

FINAL RESUME ON THE RESEARCH UNIT:

Laboratory of Biometry and Evolutionary
Biology (LBBE)

UNDER THE SUPERVISION OF THE FOLLOWING INSTITUTIONS AND RESEARCH BODIES:

Université Claude Bernard Lyon 1 – UCBL
Centre National de la Recherche Scientifique
– CNRS
VetAgro Sup

EVALUATION CAMPAIGN 2019-2020 GROUP A



In the name of Hcéres¹:

Nelly Dupin, Acting
President

In the name of the experts committee²:

Max Reuter, Chairman 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 the unit.

UNIT PRESENTATION

Unit name:	Laboratory of Biometry and Evolutionary Biology
Unit acronym:	LBBE
Current label and N°:	UMR 5558
ID RNSR:	199411998X
Application type:	Fusion, scission, restructuring
Head of the unit (2016-2020):	Mr Manolo GOUY
Project leader (2021-2025):	Mr Fabrice VAVRE
Number of departments:	4

EXPERTS COMMITTEE MEMBERS

Chair:	Mr Max REUTER, University College London, United Kingdom
Experts:	Mr Jacques BENICHOU, CHU de Rouen
	Ms Alessandra CARBONE, Sorbonne Université, Paris
	Mr Sébastien COLIN, CNRS, Roscoff (supporting personnel)
	Mr Bruno ERNANDE, IFREMER, Boulogne-sur-Mer
	Mr Frédéric GRANDJEAN, Université de Poitiers (representative of CNU)
	Mr François MEURENS, ONIRIS, Nantes (representative of Cneca CSS)
	Ms Ana RIVERO-LYNCH, CNRS, Montpellier (representative of CoNRS)

HCÉRES REPRESENTATIVE

Ms Pascale GARCIA

REPRESENTATIVES OF SUPERVISING BODIES

Mr Didier Bouchon, CNRS

Mr Jean-François Mornex, Université Claude Bernard Lyon

Ms Estelle Loukiadis, VetAgro Sup

INTRODUCTION

HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The Laboratory of Biometry and Evolutionary Biology (LBBE) is a research and teaching unit run by three parent institutions, University Lyon 1 Claude Bernard (UCBL), CNRS and VetAgro Sup ('tutelle principale'), with INRIA and the Hospices Civils de Lyon as partner institutions. The LBBE has its origins in the 'Laboratoire de Biometrie', founded in 1966. Since its inception, the unit has had a multi-disciplinary ethos, combining the development of quantitative approaches to biology (biometry) with their application in a range of fields. Currently, research at the LBBE covers evolutionary ecology, molecular genetics, molecular evolution and digital health at the interface with statistics and computer science. The unit is spread across four university and hospital sites in Greater Lyon, with the main activities being concentrated on the La Doua campus of University Lyon 1 Claude Bernard (UCBL). This site is currently undergoing redevelopment and the unit will be able to move into new laboratory and office spaces in 2021.

The LBBE is integrated in and contributes to a number of research structures at the local, national and international level. The unit is deeply connected with its host university UCBL, whose president and two vice-presidents are members of LBBE. The unit is also involved in inter-institutional initiatives, such as the 'Target University' project. Locally and regionally, the LBBE is part of the BioEnviS Research Federation, which supports research infrastructure (e.g., the bioinformatics platform PRABI, the molecular biology core facility DTAMB, or animal and plant breeding facilities). It also contributes to clinical research by providing personnel, scientific leadership and oversight, and training of practitioners via the Public Health Department.

The unit is implicated in and accesses funding from a number of national initiatives to foster scientific excellence and innovation. An LBBE member co-directs the 'Laboratory of Excellence' (LabEx) Ecofect, which in turn has provided funding for LBBE-run research projects. Further projects are financed via 'Investment for the Future Programmes' (PIA Bioinformatics funding for the Ancetrome project) and regional initiatives (Lyon IDEX) and LBBE staff and research groups are part of a number of national research consortia (GDRs 'Phenotypic Plasticity', 'Statistical Ecology', 'Molecular Bioinformatics' and 'Interdisciplinary Approaches to Molecular Evolution', RTP 'Epigenetics in Ecology and Evolution'). The LBBE further contributes to national scientific structures by providing members to a number of bodies (CoNRS, scientific council of CNRS/INEE, CNU, INRIA administration council, the scientific committees of ONCFS and several natural parks).

At the international level, the LBBE is involved in several trans-national research networks (international INRIA project ERABLE, 'Laboratoire International Associé' LIRIO, International Research Unit REHABS and the European Clinical Research Infrastructure network) and contributes to the global scientific community via editorships at international journals, training of foreign early-career researchers and collaborative work and publications with academics from across Europe, North America and Africa.

Management team

Under its current contract, the unit is directed by Manolo GOUY. The director is assisted by a direction committee that also includes the heads of the four scientific departments Dominique ALLAINÉ (EE), François GUEYFFIER (BMHE), Fabrice VAVRE (GINSENG), Dominique MOUCHIROUD (PEGASE) and the head of the administrative centre Nathalie ARBASETTI.

HCÉRES NOMENCLATURE

SVE1 Agronomie, biologie végétale, écologie, environnement, évolution

SVE2 Biologie cellulaire, imagerie, biologie moléculaire, biochimie, génomique, biologie systémique, développement, biologie structurale

SVE5 Physiologie, physiopathologie, cardiologie, pharmacologie, endocrinologie, cancer, technologie médicale

THEMATICS

The overarching theme of research in the LBBE is biometry, the application of quantitative methods to biological and biomedical data. Under this umbrella, the work falls into four major topics that correspond to the four departments within the unit.

PEGASE (renamed 'GECO' in the future contract) studies the interplay between evolution and function to better understand molecular evolution (the change of DNA sequences over time). This is mainly achieved

by developing and applying novel computational approaches to analyse sequence data, but also involves the generation of such data using modern high-throughput techniques.

Staff in GINSENG (COEVOL) investigate the relationship between genotype and phenotype. Particular emphasis is put on the interplay between different (and sometimes competing) genetic entities that make up the individual, for example in the case of symbiosis or hosts and pathogens. The research uses a range of approaches, including field work, experimentation, genetics and computation.

The Evolutionary Ecology department (EE) addresses questions at yet a higher level of organization and explores how evolution is shaped by the interaction of organisms with their abiotic and biotic environment, such as ecological competitors and pathogens. The research uses field work, including long-term monitoring of populations, morphometrics and demographic inference, with work to improve and create methods also carried out by members of the department.

Research in BMHE (BMHS) develops and applies quantitative approaches in the fields of biomedicine. Some of the work is carried out with a close focus on and in close integration with clinical applications, to assess the efficacy of medical interventions and optimize the outcomes. As elsewhere in LBBE, statistical and modelling approaches play a central role in the research carried out in the department.

UNIT WORKFORCE

Laboratory of Biometry and Evolutionary Biology (LBBE)		
	Number 06/30/2019	Number 01/01/2021
Active staff		
Full professors and similar positions	26	24
Assistant professors and similar positions	28	29
Full time research directors (Directeurs de recherche) and similar positions	17	16
Full time research associates (Chargés de recherche) and similar positions	20	17
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	0	
High school teachers	0	
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	34	35
Permanent staff	125	121
Non-permanent professors and associate professors, including emeritus	2	
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)	6	
PhD Students	51	
Non-permanent supporting personnel	8	
Non-permanent staff	67	
Total	192	121

GLOBAL ASSESSMENT OF THE UNIT

The LBBE is a large, research-active unit with an international reputation for excellence in the application of quantitative methods to problems in the fields of evolutionary biology and health. The laboratory has continued to perform strongly over the past contract period, producing a large number of scientific articles in world-leading journals and a range of freely distributed software programs, and attracting a significant amount of external research funding, mainly from national sources.

The unit is well integrated into the local, national and international research landscape through a number of collaborative initiatives and networks and links in with the non-academic world through collaborations with industry (e.g., Cifre doctoral fellowships, start-ups), applied research in health and the environment or involvement in public bodies (e.g., scientific councils of national parks).

The LBBE offers outstanding research training with a very large number of PhD students and involvement in a number of Masters programmes. Graduate students are embedded in a dynamic research environment and are highly productive in terms of publications. The unit thus provides its students with a solid foundation on which to build future careers in and outside academic research.

In terms of its organization, the unit is efficiently, democratically and transparently managed by a steering committee that comprises delegates of the member departments and representatives of the support staff and complies with rules regarding scientific integrity, gender parity, health and safety and environmental concerns. In parallel to governance structures, a dedicated programme of activities aims at fostering communication and collaboration within and across departments.

The project for the coming five-year contract is essentially a continuation of the activities in the previous period, with some minor rearrangements in the departmental structure. The evaluation panel therefore had no doubt that the LBBE will remain a highly productive and internationally competitive unit. There is also potential for growth and development with the unit's move into newly refurbished spaces on the La Doua campus.

To enable the LBBE to maximally exploit this opportunity, the panel recommends measures to increase the unit's success in securing European funding, a weakness in the past review period. Furthermore, there is a continued need for increased technical support staff, to follow the growth in the number of researchers.

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