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## MEPHI - Microbes évolution phylogénie et infections

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:

Microbes Evolution Phylogeny and Infections

MEPHI

Under the supervision of  
the following institutions  
and research bodies:

Aix-Marseille Université

Centre National de la Recherche Scientifique - CNRS

Institut National de la Santé Et de la Recherche

Médicale - INSERM

Institut de Recherche pour le Développement - IRD

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>*

Timothy McHugh, chairman of the committee

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Under the decree No.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:	Microbes Evolution Phylogeny and Infections
Unit acronym:	MEPHI
Label requested:	UMR
Current number:	URMITE - AMU UM63, UMR CNRS 6236, IRD 3R198, Inserm U 1095
Name of Director (2016-2017):	Mr Didier RAOULT
Name of Project Leader (2018-2022):	Mr Michel DRANCOURT

## Expert committee members

Chair:	Mr Timothy McHUGH, UCL Centre for Clinical Microbiology, Royal Free Campus, University College London, UK
Experts:	Mr François BALLOUX, UCL Genetics Institute, University College London, UK Mr Matteo BONAZZI, Centre d'études d'agents Pathogènes et Biotechnologies pour la Santé, Montpellier (representative of the CoNRS) Ms Magalie BENARD, PRIMACEN - Université de Rouen, Mont Saint-Aignan (representative of supporting personnel) Mr Éric CRUBEZY, Université de Toulouse Mr Xavier DAURA, Institute of Biotechnology and Biomedicine, Universitat Autònoma de Barcelona, Spain Mr Francis MÉGRAUD, C.H.U. Pellegrin, Bordeaux (representative of the CNU) Ms Isabelle MORLAIS, MIVEGEC IRD - Université de Montpellier (representative of the CSS IRD) Mr David SPRATT, University College London, UK Ms Agathe SUBTIL, Institut Pasteur Paris (representative of the CSS Inserm)

### Scientific delegate representing the HCERES:

Ms Catherine SCHUSTER

### Representatives of supervising institutions and bodies:

Mr Pierre CHIAPPETTA, Aix-Marseille Université

Mr Bruno LUCAS, CNRS

Mr Dominique NOBILE, Inserm

Ms Stéphanie POMMIER, Inserm

Ms Valérie SALIN, IRD

### Head of Doctoral School:

Mr Alain ENJALBERT, Doctoral school n° 62, "Sciences de la vie et de la santé"

## 1 • Introduction

### History and geographical location of the unit

MEPHI is a new unit developed as a result of the division of URMITE into two research units; MEPHI and VITROME and associated with a unity of services, the future pathoscreen platform. All of them are part of the Institut Hospitalo Universitaire (IHU) Mediterranee Infection (head Mr Didier RAOULT). URMITE was created by Mr Didier RAOULT, as a “Unité Mixte de Recherche” (UMR) under the labels IRD, CNRS, Inserm and Aix Marseille University (AMU), and is located on La Timone hospital campus. The future MEPHI unit will take forward seven teams from the current URMITE and two new teams addressing Evolutionary Biology and Hospital Acquired Infections, and will be headed by Mr Michel DRANCOURT the former deputy head of URMITE. The unit will be located in the brand-new IHU building at the Faculty of Medicine Campus La Timone in Marseille. The objective is to bring together excellence in research in clinical microbiology and infectious diseases with a focus on translational research and knowledge transfer.

### Management team

The MEPHI unit will be headed by Mr Michel DRANCOURT, with Mr Jean-Louis MÈGE as deputy head.

### HCERES nomenclature

SVE3 Microbiologie, Immunité

SVE6 Santé Publique, Épidémiologie, Recherche Clinique

### Scientific domains

MEPHI is focussed on the evolutionary biology of infection (primarily bacteria) with a focus on emerging infections and antimicrobial resistance.

### Unit workforce

Unit workforce	Number on 30/06/2016	Number on 01/01/2018
N1: Permanent professors and similar positions	41	35
N2: Permanent researchers from Institutions and similar positions	8	5
N3: Other permanent staff (technicians and administrative personnel)	13	16
N4: Other researchers (Postdoctoral students, visitors, etc.)	3	
N5: Emeritus	0	
N6: Other contractual staff (technicians and administrative personnel)	0	
N7: PhD students	68	
<b>TOTAL N1 to N7</b>	<b>133</b>	
Qualified research supervisors (HDR) or similar positions	32	

Unit record	From 01/01/2011 to 30/06/2016
PhD theses defended	80
Postdoctoral scientists having spent at least 12 months in the unit	not provided by the unit
Number of Research Supervisor Qualifications (HDR) obtained during the period	3

## 2 • Assessment of the unit

### Global assessment of the unit

At the 2012 evaluation URMITE had 12 teams researching a broad remit covering clinical infection, epidemiology and tropical disease. The current proposal reflects the separation of URMITE into two units MEPHI and VITROME, MEPHI is focussed on the evolutionary biology of infection (primarily bacteria) with a focus on emerging infections and antimicrobial resistance.

URMITE teams forming the future MEPHI have an excellent track record with a strong publication record as well as evidence of knowledge transfer and translation to clinical settings. The future unit has a well established model for investigation of new and emerging infections. MEPHI teams have an excellent technological and intellectual platform for the research proposed. The research community includes a good distribution of disciplines and expertise. There is a clear progression for new scientists to be developed through masters, doctoral and post-doctoral studies. The unit is well funded with support from regional, national (CNRS, Inserm, IRD) and international (FEDER) bodies. Members of MEPHI have won competitive funding from ANRS.

The reputation of the unit rests heavily on Mr Michel DRANCOURT and Mr Didier RAOULT, and the continued success of MEPHI will require the development of junior members of the unit as leaders, not only in the administrative tasks but importantly in the future scientific direction of MEPHI.

The portfolio presented is predicated on a well developed pipeline of technological tools and application of these to broad questions. As indicated in the previous (2012) assessment, they should consider more fundamental hypotheses-driven questions. In the previous contract there were seven teams and these have been re-aligned and expanded to nine teams in the current proposal. Inclusion of the team "Evolutionary Biology" acknowledges the need for biological computational expertise in the unit and development of the teams "Cardiovascular Infections" and "Innovative approaches to understand and control contagion in hospital" provides research that is directly clinically relevant. The team "Human, animal and environmental (mega) viromes within microbiota" is a logical combination of two teams from the previous contract and builds on the success of these team leaders.

In the proposal, great emphasis is placed on translational research, the teams addressing clinical studies are relatively small and there is a risk that the opportunity to undertake valuable fundamental research is missed as the primary focus is on clinical intervention studies.

Overall, this is an excellent unit drawing together expertise of international standing. However, care must be taken to ensure that there is a clear vision and unity of purpose to advance the science proposed.