

## FINAL RESUME ON THE RESEARCH UNIT:

Reproduction et Développement des Plantes  
(RDP)

## UNDER THE SUPERVISION OF THE FOLLOWING INSTITUTIONS AND RESEARCH BODIES:

ENS de Lyon

Université Claude Bernard Lyon 1 - UCBL

Centre National de la Recherche Scientifique -  
CNRS

Institut National de la Recherche pour  
l'Agriculture, l'Alimentation et l'Environnement -  
INRAE

Institut National de la Recherche en  
Informatique et Automatique - Inria

---

## EVALUATION CAMPAIGN 2019-2020 GROUP A



In the name of Hcéres<sup>1</sup>:

Nelly Dupin, Acting  
President

In the name of the experts committee<sup>2</sup>:

Andrew Fleming, Chairman of the committee

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

<sup>1</sup> The president of Hcéres "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 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

<b>Unit name:</b>	Reproduction et Développement des Plantes
<b>Unit acronym:</b>	RDP
<b>Current label and N°:</b>	UMR 5667
<b>ID RNSR:</b>	200317442A
<b>Application type:</b>	Renewal
<b>Head of the unit (2019-2020):</b>	Mr Teva VERNOUX
<b>Project leader (2021-2025):</b>	Ms Gwyneth INGRAM
<b>Number of teams and/or themes:</b>	9

## EXPERTS COMMITTEE MEMBERS

<b>Chair:</b>	Mr Andrew FLEMING, University of Sheffield, United Kingdom
<b>Experts:</b>	Ms Cécile BOUSQUET-ANTONELLI, CNRS, Perpignan (representative of CoNRS)
	Mr Emmanuel DE LANGRE, École polytechnique, Palaiseau
	Ms Béatrice DENOYES, INRAE, Bordeaux (supporting personnel)
	Ms Veronica GRIENEISEN, Cardiff University, United Kingdom
	Mr Nick MONK, University of Sheffield, United Kingdom
	Mr Richard NAPIER, University of Warwick, Coventry, United Kingdom
	Ms Catherine RAMEAU, INRAE, Versailles (representative of INRAE CSS)
	Mr Robert SABLowski, John Innes Centre, Norwich, United Kingdom
	Mr Bruno TOURAINE, Université de Montpellier (representative of CNU)

## HCÉRES REPRESENTATIVE

Mr Steven BALL

## REPRESENTATIVES OF SUPERVISING BODIES

Mr Thierry DAUXOIS Ecole Nationale Supérieure de Lyon  
 Mr Jean-François MORNEX, Université de Lyon  
 Ms Catherine RECHENMANN, CNRS  
 Mr Norbert ROLLAND, INRAE

# INTRODUCTION

## HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The laboratory of Reproduction and Development of Plants (RDP) is a mixed research unit, funded by the CNRS, INRA, ENS de Lyon, and the UCBL (University Lyon1). It is located on the Monod campus of the ENS de Lyon at Gerland (Lyon). The Laboratory, created in 1993, has been headed successively by Christian Dumas (1993-2006), Jan Traas (2007- 2015) and Teva Vernoux (since 2016). Its research, initially exclusively focused on reproductive biology and fertilization has gradually moved towards more general developmental biological issues, although a strong focus on floral biology, reproductive stages and seeds has remained. In the last ten years, it has also developed a strong expertise in systems biology, biophysics and genomics that has significantly expanded the range of approaches used in the laboratory. As part of this evolution, the laboratory has also developed an association with INRIA (National Institute for Applied Mathematics and Computer Sciences) and hosts an INRIA team since 2018.

## Management team

Head of Unit: Teva VERNOUX

Deputy Heads: Gwyneth INGRAM and Françoise MONÉGER

## HCÉRES NOMENCLATURE

SVE1\_1 Biologie cellulaire et biologie du développement végétal

## THEMATICS

The unit is focused on 9 main research themes which encompass a broad area of plant cell, molecular and developmental biology, with an emphasis on aspects of reproduction and seed biology, with a strong underpinning in the area of plant mechanics and morphogenesis. These themes are:

- 1: Hormone signaling and development
- 2: Cell signaling
- 3: Mechanotransduction in development
- 4: Epigenetics, chromatin and development
- 5: Flower morphogenesis
- 6: Evolution and development of the flower
- 7: Seed development
- 8: Biophysics of development
- 9: Morphogenesis simulation and analysis in silico

## UNIT WORKFORCE

<b>Reproduction et Développement des Plantes (RDP)</b>		
<b>Active staff</b>	<b>Number 06/30/2019</b>	<b>Number 01/01/2021</b>
Full professors and similar positions	4	4
Assistant professors and similar positions	0	5
Full time research directors (Directeurs de recherche) and similar positions	11	11
Full time research associates (Chargés de recherche) and similar positions	12	13
Other scientists ("Conservateurs, cadres scientifiques des EPIC, fondations, industries, etc.")	0	0
High school teachers	0	0
Supporting personnel (ITAs, BIATSSs and others, notably of EPICs)	32	30
<b>Permanent staff</b>	<b>59</b>	<b>63</b>
Non-permanent professors and associate professors, including emeritus	2	
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)	13	
PhD Students	15	
Non-permanent supporting personnel	15	
<b>Non-permanent staff</b>	<b>45</b>	
<b>Total</b>	<b>104</b>	<b>63</b>

## GLOBAL ASSESSMENT OF THE UNIT

The RPD performs research in the broad area of plant molecular and developmental biology, with an emphasis on plant reproduction and fertilization. It consists of 9 research groups which collaborate both nationally and internationally to generate fundamental knowledge and understanding of how plants function. The work has relevance to national and international efforts to improve crop performance in the face of the ongoing challenges presented by climate change and a burgeoning global population.

The main topics are: (i) Hormone signaling and development; (ii) Cell signalling; (iii) Mechanotransduction in development; (iv) Epigenetics, chromatin and development; (v) Flower morphogenesis; (vi) Evolution and development of the flower; (vii) Seed development; (viii) Biophysics of development; (ix) Morphogenesis simulation and analysis *in silico*. Overall, the scientific output and academic reputation of the Unit is outstanding. Some sub-groups have the potential to increase international collaborations, but taken as a whole the academic performance is world-class. The interactions of the Unit with the non-academic world are very good overall, with some excellent examples of collaborations with crop breeders and technology transfer companies upon which to build wider future interactions. Broadening these interactions will enable further impact of the Unit's research. The Unit is very active in training and education through research and this was considered excellent. In terms of Unit organisation and life, the general management of human resources and scientific policy was found to be excellent despite a background of increasing administrative load. Areas for improvement include addressing this balance of research and administrative work within the unit. The five-year project and strategy is excellent to outstanding and combines both a solid progression on established research foundations and newer more high risk/high reward research areas to be explored over the next review period.

Overall, this is an excellent to outstanding Unit performing research and training to a very high level.

The evaluation reports of Hceres  
are available online : [www.hceres.com](http://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](http://hceres.com)

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

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