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High Council for the Evaluation of Research and Higher Education

Research units

HCERES report on research unit:

Research Center on Animal Cognition

CRCA

Under the supervision of the following institutions and research bodies:

Université Toulouse 3 - Paul Sabatier - UPS

Centre National de la Recherche Scientifique - CNRS

Evaluation Campaign 2014-2015 (Group A)

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<div style="text-align:center">Research units</div>

In the name of HCERES,[1]

Didier HOUSSIN, president

In the name of the experts committee,[2]

Martine HAUSBERGER, chairwoman of the
committee

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:	Research Center on Animal Cognition
Unit acronym:	CRCA
Label requested:	UMR
Present no.:	5169
Name of Director (2014-2015):	Mr Martin GIURFA
Name of Project Leader (2016-2020):	Mr Martin GIURFA

Expert committee members

Chair:	Ms Martine HAUSBERGER, Université de Rennes 1
Experts:	Ms Fabienne AUJARD, CNRS, Brunoy (CoNRS representative)
	Mr Jérôme ESTAQUIER, Université de Laval, Québec, Canada
	Ms Heike FELDHAAR, Bayreuth University, Germany
	Ms Sylvie GRANON, Centre de Neuroscience Paris Sud (CNU representative)
	Mr Claudio LAZZARI, Université François Rabelais de Tours
	Mr Gonzalo DE POLAVIEJA, Cajal Institute, Madrid, Spain

Scientific delegate representing the HCERES:

Mr Jean-François HOCQUETTE

Representatives of the unit's supervising institutions and bodies:

Mr Hervé RÉMIGNON (deputy director of the doctoral school 458 SEVAB « Sciences écologiques, vétérinaires, agronomiques et bioingenieries »)

Mr Alexis VALENTIN, Université Toulouse 3

Mr Philippe VALET (director of the doctoral school 151 BSB « Biologie, santé, biotechnologies »)

Mr Jean-Louis VERCHER, CNRS, INSB

1 ● Introduction

History and geographical location of the unit

The CRCA is located at the University Paul Sabatier of Toulouse and is a mixed unit belonging both to this university and the CNRS. It was created on January 1st 2003. The unit belongs to the field of Neurosciences (section 69 of the CNU, section 26 of the CNRS). The unit has been renewed three times and has been under the direction of Prof Mr Martin GIURFA since its creation. It was evaluated A+ at the last HCERES evaluation.

While up to now, the group was organized around three teams focusing respectively on insect learning and memory, rodent learning and memory and collective behaviour in animals, the new project involves 5 teams, two originating from the division of a former team and one moving from another CNRS unit to the CRCA.

The project of the unit is strongly related to the emergence on the site of Toulouse of a "Center of Integrative Biology (CIB)"; This center corresponds to a research federation that will include 5 different units which will develop common researches along different axes. The CRCA will be leader of the neuroscience and the computational and systems biology axes while contributing to the other axes. In this context, the CRCA will also on a short term benefit of a new building which will host also other units of the CIB and lead to the creation of a new rodent platform. Since its creation, the CRCA has been involved in the study of animal cognition from detailed neurobiological processes to behavioural aspects. In the new project, all teams are focusing on phenotypic plasticity from subcellular/cellular levels to the organism or group level on different models.

Management team

The management team proposed is Prof Mr Martin GIURFA as director and Dr Claire RAMPON (director of research at CNRS) (in replacement of B. FRANCES) as deputy director. They were elected through a vote of all permanent staff members. Each proposed team has one or two identified leader(s): Mr Martin GIURFA and Mr Jean-Marc DEVAUD for the team EXPLAIN (Experience dependent plasticity in insects), Ms Claire RAMPON for the team REMEMBeR (Revealing memory mechanisms of the brain), Ms Pascale BELENGUER for the team MINDING (Mitochondria and experience-dependent plasticity, neurodegeneration), Mr Vincent FOURCASSIÉ for the team CAB (Collective animal behavior) and Mr Raphael JEANSON and Ms Audrey DUSSUTOUR for the team IVEP (Individual variability and emergent plasticity). The management team as a whole benefits from a strong scientific recognition. The team leaders are involved with the director and deputy director in a "Directory advisory board" whose proposals are then examined by the unit council which helps the director in terms of decisions.

HCERES nomenclature

Principal: SVE1_LS5 Neurobiologie

Secondary: SVE2_LS8 Évolution, écologie, biologie des populations

Unit workforce

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
N1: Permanent professors and similar positions	16	17
N2: Permanent researchers from Institutions and similar positions	12	12
N3: Other permanent staff (without research duties)	10	10
N4: Other professors (Emeritus Professor, on-contract Professor, etc.)	2	2
N5: Other researchers (Emeritus Research Director, Postdoctoral students, visitors, etc.)	5	4
N6: Other contractual staff (without research duties)	1	
TOTAL N1 to N6	**46**	**45**

Unit workforce	Number as at 30/06/2014	Number as at 01/01/2016
Doctoral students	24	
Theses defended	34	
Postdoctoral students having spent at least 12 months in the unit	7	
Number of Research Supervisor Qualifications (HDR) taken	5	
Qualified research supervisors (with an HDR) or similar positions	17	18

2 ● Overall assessment of the unit

Global assessment of the unit

The Research Center on Animal Cognition (CRCA) is an extremely competitive research unit in the field of animal cognition, neuroscience, animal behaviour and computational biology. One of its originalities is to have a multilevel approach from the finest neurobiological levels to the integrated level of the organism and its behavior, and even collective behavior, which will still be reinforced in the new scheme, with at short term the integration of a new team who works on the role of mitochondria on plasticity, but also at medium term (2017), with the integration of the unit at the CIB (Center of Integrative Biology). This research federation will be composed of 5 research units where cell and molecular biology will add to the more integrative neurobiological and computational / systems biology.

This project reflects the high scientific dynamism of the group and its high international scientific recognition. The whole group has a high record of publications in high level journals (e.g. 6 PNAS) and has produced more than 200 papers in the last 5 years. It has obtained funding from different sources amongst which 20 ANR grants as well as a number of awards given to several members of the unit, in particular to some of the younger scientists.

The unit is at present amongst the largest and one of the most recognized research groups devoted to animal cognition at the international level. Its important discoveries on perception, learning and memory as well as collective behaviours justify the high level of recognition which has been attained. Training of PhDs is important and ensures the transmission of this high level scientific culture. The project proposed is original and highly promising, focusing on phenotypic and experience-dependent plasticity and being a multilevel approach.

Strengths and opportunities in relation to the context

The CRCA is an extremely well recognized research unit in the fields of animal cognition, neuroscience, animal behaviour and computational biology. Unit members have won a number of prizes and awards that, in addition to numerous invitations to give conferences, responsibilities in international or national collaborative networks, reflect this high level of national and international scientific recognition. It is also very attractive for French and foreign PhD students and postdocs.

This reputation relies of course upon the quality of their scientific production in terms of quantity and quality, which involves some publications in the highest ranking journals. The unit is at the origin of real scientific breakthroughs, in particular thanks to its original multilevel approach, which will still be reinforced by the arrival of a new team that will broach the subcellular level while focusing, with the other teams on plasticity. An originality is the use of a variety of animal species amongst which "non classical" animal models.

The integration of the CRCA at the research federation CIB gives the access to new tools and will enable the extension of the existing multilevel approach still more down towards detailed mechanisms. It already also brings new possibilities in terms of funding, and the access to a new building is an obvious rapid benefit.

Weaknesses and threats related to the context

The threats that can be evoked are precisely related to the integration to the CIB as questions arise in terms of mutualisation of staff, with potential loss of leadership by the CRCA, the risk of a lower visibility for the higher level approaches and hence the future of some teams within this center. Since 4 out of the 5 units composing the federation are at lower levels of integration, the risk exists that the organismic level becomes less visible or supported.

Recommendations

The high visibility of the CRCA should be maintained through a coherent grouping within the future CBI. One step could be to favor still more the collaboration between teams of the CRCA through more interteam publications.