

FINAL RESUME ON THE RESEARCH UNIT  
FRI - Fungal Respiratory Infections

UNDER THE SUPERVISION OF THE  
FOLLOWING INSTITUTIONS AND  
RESEARCH BODIES:

Université d'Angers

Université de Bretagne Occidentale - UBO

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**EVALUATION CAMPAIGN 2020-2021**  
GROUP B



In the name of Hcéres<sup>1</sup>:

Mr Thierry Coulhon, President

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

Mr Guilhem Janbon, 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 certified data submitted by the supervising body on behalf of the unit.

## UNIT PRESENTATION

<b>Unit name:</b>	Fungal Respiratory Infections
<b>Unit acronym:</b>	FRI
<b>Current label and N:</b>	EA3142
<b>ID RNSR:</b>	200014441B
<b>Application type:</b>	Renewal
<b>Head of the unit (2020-2021):</b>	Mr Jean-Philippe Bouchara
<b>Project leader (2021-2025):</b>	Mr Nicolas Papon
<b>Number of teams:</b>	1

## EXPERTS COMMITTEE MEMBERS

<b>Chair:</b>	Mr Guilhem Janbon, Institut Pasteur Paris
<b>Experts :</b>	Mr François Helle, Université de Amiens (representative of CNU) Ms Riina Richardson, University of Manchester, UK Mr Niclas Setterblad, Université de Paris (supporting personnel) Mr Oscar Zaragoza, Instituto de Salud Carlos III, Madrid, Spain

## HCÉRES REPRESENTATIVE

Ms Sophie Ezine

## REPRESENTATIVES OF SUPERVISING INSTITUTIONS AND BODIES

Mr Christian Brosseau, Brest University  
Mr Loic Carballido, Angers University Hospital  
Ms Fanny Gaudin, Brest University Hospital  
Mr Michel Samson, UMR IRSET  
Mr Alain Saraux, Brest University Hospital  
Mr Philippe Simoneau, Angers University,

# INTRODUCTION

## HISTORY AND GEOGRAPHICAL LOCATION OF THE UNIT

The "Host Interactions Study Group" (HISG) unit originally called "Study Group for Host-Parasite Interactions" was created in 2000 and has since then mostly focused its activities on medical mycology. In 2017, members from the University of Western Brittany and the University hospital of Brest have joined the unit. Today, the activities of the unit are located at the University of Angers (~80 %) and Brest (~20 %).

## RESEARCH ECOSYSTEM

Although the unit is funded through the University of Angers and the University of Western Brittany, it also belongs to or is associated with other structures. It is one of the eleven research teams backed to the Federative Research Structure "Cellular Interactions and Applications Therapeutic" allowing access to technological platforms. Part of the unit is also physically in the Institute of Biology in Health of Angers University and the Angers university Hospital. The regional implantation both in Brittany and Pays de Loire is of major importance for the unit as number of grants have been obtained through regional calls. It is also a mean to set up collaborations. In addition, the unit has been proposed to be integrated as a "fully-integrated team" of the Research Institute for Environmental and Occupational Health (IRSET) in Rennes in the next contract of this institute. This new label would be the source of new collaborations and the opportunity to get access to additional core facilities. Finally, the members of the unit are involved in diverse specialized expert societies and networks in France and abroad.

## HCÉRES NOMENCLATURE AND THEMATICS OF THE UNIT

### SVE\_5

The theme of research of this unit follows two main axes both related to the study of fungal respiratory infections. The first axis is focused on the clinical-biological surveillance of fungal respiratory infections in the context of cystic fibrosis and two fungal species most used as research models (I.e. *Scedosporium* and *Pneumocystis*). Members of this unit studied the epidemiology of these infections but also their ecology. They aim to develop diagnostic tools and recommendations for standardized assays. The second axis is aimed to develop genomic and genetic resources useful to study *Scedosporium* biology. This axis also includes research on *Scedosporium* virulence and on the mechanisms allowing the fungus to adapt the microenvironment of cystic fibrosis patients.

## MANAGEMENT TEAM

The current director of the unit is Mr Jean-Philippe Bouchara and Mrs Gilles Nevez and Nicolas Papon being deputy directors. In the proposed future unit, Mr Nicolas Papon will be the director. He will be helped in his mission by Mr Gilles Nevez who will serve as co-director.

## UNIT WORKFORCE

<b>Active staff</b>	<b>Number 06/01/2020</b>	<b>Number 01/01/2022</b>
Full professors and similar positions	6	7
Assistant professors and similar positions	5	6
Full time research directors (Directeurs de recherche) and similar positions	0	0
Full time research associates (Chargés de recherche) and similar positions	0	0
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)	7	7
<b>Permanent staff</b>	<b>18</b>	<b>20</b>

Non-permanent professors and associate professors, including emeritus	7	
Non-permanent full time scientists, including emeritus, post-docs (except PhD students)	3	
PhD Students	8	
Non-permanent supporting personnel	0	
<b>Non-permanent staff</b>	<b>18</b>	
<b>Total</b>	<b>36</b>	

## GLOBAL ASSESSMENT OF THE UNIT

The GEIHP/IRF unit builds on the collaboration between clinicians and researchers in the medical mycology field. Their research has two main axes: i) the clinical and environmental surveillance of respiratory fungi, improvement of diagnosis and treatment of fungal infections in cystic fibrosis (Axis 1); ii) the characterization of *Scedoporium* species and their adaptation to the cystic fibrosis lung microenvironment, and the role in the progression of the disease (Axis 2). The unit is located on two sites: the University of Angers and the University of Western Brittany in Brest.

Although the unit produced a large number of publications (166 research articles) during the five-year assessment period, only a limited proportion (31) of these articles have been led directly by the members and/or are directly linked with the two axes of unit. Some of these articles have been published in very good journals (*mBio*, *Clinical Infectious Diseases*, *Antimicrobial Agents Chemotherapy*, *Clinical Microbiology and Infection*, *Frontiers in Microbiology*). Nevertheless, they have not published any high-profile primary research articles over the course of this mandate. Similarly, the unit has developed a large number of collaborations but these collaborations are not always related to the main axes of the project and tend to disperse the effort of the members.

Most grants obtained as PI are regional and although some members of the unit have been partners in two national (ANR, PHRC) and one international (ERC) grants, they have not yet coordinated or led one.

Although the unit's scientists are regularly invited to present their work at scientific conferences, these invitations mainly concern local or national conferences and few international conferences.

The unit has a regional recognition and there is room to improve it at the national and international levels by 1/ by narrowing the focus thus producing in-depth science, 2/ publishing their results more in wide-audience journals, 3/ taking the lead of French and European grants, 4/ welcoming foreign postdoctoral fellows since the few hosted over the period results in limited international exposure of the unit and 5/ organizing international conferences.

The GEIHP/IRF unit has a very good working relationship with industry as reflected by a joint patent and other collaborations. Moreover, several members of the GEIHP actively interface with general public through media interviews, debates on science and society, high school and college events as well as articles in magazines, newspapers and on social media.

Members of the GEIHP/IF are actively involved in teaching at the doctoral school and in Master's degree courses. Since 2015, twelve PhD students have successfully completed their thesis in the unit and the unit also welcomed several MSc students during the last mandate. Although the total number of postgraduate students in the unit is relatively high, several of their HDR scientists (four out to the 11 HDR of the unit) appear not to be responsible for PhD student supervision. Overall, the training through research activity of the unit is good but could be improved in particular by shortening the duration of PhD projects, publishing more PhD student work in high-profile journals and dedicating more time to PhD supervision.

There is a broad range of expertise within the unit (basic scientists, data analysts, clinicians) and they have a solid infrastructure. Staff feel supported and science and laboratory life are effectively combined. The split of the unit onto two sites is well coordinated but the projects, staff and students would benefit from working together more closely.

The proposed project for the next five years evolves logically from their previous work, builds on their strengths and focusses on two axes as before. It will be based on previous strong findings and preliminary data obtained by the unit over the course of the latest mandate. It will utilize their broad and effective networks of collaborations as well as their large collection of fungal isolates. The projects are very well supported by all the administrative bodies (universities and hospitals), on which the unit depends. On the other hand, the numerous small side projects without clear connections between them, might be a significant challenge for the rational in the global development of the unit if continued. This scientific project dispersion with further geographical separation of the unit in one or more sites, poses great challenges to bring them together, and this task will require a significant strategic leadership. These two points together with the appointment of the recently appointed director of the unit also as the director of the SFR in Health Science, represent major threats for the future mandate of the unit.

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