IC - Imagerie et cerveau

Rapport Hcéres

HCERES

High Council for the Evaluation of Research and Higher Education

Department of Research Evaluation

report on research unit:

Imaging and Brain

IC

under the supervision of the following institutions and research bodies:

Université François-Rabelais de Tours

Institut National de la Santé Et de la Recherche Médicale - INSERM

CHRU Hôpitaux de Tours - CHRU Tours

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,[1]

Michel Cosnard, president

In the name of the experts committee,[2]

Guy Goodwin, chairman of the committee

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

[1] The president of HCERES "countersigns the evaluation reports set up by the experts 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)

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:	Imaging and Brain
Unit acronym:	IC
Label requested:	UMR_S
Current number:	930
Name of Director (2016-2017):	Mr Denis GUILLOTEAU
Name of Project Leader (2018-2022):	Ms Catherine BELZUNG

Expert committee members

Chair:	Mr Guy GOODWIN, University of Oxford, UK
Experts:	Mr Jean-Francois AUBRY, Institut Langevin, Paris (representative of the CSS INSERM)
	Mr Claude DELPUECH, Université Claude Bernard, Lyon (representative of the supporting personnel)
	Ms Anna NEED, Imperial College, London, UK
	Mr Alain TREMBLEAU, Université Pierre et Marie Curie, Paris (representative of the CNU)
	Ms Jocelyne VENTRE-DOMINEY, Université Claude Bernard, Lyon
Scientific delegate representing the HCERES:	Mr Jacques NOËL
Representatives of supervising institutions and bodies:	Ms Marie-Noëlle GERAIN-BREUZARD, CHRU Tours
	Ms Marie-Louise KEMEL, INSERM
	Mr Philippe VENDRIX, University François-Rabelais de Tours

Heads of Doctoral Schools:

Mr Thierry MOREAU, Doctoral School n°549, «Santé, Sciences Biologiques et Chimie du Vivant »

Mr Francois TRAN VAN, Doctoral School n°552, « Énergie - Matériaux - Sciences de la terre et de l'Univers »

1 • Introduction

History and geographical location of the unit

The origins of the unit date back to 30 years ago, as a, then, unique collaboration between psychiatrists and biophysicists. It is located primarily within the CHRU of Tours, which reflects its original intention to apply cutting edge science to clinical problems. The current unit represents an important collaboration between CHRU, the Francois-Rabelais University of Tours and INSERM. It was last renewed in 2012.

Management team

The current director is Mr Denis GUILLOTEAU; Ms Catherine BELZUNG will head the unit in 2018, helped by a deputy director, Mr Ayache BOUAKAZ.

HCERES nomenclature

Domaine scientifique principal: SVE5 - Biologie, médecine et santé.

Domaine(s) scientifique(s) secondaire(s): ST5 Sciences pour l'ingénieur ; SVE2 Biologie cellulaire, Imagerie, Biologie Moléculaire, Biochimie, Génomique, Biologie Systémique, Développement, Biologie Structurale ; SVE4 Neurologie.

Scientific domains

The unit is dedicated to the application of imaging technologies to understanding the etiology and treatment of severe psychiatric disorder. The imaging approaches include Positron Emission Tomography (PET), Magnetic Resonance Imaging (MRI) and ultrasound. The unit contributes to the technical improvements in methodology including sophisticated statistical analysis of physical signals from the brain. The target disorders include, autism, treatment resistant depression and some selected neurological disorders. The approach of the clinical research is based on the identification of genetic, metabolic and neurocognitive biomarkers, with in some cases translation from animal models to the clinic.

Unit workforce

Unit workforce	Number on 30/06/2016	Number on 01/01/2018
N1: Permanent professors and similar positions	56 [21.7]	53 [20.9]
N2: Permanent researchers from Institutions and similar positions	5 [4.3]	6
N3: Other permanent staff (technicians and administrative personnel)	28 [22.5]	30 [24.5]
N4: Other researchers (Postdoctoral students, visitors, etc.)	12	
N5: Emeritus	1	
N6: Other contractual staff (technicians and administrative personnel)	8 [7.5]	
N7: PhD students	44	
TOTAL N1 to N7	**154 [113]**	
Qualified research supervisors (HDR) or similar positions	44	

Unit record	From 01/01/2011 to 30/06/2016
PhD theses defended	56
Postdoctoral scientists having spent at least 12 months in the unit	18
Number of Research Supervisor Qualifications (HDR) obtained during the period	13

2 • Assessment of the unit

Global assessment of the unit

The unit evolved from an essentially clinical focus, seeking to unite the emerging translational biology of neurodevelopmental, affective and neurodegenerative disorders through imaging, emphasizing technical excellence in imaging and the good links with relevant industrial partners. The previous evaluation report recommended more interactions between these teams and this resulted in the formation of cross-cutting groups to address particular scientific questions in the last three years. The unit has also had assistance from an independent Scientific Advisory Board. As a result of their advice and the successful evolution of the joint projects, it was decided to reform the management of the unit for the next contract as three teams which reflect the strengths and convergent interests of the groups. The change in structure also represents a change in strategy to align with recommendations in the previous evaluation to be more ambitious and to create a more unit-wide focus on important scientific question. The highlights of the unit's achievements include the identification of a simple biomarker of hyper-reactivity in autism, the identification of an important novel gene in autism, a new PET tracer for the dopamine transporter, a novel hypothesis to explain treatment resistance in major depression and the development of sonoporation as a technique for increasing drug delivery in vivo.

External funding over the last 5 years was 82% of the total budget. There has been increasing involvement by some of the teams in national, European and international networks or consortia. In recent years, IC has hosted important international meetings on autism and on ultrasound.