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## IBDML - Institut de biologie du développement de Marseille - Luminy

Rapport Hcéres

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# HCERES

High Council for the Evaluation of Research  
and Higher Education

Department of Research Evaluation

report on research unit:

Developmental Biology Institute of Marseille

IBDM

under the supervision of  
the following institutions  
and research bodies:

Aix-Marseille Université

Centre National de la Recherche Scientifique – CNRS

Evaluation Campaign 2016-2017 (Group C)

# HCERES

High Council for the Evaluation of Research  
and Higher Education

Department of Research Evaluation

*In the name of HCERES,<sup>1</sup>*

Michel Cosnard, president

*In the name of the experts committee,<sup>2</sup>*

Patrick Charnay, chairman of the committee

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Under the decree N°2014-1365 dated 14 november 2014,

<sup>1</sup> The president of HCERES "countersigns the evaluation reports set up by the experts committees and signed by their chairman." (Article 8, paragraph 5)

<sup>2</sup> The evaluation reports "are signed by the chairman of the expert committee". (Article 11, paragraph 2)

## Evaluation report

This report is the sole result of 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 name:** Developmental Biology Institute of Marseille

**Unit acronym:** IBDM

**Label requested:** UMR

**Current number:** 7288

**Name of Director (2016-2017):** Mr André LE BIVIC

**Name of Project Leader (2018-2022):** Mr André LE BIVIC

## Expert committee members

**Chair:** Mr Patrick CHARNAY, École Normale Supérieure, Paris

**Experts:**

- Mr James BRISCOE, The Francis Crick Institute, London, UK
- Mr Philippe CHAVRIER, Institut Curie, Paris (representative of the CoNRS)
- Mr Krzysztof JAGLA, University of Clermont-Ferrand
- Mr Bruno LEMAITRE, École Polytechnique Fédérale de Lausanne, Switzerland
- Ms Fatiha NOTHIAS, Neurosciences Paris Seine
- Mr François PAYRE, Université Paul Sabatier, Toulouse
- Ms Anne-Marie PRET, I2BC Gif-sur Yvette (representative of the CNU)
- Ms Esther STOECKLI, University of Zurich, Switzerland
- Ms Kate STOREY, University of Dundee, UK
- Mr Alfonso VALENCIA, Spanish National Cancer Research Centre, Madrid, Spain
- Mr Say VIENGCHAREUN, Faculté de Médecine Paris-Sud, Le Kremlin Bicêtre (representative of supporting personnel)

**Scientific delegate representing the HCERES:**

Mr Pierre COUBLE

**Representatives of supervising institutions and bodies:**

Mr Pierre CHIAPPETTA, Aix-Marseille Université

Mr Jean-Maurice DURA, CNRS

**Head of Doctoral School :**

Mr Philippe NAQUET, Doctoral School n° 62, « Sciences de la Vie et de la Santé »

## 1 • Introduction

### History and geographical location of the unit

IBDM, the Institut de Biologie du Développement de Marseille - Developmental Biology Institute of Marseille, has been created in 2006 after the merging of several laboratories that, at that time, were affiliated to the University of Marseille, CNRS and INSERM. At present, IBDM is a research entity funded by both the novel Aix-Marseille University (AMU) and the CNRS. The present director, Mr André LE BIVIC, will be the head of the unit for the coming five-year period. IBDM is located in the so-called TPR2 building of the Campus of Luminy.

### Management team

The director is assisted by two committees: a “Scientific Direction Team” with Ms Pascale DURBEC, Ms Lydia KERKERIAN and Mr Pierre-François LENNE as permanent members and an “Executive Direction Team” that includes three members : Ms Magali CONTENSIN, Ms Fleur ENRIQUEZ-SARANO and Mr Patrick GARIGLIO.

### HCERES nomenclature

Primary domains:

SVE2 Cell Biology, Imagery, Molecular Biology, Biochemistry, Genomics, System biology, Development, Structural biology.

Secondary domains:

SVE4 Neurology;

ST2 Physics;

SVE5 Physiology, Physiopathology, Cardiology, Pharmacologie, Endocrinologie, Cancer, Technologies Médicales.

### Scientific domains

The rationale of research carried out at the IBDM is based on the concept that understanding how normal development is regulated should provide a better understanding of the basis of human pathology. IBDM teams study the basic mechanisms of development from germ-line stem cells through embryonic differentiation and morphogenesis to the acquisition of complex functions. Different animal models are used combined with multidisciplinary approaches from genetics, genomics, cell biology, developmental biology, physiology and patho-physiology, behaviour, mathematics, informatics and physics.

Unit workforce

Unit workforce	Number on 30/06/2016	Number on 01/01/2018
N1: Permanent professors and similar positions	14	15
N2: Permanent researchers from Institutions and similar positions	50	52
N3: Other permanent staff (technicians and administrative personnel)	53	54
N4: Other researchers (Postdoctoral students, visitors, etc.)	24	
N5: Emeritus	2	
N6: Other contractual staff (technicians and administrative personnel)	25	
N7: PhD students	44	
TOTAL N1 to N7	212	
Qualified research supervisors (HDR) or similar positions		

Unit record	From 01/01/2011 to 30/06/2016
PhD theses defended	39
Postdoctoral scientists having spent at least 12 months in the unit	44
Number of Research Supervisor Qualifications (HDR) obtained during the period	9

## 2 • Assessment of the unit

### Global assessment of the unit

The IBDM is one of the major centers in France devoted to cell and developmental biology and it gathers most of the forces in this domain in the Marseille area. It covers many aspects of development, with a particular emphasis on cytoskeletal organisation, mechanics and morphogenesis, stem cells, neurogenesis and muscle development and dynamics, trying to keep a link or an inspiration with/from human pathologies. Two animal models are privileged, mouse and *Drosophila*. Interdisciplinary approaches, including physics, modelling and quantitative biology, coupled with state-of-the-art imaging, are taking an increasing importance.

During the last ten years, the IBDM has established itself as a major player in France and internationally in the fields of developmental biology, cell biology and neurosciences, notably on the basis of its excellent scientific production. The interface built at the IBDM between biophysical approaches and the study of morphogenesis and cellular assemblies is exceptional in its originality and productivity and the Institute provides state-of-the-art platforms, in particular for mouse genetics, *Drosophila* and for biological imaging. IBDM's dynamism is illustrated by its extremely high level of success in calls for proposals for the Programme d'Investissement d'Avenir, with a "laboratory without walls", SysTIM, a Labex, INFORM, and an Institut de Convergence, CenTuri and its attractiveness is demonstrated by the outcome of its last call for applications for the recruitment of new group leaders, leading to the installation of three teams of very high profile, two of them coming with an ERC grant. This establishes that the IBDM has been able to mobilize appropriate means and was very attractive in the competitive fight for rising stars. Such attractiveness constitutes an essential element for the future.

Despite the general excellent quality of the teams at IBDM, there are significant differences in their productivity, originality and financial support, with, at one extremity, a few outstanding teams, regularly publishing in the best journals and appearing as international leaders in their fields, and, at the other extremity, a few groups that are more fragile, with limited productivity and/or financial prospects. This heterogeneity might create internal tensions, in particular concerning budget issues, and affect the external image of the Institute. In addition, although most of the teams in the IBDM are working in the same general field, Developmental Biology, with an integrative ambition and mostly on two animal models, their distribution according to subfields is somewhat dispersed and may reduce the perceived critical mass of the Institute. However, the major issue that the IBDM has to face is the refurbishing of its building that will lead to temporary relocation of the entire Institute in two phases, each of them involving half of the building. On the one hand, this will dramatically affect the day-to-day functioning of the research teams and of the technological platforms (the situation of the imaging and mouse facilities is particularly critical). On the other hand, this will considerably reduce the capacity of conducting a strategic scientific policy and largely block any significant evolution of the Institute over this long period, as no new team can be recruited.

In conclusion, the IBDM is an excellent, transdisciplinary and ambitious Institute that relies on the high quality of its research and on its remarkable dynamism. However, it is presently facing a major challenge with the refurbishing of its building. The panel urges the institutional bodies to take extreme attention to this situation and to help the IBDM as much as they can. In addition, efforts should be made to alleviate the burden on the director, who should really be acknowledged for his dedication.