LBDV - Laboratoire de Biologie du développement de Villefranche-sur-Mer

Rapport Hcéres

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

Department for the evaluation of research units

AERES report on unit:

Laboratoire de Biologie du Développement de Villefranche sur Mer

LBDV

Under the supervision of the following institutions and research bodies:

Université Paris 6 - Pierre et Marie Curie

Centre National de la Recherche Scientifique

November 2012

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

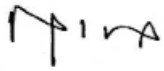
Research Units Department

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, its in-house teams received the following grades:

- Grading table of the unit: Laboratoire de Biologie du Développement de Villefranche sur Mer

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

- Grading table of the team: Cniderian developmental mechanisms

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

- Grading table of the team: Cell cycle in eggs and embryos

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

- Grading table of the team: Cell fate

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

- Grading table of the team: Regeneration and Totipotency

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

- Grading table of the team: Evolution of intercellular signalling in development

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

- Grading table of the team: Genome and protein evolution in animals

C1	C2	C3	C4	C5	C6
NN	NN	NN	NN	NN	B

Evaluation report

Unit name :	Laboratoire de Biologie du Développement de Villefranche sur Mer
Unit acronym :	LBDV
Label demandé :	UMR
Present no.:	UMR 7009
Name of director (2012/2013) :	Ms Evelyn HOULISTON
(2014/2018) :	Ms Evelyn HOULISTON

Expert committee members

Chair :

Mr Eric THOMPSON, SARS International Centre for Marine Molecular Biology, Bergen, Norvège

Experts :

Mr Detlev ARENDT, Developmental Biology Unit, EMBL Heidelberg, Allemagne
Ms Renata BASTO, Institut Curie Subcellular Structure and Cellular Dynamics, Paris, Representative of the CoCNRS
Mr Andreas HEJNOL, SARS International Centre for Marine Molecular Biology, Bergen, Norvège
Mr Thomas LAMONERIE, Institut Valrose de Biologie, Nice, Representative of CNU
Mr Patrick LEMAIRE, Centre de Recherche de Biochimie Macromoléculaire (CRBM), Montpellier
Ms Nancy PAPALOPULU, The University of Manchester, Manchester, GB
Ms Nadine PEYRIERAS, Institut de Neurobiologie Alfred Fessard, Gif sur Yvette
Mr Gary WESSEL, Department of Molecular and Cellular Biology & Biochemistry, Brown University, Providence, USA

Scientific delegate representing the AERES:

Mr Pierre COUBLE

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

Mr Laurent KODJABACHIAN, CNRS
Mr Bertrand MEYER, UPMC

1 • Introduction

History and geographical location of the unit:

The UMR7009 "Biologie du Développement", CNRS/UPMC (LBDV), at the Observatoire Océanologique de Villefranche-sur-Mer (OOV) was renewed in 2009. This followed a succession of research units focused on basic biology with a specialization in using marine organisms in studies of cellular and developmental biology for more than 30 years. Marine stations have a particular role to play in these subjects due to the richness of phylogenetic diversity that facilitates comparative analyses of biological processes in animals belonging to distantly separated phyla. The abundance and transparency of many planktonic organisms and the accessibility of their gametes and embryos further support this activity.

The period 2009-2012 saw the LBDV undergo important transitions both in terms of the composition of the scientific teams and the physical infrastructures. Four key researchers who exerted a strong impact on the laboratory since its creation have, or will soon, retire, and have been replaced by new team leaders. Significant infrastructure investments by the UMR and the OOV have allowed important renovations and expansion of laboratory facilities and alleviated space constraints that were a serious problem identified during the previous evaluation.

Management team:

The laboratory is headed by Ms Evelyn HOULISTON. Regular meetings are organized with the PIs and the personnel in charge of the laboratory platforms. Though there is no established laboratory council, three assemblies with all the staffs are organized at regular occurrence, three times a year.

AERES nomenclature:

SVE1-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	1	1	1 (100%)
N2: Permanent researchers from Institutions and similar positions	12	14	11 (100%)
N3: Other permanent staff (without research duties)	15	15	
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)			
N5: Other researchers from Institutions (Emeritus Research Director, Postdoctoral students, visitors, etc.)	4		
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6	32	30	12

Percentage of producers	***100 %***

Unit workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	15	
Theses defended	9	
Postdoctoral students having spent at least 12 months in the unit*	4	
Number of Research Supervisor Qualifications (HDR) taken	3	
Personnes habilitées à diriger des recherches ou assimilées Qualified research supervisors (with an HDR) or similar positions	3	5

2 • Assessment of the unit

Strengths and opportunities:

- High quality of research with very good publication record
- Coherent and feasible Strategic Project with established and increasing axes of synergies between teams
- Well conceived rationalization of common resources with notable strength in multi-dimensional imaging technology (both in research and education)
- Strong presence in international marine biological resource infrastructure projects and participation in international training networks
- Very good record of public outreach
- Internationally visible and original research niche in molecular and cellular developmental research using (and developing) secondary marine models to offer evolutionary perspectives on developmental processes and gene regulatory networks
- Expansion of methodological portfolio to include large-scale approaches.

Weaknesses and threats:

- Chronic low critical mass
- Low numbers of postdocs and PhD students compared to the scientific reputation of the LBDV
- Increased funding risks in current financing context because of sole focus on pure basic science with few immediate perspectives for commercial exploitation of findings
- Perceived thematic isolation at the OOV and relative isolation from other institutions of higher education
- Risk in cases of some teams of overly ambitious projects, insufficiently framed hypotheses and dispersion both with respect to questions posed and models deployed.

Recommendations:

- Make efforts to improve the interface between the LBDV and the OOV from both research and administrative perspectives
- Seek to consolidate teams through additional recruitment. Additional “enseignant-chercheur” recruitments with the LBDV should be prioritized
- Seek more pre-Masters level opportunities through teaching, workshops etc. to interact with students earlier in their cycle with a view to augmenting PhD recruitment.
- Explore research opportunities at the interface with the OOV to diversify funding possibilities
- Ensure adequate mentoring opportunities for recently arrived team leaders
- Establish priorities among projects and identify the questions and hypotheses that offer the most original perspectives and reduce competition with research in well-established models with larger genetic toolkits.

3 • Detailed assessments

Assessment of scientific quality and output:

The laboratory has maintained its status as an international reference institute for Marine Molecular Developmental Biology and retains its high standing among marine research stations in France and Europe. The Research Director has successfully navigated a transition period, which has seen the retirement of key founding members of the Laboratory and the move of one group to the nearby University of Nice. This has meant the fusion of some of the scientific and technical staff of these teams with the three remaining existing teams or their association with four new team leaders who have been proactively recruited during the last few years of the evaluation period.

There exists a clearly defined focus in basic research at cellular, molecular and genome level studies of more classical marine models, the sea urchin and the ascidian, Ciona intestinalis, as well as developing emergent models such as the colonial ascidian Botryllus, the cnidarian Clytia hemispherica, and the solitary ascidian Phallusia mammillata. The latter two models offer original perspectives in the study of maternal determinants of embryonic axis formation and in cell cycle regulation and its link to morphogenetic processes in oocytes and early embryos. These provide opportunities to solidify “brand” recognition of the laboratory. This is particularly true of Clytia, where rapid progress has established the laboratory as a seed site for the adoption of this performant experimental model by a number of other international laboratories. A very careful and systemic series of studies, combining quantitative morphological and functional genetic data to define the chronology of molecular signalling events that determine cellular identity in the neural plate during ascidian embryogenesis is also a noteworthy scientific highlight of very high standard.

The quality of the scientific production is well reflected in the publication output of the laboratory (2007-12) where 100 articles have appeared, of which 48 were placed among the most respected journals in cellular and developmental biology and 9 in journals with impact factor >10. This is commendable in that the output is based almost exclusively on secondary model organisms, and for some of these, general, and effort consuming, community resource development, is driven principally by the laboratory teams. While there is some variability from team to team, a solid majority of the publications at all levels contain laboratory members as first and/or senior authors. There is also a good representation of staff members on publications demonstrating productive national and international collaborations. The LBDV operates with a clear majority share of external funding, a further testimony to their quality and competitiveness.

Assessment of the unit's academic reputation and appeal:

The laboratory has an established and deserved academic reputation in marine developmental and cellular biology and is now taking well considered steps to expanding this niche reputation to more genome-scale approaches in addition. All research teams in the laboratory are active in national and international collaborations. Three ANR contracts were obtained in partnership with the UPMC in Paris and one PIC program partnership with Japan. They have played central roles in the establishment of the new UPMC Scientific Network, the André Picard Network, the DevoNet project and the EMBRC and EMBRC-FR projects federating marine stations across France and Europe. The latter projects are part of an important effort to produce marine biological resources, establish functional genetic approaches in emerging marine models, develop integrated molecular databases and improve marine research infrastructures.

The evaluation period has seen the satisfactory recruitment of 4 new team leaders and the international attractiveness of the laboratory is perhaps reflected in the observation that at present, none of the 7 current team leaders is of French origin. On the other hand, the recruitment of postdoctoral fellows and PhD students appears limited and not commensurate with the scientific quality of the laboratory despite some participation in European ITN networks. The laboratory is well represented through invitations to international conferences and has been involved in organizing an international meeting and running targeted workshops. Staff members have been recipients of the Prix Tregouboff in Marine Biology, the Coup d’élan pour la Recherche (Bettencourt Schueller), an EMBO award for Communication in Life Sciences and a CNRS Bronze medal. Laboratory members exhibit good participation in a reviewing capacity for a range of journals, including those in the upper echelons of cell and developmental biology. They also serve as experts on national and international grant applications but have more limited roles in journal editorial boards, principally in journals of modest to lower impact.

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

The research themes and the organisms that are studied lend themselves well to attracting a larger public audience and the laboratory has done a very commendable job of developing these opportunities. They have designed a mobile educational workshop permitting hands on experiences in understanding marine animal life cycles. They have created posters for public events and schools and have given public conferences as well as participating in public television and radio programs. They also receive students for one-week training sessions permitting an introduction to the research profession. Notably, the laboratory was also active in the Tara Oceans Expedition and has produced/is producing several multi-media products one of which has won a Panda Award for best short film. The retirement of one key staff member, who was particularly active in multi-media publicization of science, will present a challenge to the laboratory to maintain these efforts, which can only be ranked as very well above average for a research laboratory. The very basic research orientation of the laboratory has as yet not produced very significant economic opportunities or interactions.

Assessment of the unit's organisation and life:

The laboratory is organized in two separate buildings around a coherent theme of developing secondary marine models to provide a broader evolutionary perspective to respond to fundamental questions in molecular and cellular developmental biology. Although greatly improved since the previous evaluation, continuing space (and financial) constraints have driven a very active and well directed policy of rationalizing common resources and the laboratory has long had a strong tradition in developing strong common imaging platforms central to most of the research programs. This has now more recently been complemented by common informatics and bioinformatics resources and associated personnel, which are under continued development. Planned improvements in aquarium facilities should be completed as soon as possible to remain consistent with the ambitious multi-organism model research program, particularly in the housing of genetically modified animal lines. More negative aspects of the space constraints were raised in particular by the technical staff, citing a lack of confidentiality in offices, and cramped and outdated (though historically charming) facilities that can present safety risks.

Weekly internal seminars are held where all staff members are encouraged to present their experimental results at least once per year. External seminars are also organized with on average 15-20 invited speakers per year. Staff personnel are encouraged to access training opportunities permitting the acquisition of new skills and some have taken advantage of these. One area for improvement, remarked upon at several points during the site visit was the relatively poor organizational and scientific integration of the LBDV and the OOV, which share the same site. There was relatively little evidence of cross-participation in external seminars, research projects, education or sufficient clarity of communication in some administrative functions. For example the lack of an adequately functioning reception was cited for misdirected deliveries and visitors and on occasion the appearance of unannounced tourists in laboratory facilities.

An attractively organized website (http://www.biodev.obs-vlfr.fr/fr/le_laboratoire.html) is available to promote the activities of the laboratory though the extent to which individual teams articulate their activities is variable, partially attributable to the recent arrival of some teams. An effort to harmonize these features in the near future would be beneficial.

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

Laboratory members are involved in training via teaching at UPMC and other French and international Universities, supervision of postdoctoral fellows, PhD and Masters theses and an array of other trainees. There is one “enseignant-chercheur” attached to the LBDV and the laboratory would clearly benefit from increased representation within this personnel category. One of the team leaders is a partner in a Marie Curie ITN to provide graduate training in EvoDevo. Interviews with postdocs and students revealed a large degree of satisfaction with their supervision and ease of access to team leaders was cited though they did regret that students were not more numerous at the station. The high cost of living in the region surrounding the laboratory was mentioned as a potential barrier to recruitment of students and efforts to enhance accommodation opportunities at the station could contribute to increased recruitment. Since much of the teaching activity is focused at the Masters level, team leaders are encouraged to seek additional opportunities for teaching earlier in the academic career of students as a further possible measure to enhance recruitment of PhD candidates.

Assessment of the five-year plan and strategy:

Recent years have seen a substantial turnover in team leaders (>50%) principally through retirement, but also through mobility. Nonetheless, the remaining pre-existing teams embody very well the core scientific focus of the laboratory on basic molecular mechanisms in cell and developmental biology employing excellent skill sets in embryo micromanipulation and multi-dimensional imaging. The combinatory use of existing, emerging and quite new marine models allows inclusion of an important evolutionary perspective and is a central element of originality in the proposed project. The replacement of departed team leaders at the dawn of the new project period has been astutely seized as an opportunity to incorporate additional relevant marine models and, following recommendations of the previous 2007 evaluation, to upgrade from single-gene to more genome-scale analyses, particularly with respect to the dissection of gene regulatory networks. This has been supported by the recruitment of a team leader specializing in bioinformatics and the increasing development of large-scale resources around selected marine animal models used by the laboratory. Thus, there is an evident strategic coherence in the project.

Numerous synergies exist between teams and there is substantial promise that these will be effectively exploited. These include exploration of Wnt/Fz/ß-catenin signaling as a conserved mechanism for setting up germ layer specification and axis formation, cell cycle regulation of spindle positioning and oriented cell divisions and the comparative assessment of gene regulatory networks in development. These synergies are reinforced by careful plans to consolidate and improve common computing and imaging platforms and expansion of common services, particularly with respect to bioinformatic services. Operations are anticipated to be further enhanced through additional space expected to be made available to the LBDV on the OOV site during the coming 5-year period.

The only threat identified in the self-assessed SWOT was the sole focus of the laboratory on basic research in an unfavorable context of national funding in this area. Indeed, there was little evidence of articulation between fundamental and applied research in the activity report or the 5-year project proposal. One possible suggestion to begin to at least partially parry this risk would be to enhance interaction with the OOV, which in part, has a more applied research profile and on-site oceanographic expertise. Opportunities in transcriptomics, metabologenomics and metagenomics in the rapidly expanding arena of environmental genomics could be considered as a possible and productive interface. As noted in several of the individual team reports, the committee also identified some further elements of risk in the project: the potentially overly ambitious and overly diverse objectives in elements of the project associated with some of the newer teams and the possibility of too much of a potential service component for the very recently recruited bioinformatics team. Mentoring of the new team leaders and open discussion towards elaboration of more specific hypotheses and focusing of objectives (and in some cases models) is encouraged.

The SWOT analysis was an accurate and self-aware assessment of the LBDV. Successful integration of the new teams and overcoming the chronic low critical mass through improved recruitment of students, postdocs and permanent staff will be important in optimal accomplishment of the 5-year plan. Globally, the project is rated as quite feasible and the committee anticipates a period of continued production of interesting and high quality output from the LBDV.

4.1 • Team by team analysis

Team 1 : Cniderian developmental mechanisms

Name of team leaders: Ms Evelyn HOULISTON and Mr Tsuyoshi MOMOSE (co-head at the next 5 years plan)

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	2	2	2
N3: Other permanent staff (without research duties)	1,5	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	6,5	5	3

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students	2	
Theses defended	2	
Postdoctoral students having spent at least 12 months in the team	2	
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:

Team 1 has pioneered a highly promising novel model organism, selected highly original topics and published their work in excellent journals.

The main originality of the work stems from the choice of the model organism studied by this team, the cnidarian Clytia hemispherica. Cnidarians form a very diverse, yet understudied, taxon. The model, which the group has developed from scratch in collaboration with the team of Mr MANUEL (UPMC, Paris), is phylogenetically distant from the other two main cnidarian models, hydra and the sea anemone Nematostella vectensis. Team 1 showed that Clytia has very appealing experimental features, including the daily availability of transparent embryos throughout the year, the ability to culture clonal, partially inbred, lines and the striking ability of dissected gonads to respond to lights and to sustain several cycles of oocyte maturation. The group currently coordinates the sequencing of the Clytia genome at Genoscope (a difficult project worsened by poor communication between Genoscope and academic labs) and has also produced transcriptomics datasets with which they characterize trans-splicing in Clytia. Alongside tool and protocol development, Team 1 pioneered over the past 7-8 years Clytia embryology and oogenesis studies. Major results (IF≥10; papers driven by the team) include the identification of major localized maternal determinants of embryonic axis formation, and the demonstration that the Mos kinase plays conserved roles during eumetazoan oogenesis. These and other high quality studies have largely contributed to the adoption of Clytia by other international labs. It is overall striking that a small research team could make such rapid progress, making best use of existing or emerging technologies, and on a broad variety of topics.

Assessment of the team's academic reputation and appeal:

The team is steering the genome project of Clytia, the devonet national initiative and plays a key role in several international networks. Both PIs have been invited to international conferences.

In addition to heading a CNRS/UPMC research unit, one of the co-heads is leading the Clytia genome project and has been involved in numerous international collaborations. The group has been involved in several highly selective European ITN networks.

The second co-head was recruited to CNRS after an initial post-doc in the group. The activity of the team would benefit from an increase in the number of its members.

Both co-heads have been regularly invited to international and national meetings and their results have been published in high quality specialized (eg Development) or generalist (Current Biology, PloS Biology) journals.

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

The group is carrying out high-level basic research, upstream of potential applications. They are strongly involved in promoting public understanding of science.

Assesment of the team's organisation and life:

This is a small team with reduced needs for strong coordination. Care should be taken that the scientific interests of the 2 co-heads do not drift apart. It is remarkable that the team’s activity did not suffer when one of the PIs became head of unit.

Assessment of the team's involvement in training through research:

The group is strongly involved in successive European ITN networks and in national teaching in Paris and Nice.

One of the team members is an assistant professor with UPMC, in charge of the coordination of UPMC masters-level teaching at the OOV, and additionally teaching in Paris. One of the PIs is also actively teaching.

Assessment of the five-year plan and strategy:

The team presented a large number of interesting to very interesting projects. The committee is confident that they will, as in the past, prioritize these projects when needed and go for those of highest impact.

The project is mostly in the continuation of past work, with one novel, and promising, topic explored: the triggering of oocyte maturation by light. The proposed work is well described, feasible and interesting although it appears very broad for such a small group. Some focusing on major questions may lead to an even higher success of the team. As the model organism becomes more recognized in the community, the team should take care not to extend technological/methodological developments beyond what it really needs for its projects (RNAi, database). While replicating in Clytia what has been done in other systems will help understanding the diversity of developmental mechanisms in cnidarians, there is a risk that it may only be of interest to a restricted scientific community. Transduction of light during oocyte maturation or the role of the Wnt gradient during planarian regeneration constitute original and interesting topics of general interest to a broader community of developmental biologists.

Conclusion:

- ***Strengths and opportunities***
  - The model system used, which was pioneered by the team and 13 worldwide groups now use the clone provided by the team. This is a true success story
  - International reputation and good integration in national and European networks
  - Very high quality original work
  - Project technically feasible with an adequate balance between safe groundwork and more risky original projects.

- ***Weaknesses and threats***
  - Many projects in a small group bear the danger of spreading too thin
  - Questions addressed may not always have a high gain/risk balance.

- ***Recommendations***
  - Make sure projects are prioritized
  - Identify general questions to which the model offers an original viewpoint, thus avoiding competition against models in which genetic tools are more developed, or reproduction of what is known elsewhere.

4.2 • Team by team analysis

Team 2 : Cell cycle in eggs and embryos

Name of team leader : Mr Alex MCDOUGALL

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	4	4
N3: Other permanent staff (without research duties)	1	1,5	
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	3	6,5	4

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Team workforce		
Doctoral students		
Theses defended	2	
Postdoctoral students having spent at least 12 months in the team	3	
Number of Research Supervisor Qualifications (HDR) taken		1

• Detailed assessments

Assessment of scientific quality and outputs:

Team 2 investigates the mechanisms that control accurate chromosome segregation during female meiosis in ascidian and mouse oocytes and cell divisions timing and orientation in early development of ascidian embryos. These questions are of general importance in developmental biology.

1) Regulation of chromosome segregation during meiosis:
The team characterized processes dependent on Mos/MAPK pathway that control polar body extrusion. In addition, the team identified 10 new proteins and collaborates with two mouse groups to investigate the role of these proteins across species.
2) Timing and orientation of cell divisions in early development:
The control of cell division timing and asymmetry during embryogenesis and morphogenetic processes is a major issue in developmental biology. The team has outstanding strategies for an in depth understanding of underlying mechanisms. The choice of Phallusia mammillata as a model organism is remarkable.

The ascidian model (Phallusia mammillata) is very relevant for cell biology approaches in vivo. Its use is still quite original as very few laboratories in the world take advantage of it although it is now quite well established. This model organism was first investigated by the former team of C. Sardet, and it is now a major asset of the laboratory. There are several important issues that make this model organism well chosen for the team's scientific objectives. It is amenable to gene silencing (morpholino injection), exogenous RNA expression (which allows the expression of GFP tags), and large amounts of eggs can be produced and these are transparent, which make them remarkably well suited for in vivo microscopy analysis. In addition, Team 2 takes part in a community effort to sequence and annotate the Phallusia mammillata's genome. They have also established collaborations to generate tools required to extend their studies, such as Y2H libraries.

Between 2007 and 2012, Team 2 has published 16 articles. Several of these are in excellent journals such as Development and Journal of Cell Science. It is worth noticing that studies in uncommon model organisms, such as Phallusia mammillata, are often viewed as less attractive for a large audience than studies performed in more widely used organisms such as mouse, C. elegans or Drosophila. We therefore consider that the publications of the team's work in these journals demonstrate its high quality and a very significant contribution to the field of developmental biology at large.

Assessment of the team's academic reputation and appeal:

Team 2 has an excellent academic reputation. The leader of Team 2, has been invited to five international meetings as a speaker in the past few years and participated in PhD theses (2 in the UK and one in France) and HDR juries. In addition, he is involved in three master courses (UPMC and Nice University) and is a member of a master program steering committee in Nice University.

The team leader has co-organised international meetings in Villefranche-sur-mer, thus contributing to the laboratory national and international visibility.

The committee made a number of suggestions to help the Team as well as the whole laboratory to increase its appeal for PhD students and post docs.

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

Not applicable

Assessment of the team's organisation and life:

Up to recently, Team 2 comprised 2 CNRS staff scientists (one being the PI), one technician and trained three post-docs. The Team is now increasing by gathering two others scientists and an technicians formerly in the Team of C. Sardet, now retired. The Team is thus well secured with a relatively large number of permanent positions. The presence of 4 resaerchers positions in the team seems to be well managed by the leader in terms of career progression and publications authorship.

The committee concludes on a remarkable aptitude of the team leader both on the scientific and human resources sides, to achieve ambitious goals.

Assessment of the team's involvement in training through research:

The team insured the training through research of several post docs and master students. The Team crucially needs to recruit PhD students. The team's leader has now a strong involvement in teaching with his contribution to the establishment of a new Master2 course at Nice University. The committee thus acknowledges that a great effort is made to attract PhD students.

Assessment of the five-year plan and strategy:

The team pursues a number of projects all flowing in the same direction of research. The team's strategy to decipher the mechanisms of cell cycle control and cell division in embryogenesis with Phallusia mammillata as the main model organism is thus fully coherent.

Conclusion:

- ***Strengths and opportunities***

The major strength of the team is the strong background and expertise of its permanent researchers and technical staff that have been establishing an original methodology in the field. The team is thus based on solid grounds with also collaborations at the national level contributing to the visibility of the team and its contribution to issues of interest of the Biology community at large.

- ***Weaknesses and threats***

Internal collaborations, within the unit, have not been described, although they would make particular sense for the projects related to spindle positioning and centrosomes asymmetry. Such collaborations would strengthen the strategies of the unit and also contribute to take findings and conclusions to a deeper level.

The recruitment of PhD and Master students in the near future for this Team, as well as more generally for the whole unit, is highly expected. A clear response to this problem was provided both by the Team and the unit and so, hopefully, within the following years, the recruitment of students will bring the required renewal to maintain scientific research at the cutting edge.

- ***Recommendations***

The committee suggests that the members of Team 2 also put an effort to disseminate more largely their findings and their potential impact to the developmental biology community. The importance of their strategies and achievements should more significantly impact research on other model systems, thus increasing the Team visibility.

4.3 • Team by team analysis

Team 3 : Cell fate

Name of team leader : Mr Hitoyoshi YASUO

Workforce

Team workforce	Nombre au 30/06/2012	Nombre au 01/01/2014	2014-2018 Nombre de produisants du projet
N1: Permanent professors and similar positions			
N2: Permanent EPST or EPIC researchers and similar positions	2	2	2
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		
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6	5	3	2

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014
Doctoral students		
Theses defended	1	
Postdoctoral students having spent at least 12 months in the team	2	
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 team's research focuses on an exciting area of current Developmental Research, which is the interplay between cell fate specification and cellular phenotypes in the framework of an entire developing organism. For this, the team leader and his colleagues have chosen the ascidian Ciona intestinalis, which exhibits a simple and experimentally accessible variant of chordate development. While many research groups targeting similar questions work on Drosophila or Caenorhabditis, the team has ventured into a relatively new and unexplored marine invertebrate model, which will present more technical challenges but also promises to be highly rewarding as it is phylogenetically much closer to the vertebrates.

The research is highly original not only with regard to the choice of model system, but also in terms of the team's systemic approach to obtain a comprehensive view of development combining functional genetic and quantitative morphological data. The team is interested in the direct link between molecular pathway and cellular event, be it a shape change or spindle orientation.

Assessment of the team's academic reputation and appeal:

Over the years, the team has built an excellent reputation in the comparative development field. In the small but scientifically strong Ciona community, the team is one of the key players and has gained a strong scientific reputation. It has produced three Development papers in the evaluation period, which is a very solid outcome for a relatively small team.

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

Does not apply. The team carries out high-level basic research mostly upstream of societal interactions.

Assesment of the team's organisation and life:

The team's coordination and collegiality is highly appreciated. During the visit the team has proven to benefit from a vital discussion culture and well-organized structure.

Assessment of the team's involvement in training through research:

High-level training through research in a small team.

Assessment of the five-year plan and strategy:

The group presents four projects that each relate to their overarching goal of a comprehensive understanding of ascidian neural development. Their first project aims at investigating neural specification in the ascidian. It builds on the observation that only those cells with the largest area of surface contact with vegetal cells adopt a neural fate, indicating a quantitative threshold response producing a binary qualitative outcome. To test this, a biochemical approach will be followed exposing cells to different FGF ligand doses and scoring the cell fates (via Erk activation) in a dose-response curve. This project is highly original and may provide a new paradigm for the translation of quantitative to qualitative information in animal development.

The second project aims at elucidating the enigmatic Wnt5-Ryk signalling that appears to specify the notochord and neural tube precursors, turning on zicL. It is planned to drive expression of tagged Ryk receptors, followed by co-immunoprecipitation of Ryk-associated protein, to gain first insight into downstream players of this novel non-canonical mode of Wnt signalling. The last two projects address the question of how cellular specification is implemented morphologically, by the orientation of mitotic spindles for directed cell division. One paradigm will be the differential orientation of spindles in the notochordal versus neural sister cells of the NN (notochord/neural) lineage. Preliminary observations indicate that the orientation of the spindles is a direct consequence of cell shape and research efforts will accordingly focus on elucidating this link. In another project, the oriented cell divisions of epidermal cells will be assessed. The team plans to use laser knives to investigate the importance of cellular substructures such as membraneous extensions or interphase microtubules. Finally, the team plans to solve the lineage of neural cells to large extent, as a prerequisite for further investigations on neural cell fate specification. Again, the panel was impressed by the originality of the team's plans and is very confident that these will lead to excellent output.

Conclusion:

- ***Strengths and opportunities***

The Yasuo/Hudson group has built up unique expertise in the field of cellular specification during development of the ascidian Ciona intestinalis. As a result, it is obvious - from the report and from the presentation - that a huge variety of highly promising approaches will be followed in the next period.

The biggest strength of the group is its scientific originality and a good search image for interesting new topics for which the team is to be praised, as this appears to be an inexhaustible resource for their future work.

Also, the technical proficiency of the group is very high.

- ***Weaknesses and threats***

No obvious weaknesses. The small size of the group and the low number of PhD student is a threat, as a critical mass of researchers always has to be maintained for scientific continuity.

- ***Recommendations***

The principal investigators are encouraged to follow up on the highly interesting topics that they have developed with their previous work and that they have presented in their outlook section. No specific recommendations/alterations to the plan.

4.4 • Team by team analysis

Team 4 : Regeneration and Totipotency

Name of team leader : Mr Stefano TIOZZO

Workforce

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
N1: Permanent professors and similar positions			
N2: Permanent EPST or EPIC researchers and similar positions	1	1	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.)	1	1	
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6	3	3	1

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

• Detailed assessments

Assessment of scientific quality and outputs:

The team 4 leader arrived to the unit 2.5 years ago. He spent significant time in renovation and animal husbandry set up – but is now fully functional. The team 4 leader had a productive postdoctoral career in the laboratory of a leader in the field of stem cell regulation in the process of regeneration, using the colonial ascidian Botrylus schlosseri as a model – the same animal he is using in his own team. The areas of stem cells and regeneration are each very exciting directions for research on their own, much less combined by this team leader. We therefore think the work could be of high impact and potentially transformative in light of application to other animals, and potentially to humans. The Team leader lists 8 publications since 2007, in which he is first author, or co-first author on all except one. The publications are overall in excellent quality journals, including Development, and Developmental Biology, and one recent paper appears to be from his own team. Thus, not only is his team now set up, but it appears to be already productive. In the midst of training new students this is highly commendable.

Assessment of the team's academic reputation and appeal:

The team leader is a very well trained, newly established investigator working on an area of great potential. It is anticipated that his reputation and that of his lab will increase dramatically in the near future.

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

The team leader has engaged already in the broader impacts of scientific research. He has spoken at International conferences, been a reviewer for manuscripts of a variety of journals, is mentoring two graduate students, and has hosted visiting international researchers in this lab. This trajectory appears to be strongly directed to a broad and impactful interaction outside of his own team environment.

Assesment of the team's organisation and life:

Not applicable. The team is currently small and newly assembled. Therefore we are unable to assess this aspect of the team leadership.

Assessment of the team's involvement in training through research:

Not applicable.

Assessment of the five-year plan and strategy:

The PI has 8 projects ongoing in his team. They each are very exciting, have excellent potential for high impact results, and have an overlapping theme that very well may build upon each other. However, the number of projects is a matter of concern, and the 5 different animals, is overly ambitious. The collaborations in the lab are important – but they will undoubtedly dilute the efforts on any one project area. With the small team it is a concern that the projects are spread too thin and result in only superficial progress. The team leader lists several collaborators who are expert in these areas, but it is possible that less will be accomplished in detail and will result in decreased impact. It is therefore important to prioritize – and it is not sure that working on planarians will have as unique a contribution as some of the other projects. It is advised to focus on the animal the leader was well trained on, colonial ascidian, and as his team grows to acquire new directions as his team allows.

Conclusion:

- ***Strengths and opportunities***

- Quality of the training, use of the colonial ascidian, excellent topic/questions

- Progress is already being made

- Potential for an excellent niche in the Station.

- ***Weaknesses and threats***

- Overly ambitious set of projects.

- ***Recommendations***

- Prioritize the project and reduce/remove the planarian project for now

- The team leader should build a base with his strength – the planarian is new to him and will take a great deal of effort/time, and the field is becoming very competitive and not conducive to this build-up right now.

4.5 • Team by team analysis

Team 5 : Evolution of intercellular signalling in development

Name of team leader : Mr Michael SCHUBERT

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	
N3: Other permanent staff (without research duties)		2	
N4: Other professors (PREM, ECC, etc.)			
N5: Other EPST or EPIC researchers (DREM, Postdoctoral students, visitors, etc.)		2	
N6: Other contractual staff (without research duties)			
TOTAL N1 to N6		6	

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

• Detailed assessments

Assessment of scientific quality and outputs:

The working hypothesis of Team 5 is that the elaboration of interactions of a handful of signaling pathways is responsible for the diversification of development during deuterostome evolution. This group focuses specifically on the evolution of wnt and RA functions in various deuterostomes, which were chosen to represent the origin of deuterostomes (sea urchin), the origin of chordates (amphioxus) and the origin of vertebrates (lamprey).

The team 5 leader has published 20 original papers and 7 book chapters/reviews in the period 2007-2012. This is an excellent output for the discipline of evolutionary developmental biology. Many of the papers represent collaborative efforts, but there is sufficient number of first or last author papers (5) for the output to be deemed excellent. It is noteworthy that a number of papers have been published in non-specialist, and often high-impact, biological journals (such as Dev. Biol., PNAS, Curr. Biol., PLoS One, Genome Res), indicating the wide appeal of the work to the international community of biologists. The work of this group is funded by 2 grants until the end of 2014, possibly until the end 2015. Writing of additional grant proposals has been initiated.

Three future projects (FP) are proposed:

FP1 : Plasticity of the early developmental program in chordates (led by M. Schubert). In this project, they will seek to identify which features of developmental programmes are stable and which ones are subject to variations in evolution. To achieve this, they will use comparisons between the genomes of Amphioxus and vertebrates but also between 3 different Amphioxus species. Then, this information will be compared to transcriptomic data, aiming to enable a functional interpretation of the genomic findings. While the experimental design was clear, it was less clear what type of analysis will be done to derive conclusions pertinent to the stability or variability of biological features. For example, it was not clear how quantitative differences will be dealt with.

FP2. Canonical wnt signaling through time and space: endoderm versus mesoderm in sea urchins (led by J. Croce). In the second future project, it is proposed to investigate the roles of nuclear beta-catenin and Delta/Notch signaling in micromeres and macromeres of the early sea urchin embryo, including the time period of their requirement. Team 5 plans to do a differential expression screen by transcriptomic sequencing to look for target genes of canonical wnt and Delta/Notch signalling. It is planned to do this at a single cell resolution and to map this onto cell lineage data.

FP3. Evolution of intercellular patterning mechanisms in deuterostomes : differential deployment of wnt and RA signaling in sea urchins, amphioxus and lamprey development. Here, the aim is to describe in detail the tissue specific functions and interactions of wnt and RA signalling in endoderm, mesoderm and ectoderm (incl. neural) in the three proposed animal models, through microinjection and pharmacological experiments, combined by transcriptomic analysis. They have teamed up with external collaborators in France and the UK, who will do similar experiments in the mouse and frog.

While it is clear that these projects will generate large datasets, the specific hypotheses, that would provide an intellectual framework for the interpretation of the data, were not presented in detail in the written report. To some degree, these concerns were alleviated during the discussion that followed the presentation.

Assessment of the team's academic reputation and appeal:

The team 5 leader is the Treasurer and Meetings organiser of the “European Society of Evolutionary Developmental Biology”. The team leader is also an Academic Editor of PLoS One and a member of the Editorial Board of the Open Evolution Journal, The Scientific World Journal, Developmental Biology Journal and Dataset Papers in Biology.

Invitations to International conferences are modest at present, which is in accord with the head being a young group leader. Importantly, they do show an upward trend in 2010-2012 with invitations to Germany, Italy and Brazil.

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

Not applicable

Assesment of the team's organisation and life:

The team has 4 permanent members (the team Leader, researcher from the CNRS; another full time CNRS researcher; and one engineer et one technicians CNRS), 1 post-doc, 2 PhD students and 3 master students. For the most part, it is too early to assess the organisation and life of the team, since the team leader arrived in October 2012, only one month before the meeting of the evaluation committee. He came across as a dynamic and enthusiastic leader. The scientific objective of the team is logical, original and ambitious. This group incorporates an experienced team member. An identifiable future objective would be to increase the coherence of the team, by incorporating better her work into the overall objectives of the lab.

In terms of premises, we were able to visit the laboratory and office space of the team leader, which were under refurbishment at the time of visiting. We are reasonably confident that when fully refurbished, the premises will be appropriate for the team's scientific activities.

Assessment of the team's involvement in training through research:

The group has 2 PhD students and 3 Masters students, which is excellent. However, it is too early to assess the effectiveness of student guidance and quality of supervision at this stage.

Assessment of the five-year plan and strategy:

One strength of this team is that the choice of the model organisms is logical and unique for addressing the research question. The proposed work over the next 5 years is original and ambitious. There is a strong assembly of external collaborators. The team leader is dynamic and enthusiastic and he has put forward an ambitious plan of grant applications. One weakness of the team is over-reliance on collecting large-scale sequence datasets. Without well-elaborated specific hypotheses, these may be difficult to interpret. However, the next 5 years will be a unique opportunity for Dr. Schubert's team to address evolutionary stability of developmental pathways. The leader has several 2011 publications, which will result in increased external visibility. Potential threats are an inability to interpret large sequence datasets in a meaningful way and a proposal, which may be over-ambitious for this team.

Conclusion:

- ***Strengths and opportunities***

The underlying logic in the choice of organisms

The originality and ambition of the proposed work

The assembled collaborations

Pro-active grant application plan

Dynamic and enthusiastic leader.

- ***Weaknesses and threats***

Lack of specific hypothesis

Over-reliance on large scale sequence datasets

Inability to interpret large datasets, over-ambitious proposal.

- ***Recommendations***

Focus research question

Elaborate the research hypothesis

Capitalize on recent papers to increase grant funding

Increase number of last author papers.

4.6 • Team by team analysis

Team 6 : Genome and protein evolution in animals

Name of team leader : Mr Richard COPLEY

Workforce

Team workforce	Number as at 30/06/2012	Number as at 01/01/2014	2014-2018 Number of project producers
N1: Permanent professors and similar positions			
N2: Permanent EPST or EPIC researchers and similar positions		1	1
N3: Other permanent staff (without research duties)		0,5	
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		1,5	1

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

• Detailed assessments

Assessment of scientific quality and outputs:

The team 6 leader has not started yet and will begin early 2013 at the station. The team leader's expertise is in the field of comparative genomics in marine animals and protein evolution and his previous research has focused partly on human genomics and partly on comparative genomics in animals. The objectives in the field of comparative genomics are to solve phylogenetic relationships by finding taxon-specific genomic signatures in e.g. gene content and protein motifs and their role in the evolution of taxon-specific body plan characteristics. The research objectives in the field of comparative genomics are timely and of great relevance to the field given the difficulties of phylogenetic placement of some important taxonomic animal groups and the unsolved questions how changes in genomes are connected to morphological changes. The previous research also comprises the development of bioinformatics tools and pipelines for comparative genome analysis of animals (e.g. POPE), which are useful contributions to the community. The team leader has worked primarily in very well chosen collaborations.

Assessment of the team's academic reputation and appeal:

The team leader has published in both areas a series of important publications with high impact in their field (although only a minority as leading author, which leaves the contribution to the projects unclear). The team leader is internationally recognized.

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

Not applicable

Assesment of the team's organisation and life:

Not applicable

Assessment of the team's involvement in training through research:

Not applicable

Assessment of the five-year plan and strategy:

The field of evolutionary and comparative genomics is dynamic taken the recent progress in sequencing technologies and this recruitment will be of great benefit for the research conducted in the unit over the next five years.

The research objectives are of high importance, timely and relevant and use cutting edge methodology. The outcome of the planned analyses of the genomes of animals will be of high relevance to the field. The team leader is involved in the sequencing and analysis of interesting animal groups. The intend to analyze and map taxon specific genes and losses across the animal tree of life will lead to important insights in the dynamics of these processes during evolution.

The identification of conserved small protein motifs that are specific to some taxonomic groups will be of great insights and might deliver additional support of some taxonomic relationships.

The approach to identify Gene Regulatory Networks of developmental processes solely by bioinformatic approaches is an interesting approach but since other parameters such as transcription factor concentration, binding affinities and co-regulators play also roles in such dynamic processes the impact has to be seen with some doubt.

Conclusion:

- ***Strengths and opportunities***

The proposed research is of high importance to the field and cutting edge. The development of bioinformatic tools is of high impact to the station and to the community outside. The recruitment of the team leader is adding strength to the whole institution and is broadening the field of research. There is the opportunity that all other teams benefit from the hire.

- ***Weaknesses and threats***

The research team needs to develop its own research branch to be leader in the own projects.

- ***Recommendations***

It has been mentioned by other teams that the recruitment of the team leader raises hope of gaining expertise and help in bioinformatics. Thus the integration of the team might be difficult and the team leader has to avoid to become a 'service' unit for the other teams.

The team leader needs to establish his own expertise and projects in the research field to become more visible by developing and leading own projects.

It remains unclear what the new data will be that is analysed in the future. Are these genomic data from public databases, in house data from other labs or external collaborators?

5 • Conduct of the visit

Visit dates:

Start: Thursday November 15, 2012, at 9:45 AM

End: Friday November 16, 2012, at 4:00 PM

Visit site :

Observatoire Océanologique de Villefranche-sur-Mer

Laboratoire de Biologie du Développement. Jean Maetz building

Port de la Darse. 06230 Villefranche-sur-Mer

Lab tour and settings in the *Jean Maetz* and *Les Galériens* buildings

Conduct and programme of visit:

The evaluation took place on November 15th and 16th, 2012 during a site visit to the Laboratoire de Biologie du Développement (LBDV) at the Observatoire Océanologique in Villefranche-sur-mer (OOV). Members of the evaluation committee had been briefed prior to the visit through timely receipt of the Laboratory's activity report (2009-2013) and their research project (2014-2018). The visit began with plenary presentations of the research unit by the Research Director and of the OOV by the General Secretary and the Assistant Director. A representative of the CNRS was also available for questioning during the entire first day. A teleconference with representatives of the UPMC was scheduled for the first morning but was rescheduled to the second day due to technical difficulties.

The plenary session was followed by a tour of the laboratory facilities in both the Galeriens and Jean Maetz buildings, including descriptions of ongoing and planned renovations for aquarium facilities and refurbishment of laboratories for the arrival of new groups and upgrading of informatics facilities. Each team in the laboratory was then interviewed by the entire committee (1 hour per team) regarding their research activity and future project plans. In each case this began with a presentation by team leader(s) with the entire team present, followed by a short 5 min interview with the team leader alone and concluded with a brief closed committee summation led by the primary reporter for the given team.

During the latter part of the visit the committee met in successive sessions with: the technical and administrative staff, the research staff (in the absence of the Research Director), the temporary Postdoctoral fellows and thesis students, and finally, the Research Director alone. The visit concluded with a closed door meeting of the evaluation committee in which written initial assessments of the laboratory as a whole and each individual team were collected by the AERES representative.

Thursday 15 November 2012

9:45 –10:15 :	Closed door committee meeting
10:15 :	Start of plenary presentations
10:15 – 10:30 :	Presentation of the AERES evaluation committee,
10:30 - 11:30 :	Presentation of the research unit by the Director (including 10-15 mn questions)
11:30 – 11:45 :	Break / Debriefing of the committee
11:45 – 12:00 :	Presentation of the OOV by the General Secretary and the Assistant Director
12:00 – 12:20 :	Meeting with representatives of Institutions supporting the unit (CNRS, UPMC, OOV)
12:30 – 1:30 :	Lunch for Committee members and CNRS/UPMC/OOV representatives and Lab Director
1:45 – 2:15 :	Tour of Lab
2:20 – 3:20 :	Group 1
3:20 – 4:20 :	Group 2
4:20 – 4:30 :	Break / Debriefing of the committee
4:30 – 5:30 :	Group 3
5:30 – 6:30 :	Group 4
8:00 :	Dinner for the Committee in Villefranche-sur-mer

Friday 16 November 2012

8:45 – 9:00 :	Closed door committee meeting
9:00 – 10:00 :	Group 5
10 :00– 11:00:	Group 6
11:00 – 11:15 :	Break / Debriefing of the committee
11:15 – 11:45 :	Meeting of the committee with technical and administrative staff
11:45 – 12:05 :	Meeting of the committee with post-docs and thesis students
12:05 – 12:25 :	Meeting of the committee with researchers (without lab director)
12:30 – 1:30 :	Lunch
1:30 – 2:00 :	Meeting of the committee with the head of the research unit
2:00 – 4:00 :	Closed door meeting of evaluation committee (mandatory)
4:00 :	End of visit

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

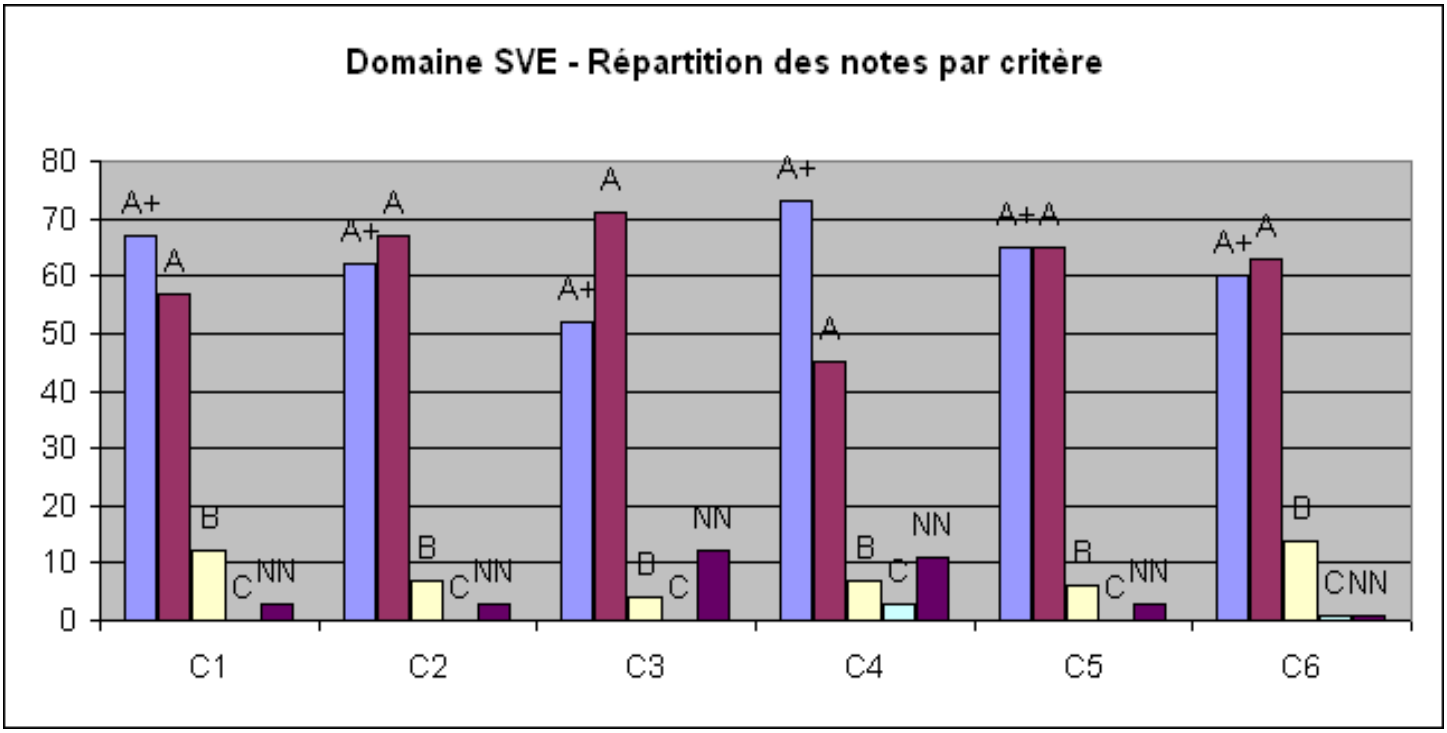
Grades

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 Biologie du développement de Villefranche sur mer, porté par Mme Houliston. 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

LABORATOIRE DE BIOLOGIE DU DEVELOPPEMENT DE VILLEFRANCHE-SUR-MER

CNRS – UPMC

Observatoire Océanologique, France 06230

20th March 2013

Comments on the report from the AERES committee

(November 2012 site visit)

Laboratoire de Biologie du Développement (UMR 7009 -LBDV)

We would like to start by thanking the AERES committee for their constructive evaluation. We are pleased with their very positive assessment of our activities and future strategy, with their recognition that our laboratory has maintained its "status as an international reference institute for Marine Molecular Developmental Biology", and with their approval of our five-year plan. We have no serious disagreement with the report, but will take this opportunity to emphasise the main conclusions of particular note for our supporting organisations (CNRS, UPMC, OOV), to respond to the specific recommendations, and to update certain information. We also point out some minor discrepancies and factual errors that we think are important to rectify.

Main conclusions

The report provides an excellent summary of our strengths in terms of high research quality and production, efficient internal organisation and active external relations. We appreciate the encouragement to maintain and expand our "internationally visible and original research niche in molecular and cellular developmental research" based on the development and exploitation of marine models.

Concerning the perceived weaknesses, we are acutely aware that the laboratory is still operating with a "chronic low critical mass" and emphasise the importance of actively pursuing recruitment in all personnel categories: research, teaching and support staff, postdocs and PhD students. We agree with the committee that current threshold critical mass not only limits full exploitation of the unit's unique niche and scientific potential, but is unstable for individual groups and for the unit as a whole.

Specific recommendations

We appreciate the committee's 6 useful recommendations concerning specific aspects of future development, which mainly fall in line with our existing plans.

1) Make efforts to improve the interface between the LBDV and the OOV from both research and administrative perspectives

This is a concern that has long preoccupied the unit, and was already raised by the 2008 AERES evaluation committee as well as the other internal forums such as the OOV "Conseil Scientifique". Although we agree that it would certainly be beneficial to improve the interface between the three OOV units (LBDV, LOV and UMS), finding ways to achieve it has proved difficult.

On the research front, the main difficulty is that both research laboratories (LBDV and LOV) have logically chosen to focus their strategies on reinforcing and stabilising existing research strengths. This is particularly necessary for the LBDV given its fragile critical mass and minority status. As a result, the overlap of research interests between the laboratories remains very limited. Another factor is the administrative attachment to different CNRS institutes (INSU for the UMS/OOV and LOV, INSB for the LBDV), each of which has its own priorities and strategic actions. The thematic and administrative separation between the units was well illustrated by the regrettable independent organisation of the AERES evaluations: for the LBDV on one side and the OOV+LOV on the other**.**

One concrete strategic solution proposed by the OOV direction is to open an international call aimed at introducing a new high-level group working on a subject at the interface between the two laboratories. The LBDV will continue to support this strategy. The suggestion of the AERES evaluation committee that "opportunities in transcriptomics, metabologenomics and metagenomics in the rapidly expanding arena of environmental genomics could be considered as a possible and productive interface" is a good

one. Another possibility is the emerging "Eco-Evo-Devo" field. In practice it willl be a big challenge to identify and provide an attractive installation package for such a group, and success will require strong support from the parent institutions (CNRS and UPMC) as well as all the local partners. A second opportunity for interaction between OOV scientific activities is provided by the EMBRC and EMBRC-Fr projects, indeed this was one of the motivations for the LBDV's heavy commitment to them. These projects have stimulated the initiation of joint activities in marine model organism culture and provision, and have committed the OOV to set up joint technological platforms in Imaging and BioInformatics.
On the organisational front there is also clearly scope to improve communication and cohesion between the elements of the OOV. Particular logistic problems raised by the AERES committee, like the lack of an adequately functioning reception, remain to be resolved.

2) Seek to consolidate teams through additional recruitment. Additional "enseignant-chercheur" recruitments with the LBDV should be prioritized
We agree that increasing critical mass is a vital factor for the LBDV's future.
We are very proud and satisfied with the successful researcher recruitments achieved over the last contract period, and would like to acknowledge in particular the support of the CNRS in this effort. Now that the recent wave of retirements is over we hope that maintained researcher recruitment along with addition of support staff, will allow us to achieve the desired expansion and stabilisation of the groups.
The UPMC has recently confirmed the opening of a Professor post for the LBDV, and the recruitment process is currently underway. We thank the UPMC for this positive move, but it will leave the unit still heavily underrepresented in the 'enseignant-chercheur' category. We strongly hope that one or two "maitre de conferences" posts will be opened in the next five years to allow strengthening of the groups and of the links between our research and the student community.

3) Seek more pre-Masters level opportunities through teaching, workshops etc. to interact with students earlier in their cycle with a view to augmenting PhD recruitment.
Following this recommendation will be facilitated by the addition of a UPMC professor to the LBDV (see above), and also by the UPMC's recent initiatives to set up undergraduate training through interactive teaching of small groups on multidiciplinary topics). The LBDV will enthusiastically participate in these plans. We will also aim to increase participation in undergraduate teaching at the University of Nice.
We are acutely aware of the need to attract more PhD students, Master students and post-docs. To this end we hope to work with the various Masters programme organisers to improve accessibility and integration of research subjects proposed by LBDV groups. Concerning PhD students, we have submitted a Marie Currie ITN proposal for an ambitious single-site training programme. We also remain hopeful that opportunities for PhD and post-doc funding of projects in our subject area will emerge through implementation of certain actions proposed in the DevoNet project.

4) Explore research opportunities at the interface with the OOV to diversify funding possibilities
Covered under point 1.

5) Ensure adequate mentoring opportunities for recently arrived team leaders
This point is important, and we will take it into account in the organisation of future internal activities. We recognise that there has been a lack of specific attention to helping new groups, reflecting the fact that previously new groups have almost all emerged internally. Since the AERES visit, and following the committee's suggestion, we have organised a profitable first "grant preparation" day involving all the scientists of the unit, and plan to programme regular interactions of this sort.

6) Establish priorities among projects and identify the questions and hypotheses that offer the most original perspectives and reduce competition with research in well-established models with larger genetic toolkits.
Individual groups will be encouraged to follow this recommendation, and to help each other to do so by offering more critical and constructive criticisms and mentoring (see point 5 above). We are aware of the need to strike a balance between identifying and exploiting particular scientific niches, whilst also promoting innovative explorative activities.

LABORATOIRE DE BIOLOGIE DU DEVELOPPEMENT DE VILLEFRANCHE-SUR-MER

CNRS – UPMC

Observatoire Océanologique, France 06230

Updates on specific issues mentioned in the report

Space / Renovations

The AERES Evaluation report rightly pointed out that although space allocation has greatly improved since the previous evaluation, the LBDV still operates within quite severe space constraints.
In the documents prepared for the AERES evaluation we explained that vital additional space was expected to be made available on the OOV site during the coming 5-year period. It is extremely important that the UPMC assists in every way possible the OOV director to push through these renovation and construction plans, and to overcome as quickly as possible the many logistical and administrative difficulties that are seriously delaying these operations and future plans.

Web site

The harmonization of our website has continued since the AERES visit and is now nearly complete.

Internal collaborations

Prior to the AERES visit, active collaboration between groups 2 and 3 involving sharing of ideas, techniques and reagents was already a reality, as demonstrated by the recent co-publication of a "technical note". Discussions on initiating a joint project on asymmetric cell division are underway.

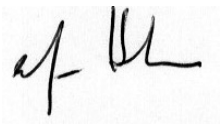
Interactions with the private sector

Since the committee visit, A. McDougall and R. Dumollard have been exploring with SATT-Lutech the feasibility of establishing a patent regarding use of marine models as test systems in toxicology. This idea, and the parallel possibility of establishing a Start-Up company, is now being pursued positively by the two partners.

Points to rectify

The report suffers from some (understandable) unevenness and a few misunderstandings, which we rectify as follows:

- E. Houliston has been responsible administratively and organisationally during the present contract period. Joint leadership with T. Momose is a proposition for the 2014-2018 contract.
- Concerning the group 2 report, the outstanding efforts of C. Sardet and J. Chenevert's to the LBDV's outreach activities need to be acknowledged. The recommendation that the members of this group "also put an effort to disseminate more largely their findings…" is not justified; they are extremely active in this domain though workshop organisation, conference participation, teaching etc.
- Concerning the group 5 report it should be noted that at the time of the AERES visit the group had only very recently formed by fusion of a group led by J. Croce and of the newly arrived group leader M. Schubert. Since that time, the integration of the two research projects has progressed well, allowing specific scientific hypotheses to be framed and addressed within the group.
- Group 7. "Mitosis and Spindle Checkpoints" was not mentioned at all in the report. Like the team 6 leader, the team 7 leader (S. Castagnetti) has not arrived yet in the LBDV, and her absence on the day of the evaluation visit presumably accounts for this unfortunate omission.
- In the Personnel Tables on page 3 and for each team, the figures in the first and second lines (N1 and N2) appear to be inverted .The majority of our scientists are EPST (CNRS or INSERM, ie category N2)



Evelyn Houliston for the LBDV