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# IMoPA - Ingénierie moléculaire et physiopathologie articulaire

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:

Molecular engineering and joint pathophysiology

IMoPA

under the supervision of  
the following institutions  
and research bodies:

Université de Lorraine

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>*

Timm Maier, 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:** Molecular engineering and joint pathophysiology

**Unit acronym:** IMoPA

**Label requested:** UMR CNRS - Université de Lorraine

**Current number:** 7365

**Name of Director (2016-2017):** Mr Jean-Yves JOUZEAU

**Name of Project Leader (2018-2022):** Mr Jean-Yves JOUZEAU

## Expert committee members

**Chair:** Mr Timm MAIER, University of Basel, Switzerland

**Experts:** Ms Isabelle DUROUX-RICHARD, Université de Montpellier (representative of the supporting personnel)

Mr Marc GRAILLE, École Polytechnique, Palaiseau

Ms Jin-ping LI, University of Uppsala, Sweden

Ms Claudine MAYER, Institut Pasteur (representative of the CNU)

Ms Nuala MOONEY, Université Paris Diderot

Mr Hervé PETITE, Université Paris Diderot (representative of the CoNRS)

Mr Peter M. VAN DER KRAAN, Radboud University, The Netherlands

**Scientific delegate representing the HCERES:**

Ms Sophie EZINE

**Representatives of supervising institutions and bodies:**

Mr Jean-Louis GUEANT, pôle Biologie, Médecine, Santé

Mr Yves REMOND, CNRS, INSIS Department

Mr Pascal SOMMER, CNRS, INSIS Department

Mr Frédéric VILLIERAS, Université de Lorraine

**Head of Doctoral School:**

Ms Isabelle LARTEAUD, Doctoral school n° 266, “Biologie, Santé, Environnement”

# 1 • Introduction

## History and geographical location of the unit

Historically, the UMR 7365 research unit IMoPA (Molecular Engineering and Articular Pathophysiology) was created on January 1<sup>st</sup> 2013 via the fusion of UMRs 7214 AREMS (RNA, RiboNucleoProtein structure/function/maturation, Molecular and Structural Enzymology) and 7561 PPIA (Articular Pathophysiology, Pharmacology and Engineering). The creation of the research unit IMoPA resulted in the merging of complementary expertises in the field of biology and health in a single geographical location: the research center on the campus of the faculty of medicine, the “Biopôle de l’Université de Lorraine”. The research is based on a multidisciplinary approach of bioengineering (CNRS Institutes INSIS & INSB), bolstered by expertise in biochemistry, chemistry, cell and molecular biology, and use of animal models.

The unit has been structured into 5 teams originating from the 2 former units, furthermore the “Biopôle” building localisation includes all the high-level technical platforms of the Federation of Research (FR) 3209. Some platforms function as core facilities of the university, whereas additional work areas are restricted to IMoPA (e.g. animal housing facility accredited for transgenic rodents, cell culture and molecular biology areas, and protein engineering and analytical units). For the 2018-2022 period, IMoPA proposes an extension to six teams by addition of a new team, partially forking out from team 5, while maintaining the general management structure.

## Management team

The UMR 7365 CNRS-UL unit IMoPA is headed by director Mr Jean-Yves JOUZEAU and deputy director Mr Bruno CHARPENTIER.

## HCERES nomenclature

SVE5, SVE3

## Scientific domains

Osteo-articular physiology, molecular engineering, molecular and structural enzymology, RNA biology, translational bioscience/regenerative medicine.

### Unit workforce

Unit workforce	Number on 30/06/2016	Number on 01/01/2018
N1: Permanent professors and similar positions	35	38
N2: Permanent researchers from Institutions and similar positions	13	13
N3: Other permanent staff (technicians and administrative personnel)	31	23
N4: Other researchers (Postdoctoral students, visitors, etc.)	4	
N5: Emeritus	4	
N6: Other contractual staff (technicians and administrative personnel)	7	
N7: PhD students	31	
<b>TOTAL N1 to N7</b>	<b>125</b>	
Qualified research supervisors (HDR) or similar positions	23	

Unit record	From 01/01/2011 to 30/06/2016
PhD theses defended	46
Postdoctoral scientists having spent at least 12 months in the unit	11
Number of Research Supervisor Qualifications (HDR) obtained during the period	7

## 2 • Assessment of the unit

### Global assessment of the unit

The research unit IMoPA combines complementary strength in multiscale bioengineering from the molecular level to biomaterial design for academic research and graduate student formation. The IMoPA unit integrates expertise in molecular and structural biology with translational health sciences both thematically and also physically in one location, the BioPole building, opening unique opportunities for interdisciplinary and translational research. In the 3.5 years since its foundation, IMoPA has maintained a very good to excellent scientific output. Moreover, the unit delivered excellent levels of training for doctoral thesis and has substantial contributions to master's-level training. The very good to excellent reputation and international engagement, provide a strong basis for future development along the excellent strategy. Focusing on current strength and extending innovative research (one new team for the future contract is proposed) will guarantee a further increase in research output quality.

The critical factor is on maintaining the current funding level which is uneven between teams. Moreover, collaborations between teams contributed only about 5% of the total research output. IMoPA, thus depends on further evolving interdisciplinarity to strengthen translational approaches increasing its already excellent position.