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## IFM - Institut du fer à moulin

Rapport Hcéres

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Research evaluation

REPORT ON THE RESEARCH UNIT:  
Institut du Fer à Moulin (IFM)

UNDER THE SUPERVISION OF THE  
FOLLOWING INSTITUTIONS AND  
RESEARCH BODIES:

Université Pierre et Marie Curie  
Institut National de la Santé et de la  
Recherche Médicale - INSERM

**ÉVALUATION CAMPAIGN 2017-2018**  
GROUP D



In the name of Hcéres<sup>1</sup> :

Michel Cosnard, President

In the name of the experts committees<sup>2</sup> :

Denis Jabaudon, Chairman of the  
committee

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).

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.

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## UNIT PRESENTATION

|  |                          |
|--|--------------------------|
| <b>Unit name:</b>                        | Institut du Fer à Moulin |
| <b>Unit acronym:</b>                     | IFM                      |
| <b>Requested label:</b>                  | UMR-S                    |
| <b>Application type:</b>                 | Renewal                  |
| <b>Current number:</b>                   | 839                      |
| <b>Head of the unit<br/>(2017-2018):</b> | Mr Jean-Antoine GIRAULT  |
| <b>Project leader<br/>(2019-2023):</b>   | Mr Jean-Antoine GIRAULT  |
| <b>Number of teams or themes:</b>        | 5                        |

## COMMITTEE MEMBERS

|  |   |
|--|---|
| <b>Chair:</b>  | Mr Denis JABAUDON, University of Geneva, Switzerland  |
| <b>Experts:</b>  | Ms Carine BECAMEL, IGF, Montpellier, CNRS (representative of CoNRS)<br>Mr Frédéric BRAU, IPMC, Valbonne (supporting personnel)<br>Ms Colette DEHAY, Stem Cell and Brain Research Institute, Bron<br>(representative of CNU)<br>Mr Laurent GROC, IINS, University of Bordeaux<br>Mr Josef KITLER, University College London, United Kingdom<br>Ms Ariane SHARIF, Centre de Recherche Jean-Pierre Aubert, Lille<br>(representative of INSERM) |
| <b>HCERES scientific officer:</b>                              | Ms Catherine HEURTEAUX  |
| <b>Representatives of supervising institutions and bodies:</b> | Mr Cyrille MAHIEUX, INSERM<br>Mr Stéphane REGNIER, UPMC   |

## INTRODUCTION

### HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The “Institut du Fer à Moulin” (IFM) is affiliated with INSERM and Sorbonne University, “Université Pierre et Marie Curie” (UPMC). It is housed in an INSERM building in the neighbourhood of UPMC and “Hôpital la Salpêtrière”. The IFM was created in 2007 after the fusion of three INSERM Units: U.536 headed by Mr J.A. GIRAULT, U.706 headed by Mr A. SOBEL and U.616 headed by Ms P. GASPARD (with Mr J.L. MAROTEAU), as well as by the Avenir group of Mr J.C. PONCER.

The IFM then welcomed F. Francis in 2007, and in 2008 S. Lévi from the ENS joined the PONCER's group. Further calls for new teams led to the recruitment of two young group leaders, Mr M. GROSZER (from Oxford, UK) in 2009 and Mr M. MAMELI (from the University of Geneva, Switzerland) in 2010, the latter now being at Lausanne University since 2016. The most recent addition is the team of Mr S. NEDELEC, who applied to join the IFM at the end of 2015, after obtaining an ATIP/Avenir grant. A call for a new group leader/team at the IFM is currently ongoing with 10 short-listed candidates out of 39 applicants.

In 2008 and 2013, the IFM was evaluated by the AERES, whose conclusions were very positive. The current review period of the IFM is focused on 5 senior teams.

### MANAGEMENT TEAM

The IFM is headed by a director, Mr J.A. GIRAULT, and a deputy director, Ms F. FRANCIS

### HCERES NOMENCLATURE

SVE4 Neurosciences

### SCIENTIFIC DOMAIN

The IFM's scientific objective is to study the development and plasticity of the nervous system in mammals (mostly mice and human). This research aims at elucidating both the normal mechanisms and their alterations in major neurological and psychiatric diseases ('brain developmental disorders'), with the ambition to provide ideas for novel diagnostic or therapeutic methods. The IFM is comprised of research groups, performing their research along two axes:

a- Development: Cortical development and its alterations responsible for neurodevelopmental disorders is a focus of several groups including proliferation and changed fate of progenitors, neuronal migration, neurite outgrowth and synaptogenesis, motoneuron specification, as well as the development of cortical and serotonergic neurons including of human origin using iPSCs.

b- Plasticity: This includes neurotransmission and plasticity in the adult nervous system and their pathological and pharmacological alterations:: developmental alterations of serotonin (5HT) neurons and depression; role of the 5HT2B receptor in response to addictive and antidepressant drugs (SSRIs), role of this receptor in controlling microglia, and possible links with neuropsychiatric disorders; plasticity of GABA signalling in the hippocampal cortex ; intracellular signalling in striatal neurons in reward and motor control circuits and plasticity. The physiology and plasticity of lateral habenula neurons, which play a critical role in addiction and depression by controlling dopamine neurons has also been investigated in the unit.

### UNIT WORKFORCE

| Unit workforce                             | Number<br>30/06/2017 | Number<br>01/01/2019 |
|--|----------------------|----------------------|
| <b>Permanent staff</b>                     |                      |                      |
| Full professors and similar positions      | 1                    | 1                    |
| Assistant professors and similar positions | 7                    | 7                    |

|   |           |           |
|---|-----------|-----------|
| Full time research directors (Directeurs de recherche) and similar positions                    | 9         | 9         |
| Full time research associates (Chargés de recherche) and similar positions                      | 8         | 8         |
| Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.") | 0         | 0         |
| High school teachers  | 0         | 0         |
| Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)                               | 22        | 21        |
| <b>TOTAL permanent staff</b>  | <b>47</b> | <b>46</b> |
| <b>Non-permanent staff</b>  |           |           |
| Non-permanent professors and associate professors, including emeritus                           | 0         |           |
| Non-permanent full time scientists, including emeritus, post-docs                               | 15        |           |
| Non-permanent supporting personnel  | 3         |           |
| PhD Students  | 18        |           |
| <b>TOTAL non-permanent staff</b>  | <b>36</b> |           |
| <b>TOTAL unit</b>   |           |           |
|   | <b>83</b> |           |

## GLOBAL ASSESSMENT OF THE UNIT

The IFM was created as a Neuroscience Center ten years ago now, and is reaching an age of maturity, since it has established itself as an internationally acknowledged Institute. It is currently undergoing a transition phase in which several group leaders recently have left, are about to leave, or will leave in the next 5 years, such that key decisions on the scientific orientation of the Institute will have to be taken. This is, also an opportunity that appears to be well managed by the heads of the unit, in particular with the planning of new recruits based on thematically sound criteria (e.g. in vivo electrophysiology).

This is an institute with an exceptional international visibility, outstanding reputation, and excellent productivity. The scientific strategy and projects are outstanding. The unit is well managed, highly productive in terms of science and has coherent thematic axes.

The intellectual and scientific environment at the IFM is very attractive for scientists, as evidenced by the high number of applicants to the recently opened position, such that the IFM is poised to further develop itself as a beacon in developmental neuroscience and plasticity.

A strength of the IFM is its interdisciplinarity, in which the relatively small size of the unit favours interpersonal and scientific exchanges. Areas of expertise include genetics, molecular biology, cellular biology, biochemistry, neuroanatomy and electrophysiology.

Common facilities accessible to all the teams are a natural complement to these active forces. The core facilities are a key asset to the IFM's productivity.

There are many ongoing interactions/collaborations between the IFM research groups that positively impact on the scientific quality and productivity of the institute. The unit has excellent dynamic interactions with the non-academic world and an excellent program in training through research.

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