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## CERCO - Centre de recherche cerveau et cognition

Rapport Hcéres

► **To cite this version:**

Rapport d'évaluation d'une entité de recherche. CERCO - Centre de recherche cerveau et cognition. 2015, Université Toulouse 3 - Paul Sabatier - UPS, Centre national de la recherche scientifique - CNRS. hceres-02033876

**HAL Id: hceres-02033876**

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Submitted on 20 Feb 2019

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# HCERES

High Council for the Evaluation of Research  
and Higher Education

Research units

HCERES report on interdisciplinary unit:

Brain and Cognition Research Centre

CerCo

Under the supervision of the following  
institutions and research bodies:

Centre National de la Recherche Scientifique - CNRS

Université Toulouse 3 - Paul Sabatier – UPS

# HCERES

High Council for the Evaluation of Research  
and Higher Education

Research units

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

Didier HOUSSIN, president

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

David BURR, 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 result of the evaluation by the experts committee, the composition of which is specified below.

The assessments contained herein are the expression of an independent and collegial deliberation of the committee.

Unit name:	Brain and Cognition Research Centre
Unit acronym:	CerCo
Label requested:	UMR
Present no.:	5549
Name of Director (2014-2015):	Mr Simon THORPE
Name of Project Leader (2016-2020):	Mr Simon THORPE

## Expert committee members

Chair:	Mr David BURR, University of Florence, Italy
Experts:	Mr Frank BREMMER, University of Marburg, Germany
	Ms Jennifer COULL, University of Aix-Marseille
	Mr Luciano FADIGA, University of Ferrara, Italy
	Mr Mark GREENLEE, University of Regensburg, Germany
	Mr Pascal MAMASSIAN, École Normale Supérieure, Paris (representative of the CoNRS)
	Mr Denis VIVIEN, University of Caen (representative of the CNU)

### Scientific delegate representing the HCERES:

Mr Jacques NOËL, DS-SVE  
Ms Celine SOUCHAY, DS-SHS

### Representatives of the unit's supervising institutions and bodies:

Mr Pierre CELSIS, Université Toulouse 3 Paul Sabatier  
Ms Armelle BARELLI, Inserm  
Mr Pascal BARONE (representative of the Doctoral School n°326 CLESCO)  
Mr Jean-Louis VERCHER, CNRS

## 1 • Introduction

### History and geographical location of the unit

The Centre de Recherche Cerveau & Cognition (“Brain and Cognition Research Center”, or CerCo) is a CNRS Université Toulouse 3 laboratory, created in 1993 by Mr Michel LMBERT and a core group of researchers from Paris and Marseille. Mr Jean BULLIER was the director from 1998 to 2003, followed by Ms Michèle FABRE-THORPE in 2003. Mr Simon THORPE took over as head of the laboratory in January 2014.

The laboratory was originally located in the Medical School at Rangueil, to the southeast of Toulouse, close to the main university campus. The future of the lab was threatened by a number of problems including a serious lack of office space, animal house facilities that were totally incompatible with the new European laws, and extremely limited access to fMRI facilities. With a major investment from the CNRS, Inserm and the Midi-Pyrénées Regional authority, the lab moved to newly renovated premises within the Purpan Hospital complex in 2011-12. It shares the Pavillon Baudot with Inserm laboratory, Unit 825 “Inserm/UPS Imagerie cérébrale et handicaps neurologiques”, currently directed by Mr Pierre CELSIS.

The lab has grown almost continuously, and now has a total of 23 researchers (16 CNRS, 1 Inserm, 4 university lecturers, a hospital professor and another clinician), 8 technical support staff, and around 45 postdocs, doctoral students and support staff on short-term contracts.

### Management team

The unit has a governing body comprising the director and 10 other members, 4 nominated by the director and 6 elected, which meets monthly. There are currently four main research teams, each headed by a CNRS research director. Mr Pascal BARONE and Ms Caroline FONTA (both DR2 CNRS) currently head the Dytic 2.0 team (Processing Dynamics and Cortical Interactions), Mr Yves TROTTER (DR2 CNRS) heads the ECO-3D team (Space and 3D context), Mr Emmanuel BARBEAU (DR2 CNRS) has been leader of the PROS team (Perception and Recognition of Objects and Scenes) since January 2014, while Mr Rufin VAN RULLEN (DR2 CNRS) is the leader of CreMe (Construction of Mental States and Representations).

### HCERES nomenclature

SVE, LS5, SHS4\_2

### Unit workforce

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
<b>N1:</b> Permanent professors and similar positions	6	8
<b>N2:</b> Permanent researchers from Institutions and similar positions	17	16
<b>N3:</b> Other permanent staff (without research duties)	11	8
<b>N4:</b> Other professors (Emeritus Professor, on-contract Professor, etc.)		
<b>N5:</b> Other researchers (Emeritus Research Director, Postdoctoral students, visitors, etc.)	8	11
<b>N6:</b> Other contractual staff (without research duties)	4	4
<b>TOTAL N1 to N6</b>	46	47

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
Doctoral students	20	
Theses defended	19	
Postdoctoral students having spent at least 12 months in the unit	20	
Number of Research Supervisor Qualifications (HDR) taken	5	
Qualified research supervisors (with an HDR) or similar positions	11	

## 2 • Overall assessment of the interdisciplinary unit

### Global assessment of the unit

CerCo is a world-class center of cognitive science, staffed by creative and productive scientists of high international visibility, producing excellent well-cited research published in good international scientific journals. Much of the research is financed by prestigious national and international grants.

The approach of the laboratory is fundamentally interdisciplinary and holistic, with expertise in almost all state-of-the-art brain recording techniques. It is rare to find such a range of techniques and approaches within the same laboratory, integrated within a common general purpose.

The laboratory is well managed, creating a pleasant and productive work atmosphere. They have exciting plans for research over the next five years, continuing their more successful lines of research, and branching into new terrain. They also intend to start a new, innovative masters program. CerCo is very likely to continue in its role as a major international player over the next five years, and beyond.

### Strengths and opportunities in relation to the context

There are many obvious strengths to the unit. Some that clearly emerge are:

1. the high quality and productivity of the research scientists;
2. the international visibility of the scientists;
3. the research lines addressing important and topical issues;
4. the quantity of solid publications in good journals in the field, many of which are highly cited;
5. excellent funding from both national and international sources, including two ERCs and several other prestigious grants;
6. highly interdisciplinary and integrative approach: from cortical micro-vascularization to “mind-wandering”;
7. expertise in almost all state-of-the-art neuroscientific techniques (in humans and in animal models), including imaging (both fMRI and PET), EEG, TMS, psychophysics and computational modeling. The lab is unique in bringing together at the same location many different disciplines and expertise converging on similar scientific problems;
8. many horizontal themes running across all teams, fostering collaboration and efficient use of equipment;
9. the ability to attract new CNRS researchers (both french and international), and good graduate students;
10. the research environment is very pleasant and collaborative, as well as efficient;

11. the laboratory is well managed along democratic lines, following modern managerial procedures;

12. they have excellent new facilities, now running smoothly after some down-time after the move from the former location;

13. excellent record of placement of PhD students, mainly in research positions both in academia and industry.

Opportunities:

1. the teams are well integrated with the local universities, and the links are improving. The proposed new Masters course is innovative, will attract further highly talented students also from abroad and will greatly strengthen the unit;

2. they have access to well-maintained, in-house imaging facilities. Now that most of the gestational difficulties have been ironed out, they should soon start reaping results;

3. they have strong links with industry, which has resulted in successful startups, and shows promise to continue to do so.

### Weaknesses and threats related to the context

The main threat to productivity that emerged was maintaining the ratio of technical-administrative staff to permanent researchers. This is essential for maintenance of key research structures and efficient management.

### Recommendations

As the unit is basically functioning well, both from a scientific and managerial point of view, we have very few suggestions to make. Many issues were discussed with the director, who is clearly on top of the situation. More detailed comments are given in the team-by-team analysis, but the three main suggestions are:

1. reinforce the technical and administrative support, to ensure smooth running of key areas of research and management;

2. consider rotating team-leadership, particularly where the team leader has served for some time, to ensure younger members obtain experience in management and leadership;

3. two small teams have been added. We suggest that the efficacy of these teams be assessed by interim evaluation. They have clear potential, but this should be verified.