



Research evaluation

FINAL RESUME ON THE INTERDISCIPLINARY RESEARCH UNIT:

Brain and Cognition Research Center - CerCo

UNDER THE SUPERVISION OF THE FOLLOWING INSTITUTIONS AND RESEARCH BODIES:

Centre national de la recherche scientifique - CNRS

Université Toulouse 3 - Paul Sabatier - UPS

EVALUATION CAMPAIGN 2019-2020 GROUP A

Report published on March, 11 2020



In the name of Hcéres¹:

Nelly Dupin, acting President

In the name of the experts committee²:

Anna Christina (Kia) Nobre, Chairwoman of the committee

Under the decree No.2014-1365 dated 14 November 2014,

¹ The president of Hcéres "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 experts committee". (Article 11, paragraph 2).

Tables in this document were filled with data submitted by the supervising body on behalf of the unit.

UNIT PRESENTATION

Unit name:	Brain and Cognition Research Center
Unit acronym:	CerCo
Current label and N°:	UMR 5549
ID RNSR:	199311991U
Application type:	Restructuration
Head of the unit (2019-2020):	Mr Simon THORPE
Project leader (2021-2025):	Ms Isabelle BERRY
Number of teams and/or themes:	6

EXPERTS COMMITTEE MEMBERS

Chair:	Ms Anna Christina (Kia) NOBRE, University of Oxford, United Kingdom
Experts:	Ms Elise BANNIER, CHU Rennes (supporting personnel) Mr Frank BREMMER, University of Marburg, Germany Ms Sylvie CHOKRON, CNRS Paris Ms Nathalie GEORGE, CNRS Paris (representative of CoNRS) Mr Régis LAMBERT, Sorbonne Université (representative of CNU) Mr Jean-Philippe RANJEVA, Aix-Marseille Université Mr Thierry VIEVILLE, Inria Sophia-Antipolis

HCÉRES REPRESENTATIVE

Ms Céline SOUCHAY

REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

Ms Armelle BARELLI, INSERM, Délégation régionale
Mr Marc PENAUD, CHU Toulouse (partenaire)
Mr Bernard POULAIN, CNRS
Ms Odile SECHOY-BALUSSOU, CHU Toulouse (partenaire)

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The Centre de Recherche Cerveau et Cognition (CerCo) is a joint CNRS - Université Toulouse 3 laboratory. The lab was created in 1993 by Professor Michel IMBERT and a core group of researchers who moved from Paris and Marseille. Jean BULLIER was the director from 1998 to 2003. He was replaced by Michèle FABRE-THORPE in 2003 following a tragic stroke that left Jean unable to speak, read or write. After over 10 years with Michèle as director, Simon THORPE took over as head of the laboratory in January 2014, and will continue to direct the lab until the end of 2020. The proposal is that Isabelle Berry will then take over directorship of the lab.

The laboratory was originally located in the Medical School at Rangueil, to the southeast of Toulouse, close to the main university campus. This site suffered numerous problems and challenges, such as the incompatibility of the animal facilities with new European laws and lack of space for the technologies and researchers. After significant investment from the CNRS, Inserm, and the Midi-Pyrénées Regional authority, the lab moved to its current premises within the Purpan Hospital complex in 2011-12. It shares the Pavillon Baudot with Inserm laboratory Toulouse Neuroimaging Centre (TONIC), directed by Pierre PAYOUX. It is part of the Toulouse Mind & Brain Institute (TMBI) that was set up by Simon THORPE in 2016. The Cerco is also part of the recently founded ANITI (Artificial and Natural Intelligence Toulouse Institute) through a research chair awarded to one of the NeuroAI team members and it has several research lines directly relevant to the INSPIRE research initiative on healthy ageing identified as a high priority domain and funded by the Région Occitanie.

MANAGEMENT TEAM

Current Unit director: Simon THORPE

Deputy director: Isabelle Berry

Future Unit director: Isabelle BERRY

HCÉRES NOMENCLATURE

SVE4_1; SHS4_2; SHS4_4; ST6_3; ST6_1.

THEMATICS

There are currently six teams at CerCo, with a proposal to reorganise the research into five new teams during the next period. Thematics cover multisensory integration using an integrative approach including animal models and human research combining a variety of approaches, spatial vision in human and non-human primate using an interdisciplinary approach that combines behavioral recordings (psychophysics), neuroimaging (fMRI in both human and macaque), computational modeling and clinics. Research in the teams also focuses on memory and learning as well as the relationship between action and learning. Furthermore, the lab also develops projects using using multimodal non-invasive imaging methods to study brain ageing in marmosets.

UNIT WORKFORCE

Name of the unit: Centre de Recherche Cerveau & Cognition		
Active staff	Number 30/06/2019	Number 01/01/2021
Full professors and similar positions	5	6
Assistant professors and similar positions	4	6
Full time research directors (Directeurs de recherche) and similar positions	7	7
Full time research associates (Chargés de recherche) and similar positions	12	11
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	3	4
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	7	7
Permanent staff	38	41
Non-permanent professors and associate professors, including emeritus	1	
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)	1	
PhD Students	23	
Non-permanent supporting personnel	6	
Non-permanent staff	31	
Total	69	41

GLOBAL ASSESSMENT OF THE INTERDISCIPLINARY UNIT

The Centre de Recherche Cerveau & Cognition (CerCo) is an internationally recognised research centre in behavioural and cognitive neuroscience. Since its establishment in 1993, CerCo has continued to grow and to expand its international reputation as a research laboratory that brings significant conceptual and methodological advancements to the field. Its hallmark is that of adopting a multi-methodological, computational and integrative approach. Teams across the laboratory combine multiple methods (e.g., behavioural, neuropsychological, neuroimaging, neurophysiological, stimulation) to obtain converging evidence and triangulate their research questions. Furthermore, human research is enriched and deepened by research on animal models and by computational modelling. Their research has brought significant contributions to our understanding of fundamental psychological and brain functions (e.g., the rapid and effortless recognition of complex scenes, the regulation of perception by brain rhythms, and brain reorganisation following rehabilitation of sensory deficits). In addition, although the core research of the laboratory is in discovery science, CerCo's researchers have been proactive and highly effective in translating their acquired knowledge and methods into social benefit – both through clinical applications, such as in the domains of ageing and neurological disorders, as well as through technological innovations, such as by developing new algorithms and approaches for digital platforms and artificial intelligence.

The location of the lab within the Purpan complex and its adjacency to TONIC (UMR 1214) are considered optimal from both the perspective of the laboratory and with regard to the strategy of the CNRS, Inserm, and the hospital complex. Co-location with the TONIC laboratory provides the perfect opportunity for sharing of complementary expertise and methodology. The relations between the laboratories are positive and of mutual benefit. The situation of both labs on the Purpan clinical campus brings cutting-edge research on the brain (and mind) and brain imaging into a close and mutually beneficial relationship with brain-related clinical practice and with the relevant patient cohorts. The evaluation committee, in agreement with CerCo members, is strongly supportive of maintaining the laboratory in its current location.

By any measure, CerCo has been highly successful in fulfilling its research mission. Their peer-reviewed publications constitute a primary measure of their outputs. During this review period, the unit has published an impressive amount of scientific papers, with the vast majority in highly ranked journals. They have also contributed to books, organised and participated in a large number of international conferences and workshops, and produced computer products and tools. Nearly forty doctoral theses were completed during the period. Researchers have also been successful in securing competitive grants. The unit is in a position to benefit from major collaborative research initiatives in Artificial Intelligence and in Healthy Ageing. CerCo is well poised to make significant unique contributions to both of these initiatives.

CerCo is well known for its international, collaborative, and congenial environment. The centre has a good record on maintaining and promoting gender balance, and in mentoring and training young researchers. It has attracted several new tenured researcher / lecturer / professor / clinician staff in the evaluation period, assessing its attractivity. During the site visit, the committee was delighted to meet a very happy and proactive community of postdoctoral fellows and students who felt well supervised and supported by caring and accessible senior colleagues. They had regular contact with their supervisors and received appropriate career-development advice. They also organized many useful activities for exchanging scientific ideas and skills.

The evaluation reports of Hceres
are available online : www.hceres.com

Evaluation of clusters of higher education and research institutions
Evaluation of higher education and research institutions
Evaluation of research
Evaluation of doctoral schools
Evaluation of programmes
International evaluation and accreditation



2 rue Albert Einstein
75013 Paris, France
T. 33 (0)1 55 55 60 10

hceres.com

[@Hceres_](https://twitter.com/Hceres_)

[Hcéres](https://www.youtube.com/Hceres)