in scientific questions/model systems/methodologies between the applicant groups (MMA-Charrier and DEV-Mazan). There is no doubt that the model organisms studied by the two groups are phylogenetically distant and that the methodologies employed differ. This is actually also the case in many developmental biology units developing a wide range of model organisms from diploblasts or annelids to mammals, or from unicellular eukaryotes to algae, metazoans or green plants. In fact, the analysis of organisms undergoing pluricellular development in distantly related taxa leads to original questions and potentially extremely fruitful cross-fertilizations, as developed in (b) below. In our view, this is an opportunity rather than a weakness. We do not feel either that the differences in the technical aspects of experimental approaches can be a problem, as long as heavy infrastructures are not required. In contrast, we stress that the general rationale (use of non-conventional organisms chosen for their phylogenetic position, multidisciplinary approaches) and the scientific questions addressed by the two groups (morphogenesis, patterning, polarity) are strictly the same in different taxa. This is detailed in the written application (pp 4-5-6). These scientific convergences have been acknowledged by the association of the two groups (1) to the same items of the LABEX "DEVONET" ("Developmental Biology Integrative Network") project coordinated by E. Houliston (items "Polarity and axis specification" and "Morphogenesis") and (2) to a recent application to a PRES Sorbonne Université offer call, coordinated by S. Schneider-Maunoury, A. Carbone and S. Mazan ("Développement, évolution, adaptation: nouvelles approches, nouvelles questions").

(b) Absence of shared intellectual constructions. A relatively extended part of the written application was actually devoted to such a construction (p8). To summarize briefly, this scientific aspect of the project deals with the understanding of the basic cellular mechanisms (adhesion, chirality, cytoskeleton dynamics, cell communication and proliferation), which lie at the origin of developmental mechanisms of complex multicellular forms, and with the modalities of their recruitments in different eukaryotic taxa.

(c) Absence of potential synergies. In addition to the general conceptual aspects recalled above, the two groups also have complementary methodological skills, resulting in synergies and collaborations: use of Atomic Force Microscopy and modeling (physical and systemic approaches in which the MMA group is strongly committed and for which the early catshark embryo provides a suitable system); bioinformatics (taking advantage of the expertise of B. Billoud, MMA, in the catshark genome project coordinated by DEV and in transcriptomic analyses included in the DEV project); in situ hybridization (technique not yet available in *Ectocarpus* and in the MMA group, the DEV group being the only one in Roscoff with this skill). Several of these aspects have been cited in the written application or in the ppt presentation of the UMR project.

(d) Absence of collaborations and common publications. Indeed we chose to insist on international rather than local collaborations in our application. In fact, the complementary skills cited above (point c) have already led to active on-going collaborations. These have been realized through the submission of a joined ANR project of the DEV and MMA groups in January 2012 ("EVOMORPH"). A manuscript co-signed by the two groups will also be submitted in the coming weeks (Characterization of the BMP gradient in the catshark embryo, including a quantification conducted by B. Billoud, MMA).

(e) Risk of split between the M. Cock and MMA (Charrier) groups. In our view, the discussions that have taken place between these two groups and the DEV team in the past two years have certainly not been detrimental to the relationships between the former two. The interactions between these groups have not either been impacted by the decision of the Cock and Charrier groups to associate to different unit projects. For instance, M. Cock has recently given access to the BAC library constructed by his group in a collaborative work. Conversely, B. Charrier has associated M. Cock to the European COST project submission, which she is coordinating. To further take this point into account and amplify, whenever applicable, these interactions, we are currently starting regular meetings between the DEV and MMA groups, to which M. Cock's group will be systematically invited. We feel that such meetings in a small community speaking the same scientific language and sharing related interests is the most appropriate way to enhance interactions.

(f) Requirement for common projects in a competitive context of external funding. The association of the DEV and MMA groups in a PRES Sorbonne-Université call for proposal and in an ANR submission has been cited above. Beyond this point, we feel that in the very basic evo-devo field, associations between groups should not be forced. We have chosen an alternate way, described in the written application, to deal with the limitation of funding sources cited by the committee: reallocate CNRS and UMPC recurrent funding to ensure the viability of each group, taking the contracts awarded into account, which preserves both the attractiveness of, and the solidarity within the unit (p12 of the written application).

(g) Overestimation of the importance of management aspects. Beyond the scientific aspects detailed above, we think that in an emerging structure, addressing management aspects, including governance rules and policy of resource allocation, is important to ensure that the cohesion of this community be maintained beyond scientific aspects. These points also impact scientifically important aspects (recruitment of novel groups, support to innovative and risky projects).

In summary, contrary to the committee conclusions, we are convinced that the DEV and MMA groups share the same scientific background and are on the way to construct fruitful scientific interactions. They are also grouped by a strong commitment for an expansion of the evo-devo community in Roscoff. The quality and the position of the two groups, as assessed by the committee, is undoubtedly an essential factor for the success of this project. We regret that the key questions about the relevance of this project in Roscoff and the modalities to fulfil it, were not addressed by the committee.