LBI2M - Laboratoire de biologie intégrative des modèles marins

Rapport Hcéres

Research evaluation

REPORT ON THE RESEARCH UNIT:

Laboratory of Integrative Biology of Marine Models (LBI2M)

UNDER THE SUPERVISION OF THE FOLLOWING INSTITUTIONS AND RESEARCH BODIES:

Université Pierre et Marie Curie

Centre National de la Recherche Scientifique - CNRS

EVALUATION CAMPAIGN 2017-2018

GROUP D

In the name of Hcéres[1]:

Michel Cosnard, President

In the name of the expert committee[2]:

Arthur Grossman, Chairman of the committee

Under the decree No.2014-1365 dated 14 November 2014,

[1] The president of Hcéres "countersigns the evaluation reports set up by the expert committees and signed by their chairman." (Article 8, paragraph 5);

[2] The evaluation reports "are signed by the chairman of the expert committee". (Article 11, paragraph 2).

This report is the sole result of the unit's evaluation by the expert committee, the composition of which is specified below. The assessments contained herein are the expression of an independent and collegial reviewing by the committee.

UNIT PRESENTATION

Unit name:	Laboratory of Integrative Biology of Marine Models
Unit acronym:	LBI2M
Requested label:	UMR
Application type:	Renewal
Current number:	UMR 8227
Head of the unit (2017-2018):	Ms Catherine BOYEN
Project leader (2019-2023):	Mr Stéphane EGÉE
Number of teams:	7

COMMITTEE MEMBERS

Chair:	Mr Arthur GROSSMAN, Carnegie Institute Stanford, United States
Vice chair:	Mr Jean-Claude MICHALSKI, Université de Lille
Experts:	Mr Guillaume BÉCARD, Université Toulouse (representative of CNU)
	Mr Debashish BHATTACHARYA, Rutgers University, United States
	Ms Gwyneth INGRAM, Ens de Lyon (representative of CoNRS)
	Mr Klaus-Ulrich VALENTIN, Alfred-Wegener-Institut Bremerhaven, Germany
	Mr Renaud VINCENTELLI, Aix-Marseille Université (supporting personnel)
	Ms Marieke VON LINDERN, Sanquin, The Netherlands
HCERES scientific officer:	Mr Steven BALL
Representatives of supervising institutions and bodies:	Ms Catherine RECHENMANN, CNRS
	Mr Stéphane REGNIER, Université Pierre et Marie Curie

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The CNRS-UPMC Joint Research Unit 8227, the Laboratory of 'Integrated Biology of Marine Models', created in January 2014, is one of the 4 research units located at the Roscoff Marine Biology Station (SBR), and is supported by the CNRS Research Federation FR 2424. It was created by combining five teams from the former UMR 7139 (Marine Plants and Biomolecules), two teams from UMR 7150 (Sea and Health) and a Vibrio Genomics team hosted in FR 2424 at SBR since 2010. The main CNRS affiliation with UMR 8227 is the Institute of Biological Science (INSB), with secondary affiliations with the Institute of Ecology and Environment (INEE) and the Institute of Chemistry (INC), while at UMPC it is affiliated with the 'Living Earth and Environment Division'. The researchers in the unit belong to one of 6 National CNRS National Committees with the primary section being 23 and secondary sections 16 and 29 (20, 21 and 22 are the other relevant sections). At the beginning of the current contract the unit was composed of 8 research teams and the common resource centre (CCR). During the contract, two teams ('Physiology and Abiotic Stress of Macroalgae' and 'Algal Chemical Defence and Signaling') were merged into the single team 'Algal Biology and Interactions with the Environment' (ABIE), resulting in the current 7 research teams. The unit as a whole participates in many regional, national, European and international activities.

At the beginning of the current contract there were on average 65 personnel (14 CNRS researchers, 7 UPMC research-lecturers, 2 IFREMER researchers, 17 CNRS support staff, 7 postdocs, 10 graduate students and 8 contractual employees). Over the course of the contract the unit grew and now has 75 staff members with 3 additional UPMC research-lecturers, 1 additional CNRS support staff, 4 new PhD students and 1 additional contractual employee. The unit also has on average 15-20 research interns (undergraduate and graduate students) hosted annually and 6 French or foreign visiting researchers/PhD students. Hence, the unit has grown considerably since the last contract.

MANAGEMENT TEAM

The present director of unit 8227 is Ms Catherine Boyen with Co-director M. Czjzek. The future proposed director of the unit is Mr Stéphane Egée with M. Czjzek as proposed deputy director.

HCERES NOMENCLATURE

SVE1_1; SVE2_1; SVE2_2; SVE2_3; SVE5_1; ST4_4.

SCIENTIFIC DOMAIN

UMR 8227 has focused its research on marine model systems that are associated with independent evolutionary lineages (e.g. metazoan, macroalgae, bacteria) and emphasizes evolutionarily important processes including development, tissue regeneration, gene/translation regulation and cell cycle, physiology and metabolism in marine organisms and their environmental (abiotic and biotic) interactions. Specifically, the major model organisms being used include red and brown algae (Chondrus, Ectocarpus, Laminaria), the sea urchin, the catshark, and the marine bacteria Vibrio and Zobellia; 1 of the 7 team also works on red blood cells.

UNIT WORKFORCE

Unit workforce	Number 30/06/2017	Number 01/01/2019
Permanent staff		
Full professors and similar positions	2	2

Assistant professors and similar positions	7	7
Full time research directors (Directeurs de recherche) and similar positions	10	9
Full time research associates (Chargés de recherche) and similar positions	4	7
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	2	2
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	17	22
TOTAL permanent staff	**42**	**49**
Non-permanent staff		
Non-permanent professors and associate professors, including emeritus	1	
Non-permanent full time scientists, including emeritus, post-docs	7	
Non-permanent supporting personnel	5	
PhD Students	14	
TOTAL non-permanent staff	**27**	
TOTAL unit	**69**	

GLOBAL ASSESSMENT OF THE UNIT

The Laboratory of Integrative Biology of Marine Models represents an excellent unit that is one of the most successful laboratories of its kind in the world. Members of the group have already established genetic tools to begin to dissect the marine bacterium Zobellia and have cultivated and transformed some Vibrio isolates. They are exploring interactions among organisms and the control of those interactions through analyses of complex life cycles and developmental patterns, emphasizing cellular processes such as determination of cell morphology, cell death signaling pathways, genetics of sex determination and molecular aspects of protein translation. Their work on analyses of the brown algal life cycle has led to the development of Ectocarpus as a strong model system and to important discoveries concerning the genes/proteins associated with sex determination and differentiation of gametophytes and sporophytes. The team has maintained its role as an internationally renowned Institute in the field of biology/ecology and genomics of marine macroalgae and has begun to move toward mathematical modeling (which has strong predictive value), structural biology coupled with crystallography to explore macromolecular systems and their interactions, metabolic reconstruction of networks to identify novel and alternative pathways for various biological processes, and aspects of systems biology that can integrate across the biological landscape. Other teams in the unit have done some interesting work on post-transcriptional control in sea urchin, regeneration of shark kidney cells and ion transport (and its relationship to various diseases) in human erythrocytes.

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