

EVALUATION REPORT OF THE UNIT  
VIFASOM - Sommeil - vigilance - fatigue et santé  
publique

UNDER THE SUPERVISION OF THE  
FOLLOWING ESTABLISHMENTS AND  
ORGANISMS:  
Université Paris Cité

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**EVALUATION CAMPAIGN 2023-2024**  
GROUP D



In the name of the expert committee<sup>1</sup> :

Bogdan DRAGANSKI, Chairman of the committee

For the Hcéres<sup>2</sup> :

Stéphane Le Bouler, acting president

Pursuant to Articles R. 114-15 and R. 114-10 of the French Research Code, evaluation reports drawn up by expert committees are signed by the chairmen of these committees and countersigned by the President of Hcéres.

To make the document easier to read, the names used in this report to designate functions, professions or responsibilities (expert, researcher, teacher-researcher, professor, lecturer, engineer, technician, director, doctoral student, etc.) are used in a generic sense and have a neutral value.

This report is the result of the unit's evaluation by the expert committee, the composition of which is specified below. The appreciations it contains are the expression of the independent and collegial deliberation of this committee. The numbers in this report are the certified exact data extracted from the deposited files by the supervising body on behalf of the unit.

## MEMBERS OF THE EXPERT COMMITTEE

<b>Chairperson:</b>	Mr Bogdan Draganski Centre hospitalier universitaire vaudois
<b>Experts:</b>	Mr Sébastien Arthaud Université Claude Bernard Lyon 1 - UCBL Ms Fabienne Collette Université de Liège Belgique Ms Sabine Plancoulaine Inserm - Institut national de la santé et de la recherche médicale Ms Géraldine Rauchs Institut national de la santé et de la recherche médicale - INSERM

## HCÉRES REPRESENTATIVE

Mr Bruno GUIARD

## REPRESENTATIVE(S) OF SUPERVISING INSTITUTIONS AND BODIES

- M. Christophe Renard:** service de santé des armées
- Mme. Christine Guillard :** Université Paris-cité, directrice du pôle recherche
- M. Michel Vidal :** Université Paris-cité , doyen faculté de santé
- M. Philippe Ruzniewski :** Université Paris-cité, doyen faculté de médecine

## CHARACTERISATION OF THE UNIT

- Name: Sommeil - vigilance - fatigue et santé publique
- Acronym: VIFASOM
- Label and number: EA 7330 | VIFASOM

Composition of the executive team: Pr. Damien Leger (Université Paris Cité, Hôtel Dieu, Paris, APHP) and Dr Mounir Chennaoui (IRBA - Institut de recherche biomédicale des armées, Brétigny-sur-Orge)

## SCIENTIFIC PANELS OF THE UNIT

SVE Sciences du vivant et environnement  
SVE5 Neurosciences et troubles du système nerveux

## THEMES OF THE UNIT

The unit ViFaSom (Vigilance FATigue SOMmeil et santé publique) was established at the beginning of 2014 and renewed in 2018. It is directed by Pr. Damien Leger (Université Paris Cité, Hôtel Dieu, Paris, APHP) and Dr Mounir Chennaoui (IRBA – Institut de recherche biomédicale des armées, Brétigny-sur-Orge). Pr Brigitte Fauroux (Université Paris Cité, Necker, APHP) joined the unit for its second mandate. The unit is organised along 4 thematic axes:

1. Epidemiology of sleep and sleep disturbances;
2. Physiological, immunological and behavioural consequences of sleep deprivation;
3. New technologies;
4. respiratory dysfunction in children with sleep disturbances.

There is one cross-cutting axis that is common to all of the thematic axes – sleep and cognition.

## HISTORIC AND GEOGRAPHICAL LOCATION OF THE UNIT

Historically, the unit was spread over three geographic locations – Hôtel Dieu, Brétigny sur Orge and Hôpital Necker. Each of these locations has its own specific technical infrastructure including lab spaces and equipment for sleep recordings in humans. Besides the established platforms for research on human sleep and other physiological functions (Hôtel Dieu, Hôpital Necker), there are an animal facility, a molecular biology and an analytical toxicology laboratories (Brétigny sur Orge). The administration of the unit is located at Hôtel Dieu and Brétigny sur Orge.

## RESEARCH ENVIRONMENT OF THE UNIT

The unit's Hôtel Dieu team is affiliated with the Paris Cité University – the Faculté de Santé and the Faculté de médecine. Together with the Necker team, the Hôtel Dieu team contributes to the interdisciplinary institute Paris Public Health. There are also links to the Paris Artificial Intelligence Research InstitutE PRAIRIE. The Institut de recherche biomédicale des armées (IRBA) is subordinate of the French army, contributes to the alliance nationale de la vie et de la santé (AVIESAN) and has developed collaborations with a number of research institutions – Institut Pasteur, Inserm, CEA, Santé Publique France, CNRS, Génopole, IHU Marseille. IRBA regularly applies for financial support for research activities to the Agence Innovation de la Défence (AID). IRBA is also part of the UNEO and is member of the cluster Grand Paris Sport. Similarly, IRBA has several collaborations with industry (Thalès, Airbus, Dassault Aviation) and start-ups (NAOX, SOMBOX, SAAGIE, Conscious Lab, Bioserinity, DREEM, Urgo tech). In 2018 the IRBA was certified ISO 9001 for its research activities, know-how and teaching in the biomedical domain by Lloyd's Register Quality Assurance.

## UNIT WORKFORCE: in physical persons at 31/12/2022

Catégories de personnel	Effectifs
Professeurs et assimilés	3
Maîtres de conférences et assimilés	0
Directeurs de recherche et assimilés	2
Chargés de recherche et assimilés	1
Personnels d'appui à la recherche	11
<b>Sous-total personnels permanents en activité</b>	<b>17</b>
Enseignants-chercheurs et chercheurs non permanents et assimilés	12
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	6
<b>Sous-total personnels non permanents en activité</b>	<b>18</b>
<b>Total personnels</b>	<b>35</b>

DISTRIBUTION OF THE UNIT'S PERMANENTS BY EMPLOYER: in physical persons at 31/12/2022. Non-tutorship employers are grouped under the heading 'AUTRES'.

Nom de l'employeur	EC	C	PAR
AUTRES	1	4	11
UNIVERSITÉ PARIS-CITÉ	2	0	3
<b>Total personnels</b>	<b>3</b>	<b>4</b>	<b>14</b>

## GLOBAL ASSESSMENT

The scientific production of the unit is very good to excellent (with a total of 168 original articles in national and international journals, with nearly half in top 10–25% of the journal in their field. Particularly, the scientific output for the Necker team, which is indeed very small, should be commended. The research conducted addresses major public health issues (impact of reduced sleep duration on health, risks associated with night work, studies on sleep-related breathing disorders in children, and the performance of soldiers in interventions). The topics are highly original given that there are only few centres in France and overseas that are dedicated to research in identical or similar domains, which gives the Unit its uniqueness in the national scientific landscape. Particularly important here is the excellent infrastructure (equipment and space) dedicated to the specific topics encompassing preclinical (animal models) and clinical research. The ability to secure funding is very good to excellent (2 grants by ANR as partner: D-Day – total amount 1.3 M€, ANR SleepTight – own amount 180K €). During this contract, a real effort was made to apply more regularly to European calls for proposals (for example, the HARPOCRATES H2020 project with success 234 k€). The IRBA teams benefit from French army specific intramural grants ('plan d'équipement' 410 K€; AAP BIOMEDEF 1.3 M€). The unit's attractiveness is very good to excellent. The unit is well-represented in national conferences (such as the Congrès du Sommeil). However, the participation in international conferences could be further strengthened. The links with society are excellent – the teams are present at mass media events (on Arte TV with 2.5 M views; print press – Le Monde, Le Figaro) and 5 books for the lay public.

## DETAILED EVALUATION OF THE UNIT

### A – CONSIDERATION OF THE RECOMMENDATIONS IN THE PREVIOUS REPORT

The recommendation to valorise the unit's methodological developments in the form of patents and IP protection via “the Agence de Protection des Programmes ou transfert technologique” was followed suit, but without successfully filed patents.

There were several collaborations with industry, however none was accepted for further funding.

The recommendation to improve the contribution to the academic curriculum at the University was addressed by listing teaching activities in the 2<sup>nd</sup> and 3<sup>rd</sup> cycle of technical personnel, DIU teaching and 2<sup>nd</sup> cycle of technical personnel, DIU teaching.

The recommendation to introduce measures that ensure the scientific integrity of the unit was addressed by issuing written rules and appointing 3 referents for the domains of integrity, ethics, and data protection.

It was recommended to increase the activity to obtain competitive national ANR and European grants that will support the creation of new axes and maintain the competitiveness of the unit. The suggestion was to foster the collaboration between the research axes to remain focused and ensure the maintenance of the lines of research.

The recommendation to increase the international profile of the unit was implemented by appointing two international researchers and hosting researchers from Brazil and the USA, clinicians from Italy, Lithuania, Belgium.

The evaluation committee did not find any information regarding the recommendation to introduce a laboratory notebook.

A laboratory council has not been established during the 2017–2022 period. Its implementation is planned after the creation of the UMR.

The communication between the three sites still seem complicated due to confidentiality and IRBA security rules. Other communication tools could nevertheless be deployed to overcome the difficulties of these rules, for example a newsletter informing unit staff of new information (recruitment, funding, publications...), webinars, virtual meetings.

It was recommended to include measurements of circadian markers that was done for the CIRCADIEM project. The recommendation to improve the transversality of the 'sleep & cognition' theme was followed suit as visible in most recent scientific publications.

The recommendation to include healthy children in the research projects of team Necker was not followed given their focus on rare diseases. The recommendation of being more involved in dissemination activities to the general public has been taken into account but remains limited given that the team is small and has a huge clinical activity.

Concerning IRBA, the recommendation to welcome foreign researchers has not been considered, as their institution limits it due to security constraints (Organisations dependent on the Ministry of the Armed Forces have limited access to their site)

### B – EVALUATION AREAS

Considering the references defined in the unit's evaluation guidelines, the committee ensures that a distinction is made on the outstanding elements for strengths or weaknesses. Each point is documented by observable facts including the elements from the portfolio. The committee assesses if the unit's results are consistent with its activity profile.

#### EVALUATION AREA 1: PROFILE, RESOURCES AND ORGANISATION OF THE UNIT

##### Assessment on the scientific objectives of the unit

The scientific objectives of the Unit are evaluated as very good to excellent. The Hôtel-Dieu and IRBA teams present objectives that are congruent and related to sleep and its relationships with cognition. The Necker Team's focus is on children's sleep in rare diseases in a hospital setting. As a consequence, this team is less integrated in the unit and does not have collaborative projects, although there is a potential (e.g., miniaturisation and validation of devices for sleep and physiological recording).

### Assessment on the unit's resources

The Unit's resources are evaluated as very good to excellent. As a whole, the unit obtains research funding on a regular basis, but there are major differences between the three teams. Despite the lack of reported research funding, the Necker team apparently secured a 1 M€ private funding. The Hôtel-Dieu (2 grants by ANR: SleepTight 180 k€ and AID PANDORE\_IA 425 k€) and IRBA (1 grant by ANR: D-Day total amount 1.3 M€ + 'plan d'équipement' 410 k€ + AAP BIOMEDEF 1.3 M€) obtained resources mainly from public, national or military funds.

### Assessment on the functioning of the unit

The Unit's functioning is assessed as very good to excellent. The unit comprises 3 teams and a fourth one was recently created (IRBA2). Collaborations between Hotel-Dieu and IRBA are well established, around transversal research axes. Each team excels in its domain (epidemiology of sleep, sleep and fatigue, sleep in children with rare disorders). However, this is not translated as efficiently as it could be at the level of the unit across transversal research axes. This has negative repercussions on the global functioning (e.g., no project presentation and journal clubs were organised, although it was a recommendation in the previous report).

#### *1/ The unit has set itself relevant scientific objectives.*

##### Strengths and possibilities linked to the context

The VIFASOM unit has a number of scientific milestones that position it as a national and international expert in the field of sleep. The Hôtel Dieu team has developed algorithms to define the concepts of 'sleep deprivation/deprivation/lack of sleep' adopted by 'Santé publique France'. The Necker team conducted an original prospective study on obstructive sleep apnoea in children with Down's syndrome. The IRBA team distinguished itself with its 'sleep and fatigue' project, aimed at optimising the performance of top-level athletes. The scientific objectives of the unit are relevant according to the state-of-the-art in their respective domains, and the three teams have international visibility. There are collaborations with academic and non-academic partners, especially for Hôtel-Dieu and IRBA. The IRBA team will be divided in two teams (IRBA 1 and 2) to allow development of a research axis related to aeronautics with recruitment of additional permanent staff. The different teams are involved in scientific projects related to pertinent societal challenges – treatment of rare diseases with sleep disorders in children, management of sleep debt and difficulties in our modern society, and its repercussion in daily life.

##### Weaknesses and risks linked to the context

The low attractiveness of the Unit for foreign researchers is a weakness that extends further to lack of strategy how to ensure collaborations with outgoing early career researchers that move to other academic institutions or the industry after obtaining the PhD grade. Generally (and particularly the Necker team), there is a need to provide tenure tracks to early and mid-career researchers that will allow them to build on their current topics and develop new ones. This is particularly relevant at the current stage, given the departure of some directors in retirement. Despite the prolific research output as evidenced by the number and quality of publications, the committee was not convinced about the existence of a Unit's own scientific strategy and vision for the future.

#### *2/ The unit has resources that are suited to its activity profile and research environment and mobilises them.*

##### Strengths and possibilities linked to the context

The team-specific research environments and available platforms correspond to each of the team's activity profile. In particular, the unit has an instrumental platform for analysing electrophysiological signals (SIESTA system, Compumedics®, ECG, EMG) in humans under experimental conditions of acute or chronic sleep deprivation. It also has four stations for assessing sleepiness (TILE and TME) as well as a battery of tests for analysing cognitive parameters (memory, sustained attention, etc.). The available resources (ANR, funds from Army), infrastructure, notably its integration into the new '@hôtel -dieu' project led by the AP-HP, with the creation of a

sleep and vigilance pathology laboratory, and access to cohort's patients with sleep disorders/target groups of military personnel will ensure the high level of scientific work in the next years. This is supported by the allocated 1.5 M€ for new equipment or its update for IRBA and a 1 M€ grant for Necker to develop an interventional program on sleep-related respiratory dysfunction in newborns with trisomy 21. The Hotel-Dieu team is dependent on Information Technology resources that will allow for more efficient exploitation of the large-scale data that they have access to.

### Weaknesses and risks linked to the context

The major weakness of the unit is the lack of common overarching research strategy that will serve as catalyst of between team collaborations. In the context of creating the next generation of leaders, there is pressing need to attract successful external scientists in the absence of 'emergent leadership' among the already recruited permanent scientists, which should anticipate the departure of the current directorship in retirement during the following period. During the period 2017–2022, the unit included 5 permanent research support staff with unequal distribution between the teams (1 Hotel Dieu, 4 IRBA and 0 Necker). Given the considerable research activity carried out by the Necker team, the support of permanent staff would have been a considerable asset. Today, within the unit, there are only three permanent staff left since the retirement of an IE IRBA and the departure of the IE Hotel Dieu. The three employees are attached to IRBA, which will be insufficient given the research activities carried out by the Unit and the absence of permanent research support staff for the teams Necker and Hotel Dieu. This also risks weakening the sustainability of methodologies and the transfer of skills. This issue is relevant also for the preclinical animal platform that is temporally not functioning and risks to lose unique know-how.

*3/ The unit's practices comply with the rules and directives laid down by its supervisory bodies in terms of human resources management, safety, environment, ethical protocols and protection of data and scientific heritage.*

### Strengths and possibilities linked to the context

The unit's practices have addressed the previous recommendations to update and optimise standards in ethics and data protection. Given the teams' involvement in large-scale multi-centre national cohorts, the ethical standards for working with personal data and the adopted data protection strategies are according to best practice in the field. Across all teams, the institutional safety rules and regulations are followed in both the clinical and research lab environment. Similarly, the recommendations for additional training of the research staff was followed suit. The supervision of technical and research staff by the PIs is adequate. The scientists are honouring the provided freedom to develop their own research, as long as it corresponds to the topic of the project to develop.

### Weaknesses and risks linked to the context

The major weakness of the Unit's practices is related to the current lack of institutional coherence between the teams' governing bodies. The segregation is clear along the axes' university vs. army, basic vs. clinical research, acquisition of own data vs. expert opinion contribution to consortium's data, to name but a few. This translates into situations where researchers at the same career stage do not necessarily have the same career opportunities. Communication between and within the unit's teams is another weakness with directorship's decisions or their rationale is not properly transmitted to the lower hierarchical levels. There is no platform for communications between the different teams – particularly critical is the non-existence of regular meetings on Unit's organisational policy – e.g., general assembly or scientific direction – e.g. journal clubs, project presentation.

## EVALUATION AREA 2: ATTRACTIVENESS

### Assessment on the attractiveness of the unit

The Unit has globally a very good to excellent attractiveness, both at the national and international level. The Unit's teams are filling-in a niche in their respective clinical and basic research domains, which together with sufficient funding and access to a broad range of epidemiological, clinical and experimental data attracts academics interested in the field. The particular profile of IRBA through its strong attachment to the French army, coupled with the usual confidentiality restrictions remains very competitive in the domain, which also ensures its high attractiveness among military academics.



- 1/ *The unit has an attractive scientific reputation and is part of the European research area.*
- 2/ *The unit is attractive because for the quality of its staff support policy.*
- 3/ *The unit is attractive through its success in competitive calls for projects.*
- 4/ *The unit is attractive for the quality of its major equipment and technical skills.*

Strengths and possibilities linked to the context for the four references above

The unit's attractiveness, rated as very good to excellent, is mainly based on its major expertise in sleep research and the reliance on established technological platforms such as platforms for analysing electrophysiological signals in humans after acute or chronic sleep deprivation but also stations for assessing sleepiness a battery of tests for analysing cognitive parameters. The attractive scientific reputation is particularly true at the national level with expert participation in major national epidemiological cohorts – Constances, Nutrinet COCONEL, ICOSS, but also internationally with involvement in UKs WhiteHall II study. The international collaborations developed by IRBA are a real asset for increasing the Unit's attractiveness, given that the team is not allowed to recruit researchers outside from France due to its military status. There are established collaborations with teams from the USA (Stanford), Switzerland (Lausanne), Taiwan for Hôtel-Dieu and with the NATO for IRBA. Team Necker is a major training hub for clinical researchers from different countries (Italia, Belgium, Serbia, Malaysia, Austria) in the domain of sleep and respiratory problems in children. In particular, on average, two foreign doctors are welcomed each year for training in sleep analysis. Still, the success in competitive calls for high-visibility competitive projects remains limited, which should be a strategic goal in the upcoming period.

Weaknesses and risks linked to the context for the four references above

The major weakness with implications for the Unit's attractiveness is the lack of research strategy and vision that will align the participating teams to a common goal that will foster collaborations and complementarity to cover the wide span between clinical and epidemiological research. In this context, the establishment of transversal (across teams) competences carried by early- and mid-career researchers with a clear path towards tenured positions will contribute to the attractiveness of the Unit towards PhD candidates from top national and international institutions. Despite its participation in major national epidemiological cohorts and international efforts, the Unit has no clear-cut profile in hosting, maintaining and coordinating cohorts locally. Such activities could also contribute to attractiveness. Finally, efforts to establish common (if not precluded by its attachment to the French army for IRBA) practices for technical and research staff cross the Unit's teams with reference to human resources, communication and career opportunities could also enhance the attractiveness of the Unit.

### EVALUATION AREA 3: SCIENTIFIC PRODUCTION

#### Assessment on the scientific production of the unit

Judging on the provided information, the scientific production is very good to excellent. The evaluation committee expresses its dissatisfaction with the fact that the necessary information about authorship and key author positions (first, last or corresponding author) was virtually non-existent. There were a lot of missing data, particularly concerning the Necker team while this team is highly productive relative to the number of researchers. The publications are in relevant international peer reviewed journals for the research domain.

- 1/ *The scientific production of the unit meets quality criteria.*
- 2/ *The unit's scientific production is proportionate to its research potential and properly shared out between its personnel.*
- 3/ *The scientific production of the unit complies with the principles of research integrity, ethics and open science. It complies with the directives applicable in this field.*

## Strengths and possibilities linked to the context for the three references above

The unit scientific production is very good to excellent. Most of the publications are in open access journals (n = 104/168). Nearly all publications from the Necker team are in key author positions in international peer reviewed journals such as Sleep Medicine Reviews, Plos one, Sleep, Sleep Med and Frontiers in neurosciences (n = 34/36 for 4 researchers + 3 PhD students), this represents 3/4 for the IRBA team (n = 28/36 for 9 researchers + 8 PhD students) but about 1/3 for the Hôtel Dieu team (n = 35/83 for 16 researchers + 2 PhD students). Several publications from the Hotel Dieu team are in French (Médecine du Sommeil, Presse Médicale) and for general practitioners, sharing new research results with first line general practitioners. PhD students and post-doctoral fellow are publishing regularly as first authors (Thomas Andrillon x2, Pierrick Arnal x1, Mélanie Strauss x2). There is a steadily rising trend for open access publications and the Unit's teams are fully committed to the principles of open science, particularly through their strong involvement in analysis of national and international large-scale cohorts. The principles of research integrity and ethics constitute an integral part of the Unit in all stages of research projects – from the conception, through data acquisition and analysis aiming at transparency and replicability of the obtained results.

## Weaknesses and risks linked to the context for the three references above

One of the weaknesses is the lack of collaborative productions with the Necker team. Whilst there are joint publications between IRBA and Hôtel-Dieu teams mainly through co-supervised PhD students, this is missing for the Necker team. The lowest proportion of papers in key author positions (globally and relatively to the number of researchers and PhD students) in the Hôtel Dieu team may reflect their higher involvement as partners providing mainly expertise rather than being drivers of the concerned research projects. There is no information on tracking, reproducibility and data management plan across all domains of the Unit. In the absence of it, we consider these as absent, which represents a scientific productivity weakness.

## EVALUATION AREA 4: CONTRIBUTION OF RESEARCH ACTIVITIES TO SOCIETY

### Assessment on the inclusion of the unit's research in society

The Unit contribution to research activities to society is excellent. The Unit's members are involved in translation of research knowledge to society through presence in the mass media (TV, print, radio), open seminars, books, smartphone application development and their active contribution to the specialised national bodies of research – the Institut National du Sommeil et de la Vigilance.

- 1/ *The unit stands out for the quality and the amount of its interactions with the non-academic world.*
- 2/ *The unit develops products for the cultural, economic and social world.*
- 3/ *The unit shares its knowledge with the general public and takes part in debates in society.*

## Strengths and possibilities linked to the context for the three references above

Several members of the unit have strong links with industry such as ESSILOR, BioMERIEUX, Thalès, Airbus, Dassault Aviation. For example, they have obtained two CIFRE contracts. Moreover, Thanks to these links, the unit has distinguished itself by developing products for the socio-economic world, such as 'sleep sensors' (watches, rings, dream headbands), with a desire to register patents and/or trademarks.

Dissemination of the research results are done in various ways (seminars, meeting groups with population, interviews in TV, print and radio media, books). Some members are also involved in smartphone/tablet application development (iSommeil) and in art projects.

## Weaknesses and risks linked to the context for the three references above

There is marked difference between the Unit's teams when it comes to interactions with the non-academic world. While Hôtel Dieu and IRBA are active in sharing knowledge with the general public via mass media, the Necker team is less involved in research results dissemination. However, their work has the potential to become the focus of public's attention given its relevance – e.g. the recent results in newborns with trisomy 21.

## ANALYSIS OF THE UNIT'S TRAJECTORY

Given the different institutions behind the teams and their geographical spread, the Unit follows a fully decentralised organisational pattern. Following the organisational segregation of the Unit, the resources are bound to the location and needs of each of the unit's teams. The research profile of the Unit is determined by the focus on sleep, vigilance and fatigue with the overarching theme of sleep and cognition. The Unit's teams follow their own agenda along the axes of research. The Unit is envisaging to obtain the Joint Research Unit (Unité mixte de recherche UMR) that is expected to bring a much needed coherence in strategy and vision for the future. This intention is fully supported by the supervising bodies of authority.

The scientific objectives are structured around the main topics of the Unit's team:

- i) objective assessment of sleep rhythm at the epidemiological level; \*
- ii) physiological, immunological and behavioural consequences of sleep deprivation;
- iii) innovation and new technologies;
- iv) sleep-related respiratory dysfunction in children with the overarching theme of sleep and cognition.

The teams Hôpital Dieu and IRBA have a longstanding collaboration with co-supervised early career researchers, joint publications and potential for further cohesion. The Necker team that joined the Unit in the evaluated period, has brought with its research focus and promising results on the sleep-related respiratory pathology in rare disorders (trisomy 21) a unique clinical research profile. However, this team is not fully integrated in the Unit – neither in terms of infrastructure, nor in collaborations or joint publications.

The research environment is defined by each team's institution – featuring a state-of-the-art scientific infrastructure, relatively few interactions with other research institutes in the central Paris area (except Hôtel Dieu with the Paris Institute for Brain and Spinal Cord – ICM) and intensive collaborations with distinguished international clinical or scientific centres.

The Unit's asset is its exceptional activity in training of specialists in the corresponding clinical and technical domains. This is done at the price of almost negligible visibility within the future scientist's community – especially at the Masters level. One of the Principal Investigators is a well-established leader of the country's leading clinical research networks.

From a global perspective the Unit is successful – with a very good to excellent overall score. The infrastructure is adequate to the set objectives and the research environment – with a clear potential for development. Given the generational change that is previewed for the next period, the recruitment of researchers with the emphasis on a tenure track is essential. In this context, it is vital to discuss and make decisions about a common research strategy and vision for the next phase of the Unit. This should provide the necessary backbone for a true collaborative efforts between the future four teams and ensure the success of the Unit by increasing its visibility and attractiveness. It is also important to timely clarify the role of the preclinical research, which is now 'frozen' and which the evaluation committee sees as unique asset for the Unit that merits support.

Finally, the Unit needs adequate administrative support. Overall, the trajectory of the unit is positive, and the development of a new team on the future military aeronautics led by Dr. A Vacher (IRBA-2) illustrates the Unit's dynamism.

## RECOMMENDATIONS TO THE UNIT

### *Recommendations regarding the Evaluation Area 1: Profile, Resources and Organisation of the Unit*

From the global perspective, the Committee recommends to the Directorship to work on a common strategy and vision for the Unit's future. This should include all aspects of aligned scientific objectives, creation of the next generation leadership, communication/inclusivity and instruments for cross-teams collaboration.

More concretely, the committee recommends to the Unit focusing on projects for which the teams are scientific leaders and which enhance its visibility and scientific potential rather than to collaborate by providing solely expertise.

The committee recommends, as already done in the previous report, to make a substantial overhaul of the Unit's communication. First measures include the creation of a Unit's council with representatives of all Unit's teams and ensure regular meetings with set agenda and dedicated time to address individuals' or communities' questions. Similarly, we recommend establishing a common platform for scientific exchange where members of the four teams can present their planned projects, the obtained results and discuss recent publications in journal clubs. Finally, we recommend an annual or biannual general meeting of the whole Unit.

### *Recommendations regarding the Evaluation Area 2: Attractiveness*

We recommend to the Unit to proactively get involved in local (neuro)science Masters' programmes, which will increase its attractiveness for students. Similarly, the involvement in the existing Masters' programmes – e.g. CogMaster, should be structured and formalised.

The committee also encourages the unit to have highly visible projects, in which the team is a scientific leader, with a good group dynamic, which could be a great asset to recruit post-docs. Moreover, although there are strong collaboration links between the Hôpital Dieu team and IRBA-1, these are not that well developed with the Necker team.

The committee recommends to (1) consider for future post-docs or candidates to tenure track individuals external to the Unit, (2) explore ways to offer attractive packages to applicants, (3) further enhance the Unit's visibility at the international stage (e.g., website and social media in English, invitations of external scientists for seminars, organization of international conferences and symposia).

### *Recommendations regarding Evaluation Area 3: Scientific Production*

The committee recommends distinguishing between publications for which the teams are the scientific leader of the work, and those carried out as collaborators.

The committee recommends to coach and mentor early career researchers for their scientific publications and to adopt a strategy for rapid dissemination of new methods and results compared to the lengthier process of publications in the top-tier journals. We recommend to the Unit to also increase the number of Reviews on their topic of expertise with high relevance to the public health.

### *Recommendations regarding Evaluation Area 4: Contribution of Research Activities to Society*

We recommend maintaining and further develop the collaborations with industry from the past – e.g. update of the smart application iSommeil. Like the previous recommendation, there should be a dedicated group of the Unit's researchers who with the help of experts in the domains of patents and intellectual property, can bring forward innovative projects with potential for patenting.

## TEAM-BY-TEAM OR THEME ASSESSMENT

**Team 1:** EQUIPE HOTEL-DIEU  
 Name of the supervisor: Damien Leger

### THEMES OF THE TEAM

The general research theme of the Hôtel Dieu team is the epidemiology of sleep time, sleep disorders and vigilance. There is a discrepancy between the involvement in large national cohorts (Constance, Nutrinet, ...). and the scientific productivity, which suggests more a role of collaborator than project leader. Another research theme is interventional epidemiology. A third aspect of the team's work aims at enhancing the understanding of the risk of cancer associated with night work. The team is very active in the development of objective epidemiological databases on sleep, notably with Morpheo, a platform for the analysis of polysomnography using artificial intelligence and machine learning or the development of a smartphone application.

### CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

Concerning the scientific perspectives over the next five years and the feasibility of the project, the committee recommended to include in the projects measurements of circadian markers to understand the role of the biological clock in the impact of sleep pressure or the effect of countermeasures studied. This was done for the CIRCADIEM project (Dr Faraut & Pr Léger). Also, the latest epidemiological study associating VIFASOM and the Department of Epidemiology and Public Health, UCL UK, (Le Cornu et al., 2002) included chronobiological parameters to understand the links between short sleep duration and comorbidities.

The committee also recommended to improve the transversality of the 'sleep & cognition' theme. A real effort has been made, as evidenced by publications with the team directed by Dr Kouider (Andrillon et al., 2017; Koroma et al., 2020; 2022) and Dr Strauss (ULB, Belgium; Strauss et al., 2022; Léger et al., 2017). Researchers particularly involved in this theme have been recruited in other centers, but collaborations are still effective. Despite this, three projects include this theme in their projects (Dr Beauchamps' thesis, neurofeedback and IA Pandore projects).

Overall, the recommendations made by the committee have been taken into account, even if the transversality of the sleep and cognition axis could still be strengthened.

### WORKFORCE OF THE TEAM: in physical persons at 31/12/2022

Catégories de personnel	Effectifs
Professeurs et assimilés	1
Maîtres de conférences et assimilés	0
Directeurs de recherche et assimilés	1
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	7
<b>Sous-total personnels permanents en activité</b>	<b>9</b>
Enseignants-chercheurs et chercheurs non permanents et assimilés	5
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	1
<b>Sous-total personnels non permanents en activité</b>	<b>6</b>
<b>Total personnels</b>	<b>15</b>

## EVALUATION

### Overall assessment of the team

The overall assessment of the team is very good to excellent. The team is highly visible notably through its Pls leadership in scientific societies and participation in international networks. Its research focuses on major issues with public health relevance. The resources and attractivity are estimated as very good,

### Strengths and possibilities linked to the context

The Hôtel Dieu team's topic on epidemiology of sleep and sleep disturbances has a wide network of collaborations, which is its main asset of this team. The team brings its sleep expertise to the study of large cohorts. Thus, the team works in collaboration with the national cohorts Constances and Nutrinet in the domain of sleep epidemiology as well as the prospective DEBATS study and the British WhiteHall II study. ViFaSom is an active contributor to Santé Publique France, particularly during the COVID-19 pandemic with the national study COCONEL and the international ICOSS. There are collaborations with the INSERM epidemiological unit U1018 (Centre de recherche en épidémiologie et santé des populations (CESP)) on the topic of sleep and cancer incidence in the general population. In a similar context, there is a collaboration on the topic of prostate cancer and sleep via the projects CIRCADIEM (supported by ANSES) and EPICAP (supported by INCA et RESP). Overall, these collaborations with team collecting data in large cohorts really confirms the team's expertise and recognition in the field of sleep. Their scientific production led to the publications of several articles in first ranked journal such as two reviews in 'Sleep Medecine Review' (IF>10) or research articles published, for example, in 'Sleep' or 'Frontiers in immunology' (IF>5) as first or last author. It would be beneficial to capitalize on this highly original data and be more of a driving force on scientific issues, rather than just an expert on sleep.

The obtained resources during the evaluation period are excellent amounting to ca. 2 M€ which allowed the recruitment of 5 PhD candidates. The scientific output is very good (89 original articles, among which 36 published in the top 10–25% of the journal in their field). The links with the society are outstanding as evidenced by numerous articles/interviews in national and international media, books for the general public, TV documentary with more than 2.5 Mio views (Arte TV)

The team has taken a number of steps to consider registering patents and/or trademarks and responding to calls for tenders for innovative projects (iSommeil application, Smart Somno...) but to date none of them have been exploited.

Moreover, an important effort has been made for the involvement of the team's researchers in the university community. In particular, Damien Léger's team is involved in 2<sup>nd</sup> cycle teaching (sleep physiology and vigilance, sleep apnoea syndrome) and 3<sup>rd</sup> cycle teaching through the participation/creation of university diplomas (Les technologies du sommeil et de la vigilance/DU Prise en charge de l'insomnie/DU E-santé et médecine connectée...).

### Weaknesses and risks linked to the context

The major risk concerns the replacement of Pls who have reached retirement age or will do so soon. It is vital to set up a tilting system to ensure the team's continuity. The discussion between the committee and the unit directors revealed that this problem has been anticipated, but there are still uncertainties concerning the future director. The team needs the guidance and support of its academic supervisors to make the transition smoothly. The team participates very regularly in conferences, but mainly at the national level. It is important to participate more regularly in international conferences in order to increase the team's attractiveness and visibility. The team does not sufficiently highlight the projects for which it is the driving force. The team very often adopts the role of expert (except for the work on night work and cancer risk), helping other teams to identify and question relevant sleep parameters. We feel it is important for the team to position itself more as a scientific leader, able to develop its own projects and scientific questions based on cohort data. A more general comment is to strengthen links/collaborations with the different teams.

### Analysis of the team's trajectory

The Hôtel Dieu team has been consistent along the majority dimensions of the evaluation with a very good to excellent overall score. The outstanding links to society with presence in the mass-media (TV documentary with more than 2.5 M views on Arte TV) helped to evaluate the trajectory as upwards trend on the background of very good achievements in scientific production, resources and attractivity. The Hôtel Dieu team is expanding – due to very good resources it was able to recruit five PhD candidates. The evaluation period was marked by consolidation of the team's position as one of the national and international visible units in the domain of

epidemiological research on sleep. The next phase is the generational transition at the PIs level and related loss of expertise, additionally to the still lacking clarity about cross-disciplinary theme(s).

## RECOMMENDATIONS TO THE TEAM

The committee recommends to the team to implement a retirement replacement strategy, and to gradually set up the team's management for the next contract, to ensure the transmission of information, procedures and knowledge, and to help the new director become fully integrated into the collaborative networks initiated by the current team.

In terms of valorization, the committee encourages the team to give greater prominence to projects for which they are really a driving force and not only experts on sleep and foster an autonomous scientific strategy. In the same vein, when describing projects, it would be relevant to distinguish between projects initiated by the team and those carried out as partners.

The committee also recommends pursuing efforts to strengthen the research theme 'Sleep and cognition' and make it a real pillar of the unit. Participation to international conferences should be reinforced. The committee advocates continuing the already strong interactions with IRBA, and develop collaborations with the Necker team, either on the theme of sleep and cognition, or on the theme of innovations and new technologies. Teaching in local Masters programs should also be developed to attract more young scientists, particularly in cognition-related fields.

**Team 2:** Equipe « Necker »  
 Name of the supervisor: Brigitte Fauroux

## THEMES OF THE TEAM

The team's focus is on diagnosis and treatment of sleep-related respiratory dysfunction in children with rare diseases referred by clinical units (Centres de références des maladies rares).

## CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The previous evaluation recommended the inclusion of healthy children in future studies to assess the variance of the functions of interest in the general population, which was not followed. The team's focus is on rare genetic disorders, which, given the small size of the team, renders the recommendation to expand the investigations within the general population, not feasible.

Another recommendation was to be more involved in knowledge dissemination to general public. This was partially followed with the organisation of a seminar on sleep function in children in 2022 that is available for viewing on the internet.

## WORKFORCE OF THE TEAM: in physical persons at 31/12/2022

Catégories de personnel	Effectifs
Professeurs et assimilés	1
Maîtres de conférences et assimilés	0
Directeurs de recherche et assimilés	0
Chargés de recherche et assimilés	1
Personnels d'appui à la recherche	0
<b>Sous-total personnels permanents en activité</b>	<b>2</b>
Enseignants-chercheurs et chercheurs non permanents et assimilés	1
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	1
<b>Sous-total personnels non permanents en activité</b>	<b>2</b>
<b>Total personnels</b>	<b>4</b>

## EVALUATION

### Overall assessment of the team

The overall achievement of the team is excellent. The team leader is recognised as an international expert for respiratory dysfunction in children with rare diseases. The scientific production is excellent to outstanding considering the number of team members counting two permanent researchers and two researchers with temporary contracts and the fact that a large part of the team's work involves diagnosing and monitoring respiratory disorders in children under the care of other clinical units. The resources are excellent (1 M€ funding from private foundation), the attractivity is very good to excellent, the links to society is very good.

### Strengths and possibilities linked to the context

The team's links with numerous centers specializing in rare genetic diseases, and its involvement in the diagnosis and management of associated respiratory disorders in affected children, provide unique opportunities to study and better characterize the various respiratory disorders, develop devices adapted to their improved management, and gain a better understanding of 'normal' physiology. The team benefits from equipment



adapted to the study of sleep with rooms in which sleep explorations are carried out (polygraphs and polysomnographies). It also has a respiratory physiology laboratory for the assessment of (i) breathing using an oesogastric probe, with spontaneous ventilation, (ii) respiratory muscle performance, and (iii) cerebral oxygenation.

Despite the team's small size, it is very active in terms of publications (N=87 in 2017–2022 including 57 in key author positions, pubmed search as excel file was incomplete). The scientific production led to the publication of several research articles in first ranked journal such as 'European Respiratory Journal' (IF>20) or in journal with an IF>4 including 'Frontiers in immunology', 'respiratory medicine', 'Acta Paediatrica' as first or last author. Several foreign students come to the team for short periods (2 to 6 months) to familiarize themselves with respiratory pathologies and care (the team leader is a recognized international expert). During their stay, they take an active part in the team's research work, and thus in the list of scientific publications.

The team also contributes to teaching in different university diplomas (Les pathologies de l'éveil et du sommeil de l'enfant/Médecine du sommeil appliquée à la gérontologie/Physiologie et pathologie du Sommeil..).

## Weaknesses and risks linked to the context

Several grants were obtained during the evaluation period, including one for 1 M€ from the Fondation Jérôme Lejeune. Other, more modest funding was also obtained from private companies. No funding has come from national calls for proposals.

The team is very small and would benefit from the recruitment of permanent clinicians and researchers. No one is really able to take over from the team leader, who is close to retirement. There are no post-docs who could take over one or another research theme. Their recruitment would require funds from national calls for proposals. Participation to international scientific meetings mainly concerns the team leader, due to budget restrictions. Participation of other team members should be encouraged.

Finally, another weakness is the lack of collaborations with the other teams of the unit.

## Analysis of the team's trajectory

The number of the team members is decreasing from four to two in the next period.

However, despite the clinical workload, the team is very active in scientific production

The trajectory is positive over the last five years, but the committee highlights the utmost importance of recruiting permanent clinicians and researchers to conduct the different projects. Indeed, the critical mass of staff is very low and may jeopardize team projects in case of unforeseen absences.

## RECOMMENDATIONS TO THE TEAM

The team should respond to more calls for proposals, especially those that allow engineers and post-docs to take charge of certain lines of research.

The team would benefit from developing collaborative research projects (and funding) within the unit, for example on the theme of sleep and cognition, or on the theme of innovations and new technologies, or outside the unit (with reference centres).

The participation of team members other than the team leader in international meetings should be encouraged.

**Team 3:** Equipe « IRBA-1 »  
 Name of the supervisor: Mounir Chennaoui

## THEMES OF THE TEAM

Research activities focused on the consequences of sleep deprivation and changes in sleep-wake cycles on physiological and immunological systems, as well as on fatigue and vigilance states. They are also interested in the identification of measures that allows to decrease negative effect of sleep deprivation and fatigue on behavioural outcomes.

## CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

The recommendations were considered, except for welcoming of foreign researchers (limited by defense due to security constraints). About valorisation, IRBA was successful with the projects SEEN, Carepehos, L2MRA, WAKED-CO for AID funding. As suggested, they are now involved in academic teaching by contributing to DUs and DIUs, and teaching to army health staff. As requested, they successfully applied to grants unrelated to the army. However, a persistent mode of communication is still to be implemented to improve interactions with the three others teams of the unit.

## WORKFORCE OF THE TEAM: in physical persons at 31/12/2022

Catégories de personnel	Effectifs
Professeurs et assimilés	1
Maîtres de conférences et assimilés	0
Directeurs de recherche et assimilés	1
Chargés de recherche et assimilés	0
Personnels d'appui à la recherche	4
<b>Sous-total personnels permanents en activité</b>	<b>6</b>
Enseignants-chercheurs et chercheurs non permanents et assimilés	6
Personnels d'appui non permanents	0
Post-doctorants	0
Doctorants	4
<b>Sous-total personnels non permanents en activité</b>	<b>10</b>
<b>Total personnels</b>	<b>16</b>

## EVALUATION

### Overall assessment of the team

The overall assessment of the team is excellent, with regular and successful grant applications, both within French army fundings and outside (ANR and European defence fund). The team is highly visible at the national level and international level. Besides involvement in defence projects, the team is also renowned for contributing to training of top athletes (in relationships with management of sleep and fatigue), notably during past and future (2024) Olympic games. The excellent attractiveness of the team allows for recruiting early career researchers with French nationality (mostly army members). Scientific output is excellent, with 41 publications (22 in the top 25% of the journal in their field). The creation of IRBA 2 with arrival of new researchers and development of topics in aeronautic is very positive for the future.

### Strengths and possibilities linked to the context

The team has access to high standard equipment related to the research programs conducted in the unit. Grant funding is obtained on a regular basis. Research topics dedicated to understanding the fatigue

management induced by sleep deprivation are timely and with public health relevance going beyond the interests of the defence forces.

The team works on promising projects with a national and international visibility. Its 'sleep and fatigue' project in high-level athletes brought a collaboration with the INSEP centre of expertise. Thanks to this, the team has forged strong links with several French federations (rugby, judo, swimming, athletics...) and provided stage access to highest level competitions e.g. the Olympic Games in Paris 2024. The team's participation in three university curricula linked to sports classifies it as a reference centre in the domain.

The links to the French army provide a unique bridge between military and academic environment. The team is a reference in the field of sleep for the French army that gives a national security dimension.

The team has permanent and complementary research staff enabling the use, maintenance, quality control equipment and offline signal analysis, dedicated to research programs.

There is a good involvement of research support staff in co-authorship (33% of articles published by the team).

The scientific production led to the publication of several research articles in journal with an IF>5 including 'Sleep', 'Sleep medicine', 'International Journal of Molecular Sciences' as first or last author.

The IRBA1 team has been awarded ISO 9001 certification, a guarantee of the quality of its research activities.

The team also contributes to teaching. Dr Chennaoui participated in the creation of a practical and theoretical training module on 'Sleep vigilance and fatigue prevention' and developed the 'Fatigue, sleep and recovery management' training course for Human Factor Advisors. Professor SAUVET teaches sleep-related medical and military courses for military practitioners and paramedics. He is also involved in the Master's degree in sport and physical activity. Finally, both Drs Chennaoui and Sauvet contribute to teaching in different university diplomas (DU Optimisation de la performance et réathlétisation/DU Sport et Psychologie/Sport et Santé/U expertise Course à pied, «Sommeil et performance»...).

The team's main highlights include high media exposure, thanks in particular to their work on athletes' sleep. In particular, the team regularly participates to the writing of thematic dossiers in the written press, books available to the general public (Bien dormir pour les nuls/Le petit livre du sommeil/SOS SOMMEIL).

## Weaknesses and risks linked to the context

Funding is mainly from the defence and the PIs need to obtain more national and international grants (this was successfully initiated during the period). The high turnover in the scientist staff (short contracts) may lead to loss of know-how and expertise across the research programmes. Aiming to tenure successful researchers will help to increase the visibility and attractiveness of the unit. However, this will be possible only by providing the team access to long-term positions for researchers at mid-career stage.

The lack of permanent staff dedicated to in vivo surgical techniques and preparations for research programs represents a weakness and a threat for the future of the team.

## Analysis of the team's trajectory

The trajectory is positive. The separation in IRBA 1 and 2 shows the dynamism of the research domain, and collaboration between the two teams should have a synergetic effect on scientific productivity. The creation of IRBA 2 will enable the development of a new field of research and the development of a new team. We encourage collaboration between the two teams when specific research themes allow it.

## RECOMMENDATIONS TO THE TEAM

The presence of permanent research support staff dedicated to in vivo surgical techniques and preparations for research programs would be an asset. This would make it possible to perpetuate procedures and the transmission of knowledge.

In the same vein, the stabilization of permanent researchers will help to reinforce the team and allow better integration across time in the different research programs of the team.

As in the previous assessment, it is strongly suggested to increase formal and informal connexions with the three other teams.

**Team 4:** Equipe «IRBA-2»  
Name of the supervisor: Anthony Vacher

## THEMES OF THE TEAM

New team

## CONSIDERATION OF THE RECOMMENDATIONS OF THE PREVIOUS REPORT

WORKFORCE OF THE TEAM: in physical persons at 31/12/2022

## EVALUATION

Overall assessment of the team

Strengths and possibilities linked to the context

Weaknesses and risks linked to the context

Analysis of the team's trajectory

## RECOMMENDATIONS TO THE TEAM

The committee recommends to develop collaborations with the other teams of the unit (except IRBA-1 for which links are already very strong). This could be done with Hotel-Dieu team on different topics such as signal analyses, monitoring devices...

The committee also encourages team members to apply to national and international grants. Finally, dissemination activities should be reinforced and done beyond the military environment.

## CONDUCT OF THE INTERVIEWS

### Date

**Start:** 29 novembre 2023 à 8 h 30

**End:** 29 novembre 2023 à 18 h

**Interview conducted: on-site or online**

### INTERVIEW SCHEDULE

**8:30-9:00 Huis Clos du comité en présence de CS HCERES**

<https://hceres-fr.zoom.us/j/96243368343?pwd=UUovVk5CdIA5OHB4djU3dzlwdXQ1Zz09>  
(salle d'attente)

**9 h - 10 h 10 Présentations des directeurs et chefs d'équipe**

<https://hceres-fr.zoom.us/j/93100033144>

- 9 h - 9 h 10 Présentation du processus d'évaluation par le conseiller HCERES et du comité d'experts
- 9:10-10 : 10 Présentation de l'unité avec les principales réalisations et le projet/la trajectoire par le(s) directeur(s) d'Unité D. LEGER et M. CHENNAOUI (40 min de présentation + 20 min de discussion)

**10:10-10 : 20** Pause

**10 h 10 - 12 h 10** Présentation des résultats scientifiques et de la stratégie de l'unité par les chefs d'équipes

- 10:20-10 : 50 Présentation de l'équipe « Hôtel Dieu » par Damien LEGER (15 min de présentation du Passé et Projet/Trajectoire + 15 min de questions)
- 10:50-11 : 20 Présentation de l'équipe « Necker » par Brigitte FAUROUX (15 min de présentation du Passé et Projet/Trajectoire + 15 min de questions)
- 11:20-11 : 50 Présentation de l'équipe « IRBA-1 » par Fabien SAUVET et/ou Mounir CHENNAOUI (15 min de présentation du Passé et Projet/Trajectoire + 15 min de questions)
- 11:50-12 : 10 Présentation de l'équipe « IRBA-2 » par Anthony VACHER (10 min de présentation (Projet/Trajectoire + 10 min de questions)

**12 h 10 - 13 h 30** pause déjeuner

**13:30-15 : 30** Réunions à huis-clos avec les différentes catégories de personnels

**13:30-14 : 00** Discussion avec ingénieurs, techniciens, personnels administratifs  
<https://hceres-fr.zoom.us/j/91211574403?pwd=TFhhZjhJSDJnN3VWVWVUy2pSS1orUT09>  
(code secret transmis au personnel)

**14 h - 14 h 30** Discussion avec les étudiants en thèse et les post-docs  
<https://hceres-fr.zoom.us/j/93130221599?pwd=SjF2QTFra3Y1MIVTRnBnd09xak0rQT09>  
(code secret transmis au personnel)

**14:30-15 : 00** Discussion avec les scientifiques (sans les chefs d'équipe)  
<https://hceres-fr.zoom.us/j/93841041055?pwd=NmNUUmt1OUhMNVVhbVUzRkl1T3A2dz09>  
(code secret transmis au personnel)

**15 h - 15 h 30** Discussion avec les chefs d'équipe  
<https://hceres-fr.zoom.us/j/93784892044?pwd=RGVXM1gxWEt3bGxxVWcvWEh0MWRVQT09>  
(salle d'attente)

**15:30-16 : 00** Réunions à huis-clos du jury pour préparer les échanges/questions avec DU et tutuelles  
<https://hceres-fr.zoom.us/j/96096976845?pwd=WUFicUJyN2tLRVRVVEpZTEUvUTZ2UT09>  
(salle d'attente)

**16 h - 16 h 15**                    **pause**

**16 h 15 - 16 h 45** Discussion avec le(s) directeur(s) d'Unité  
<https://hceres-fr.zoom.us/j/91941706879?pwd=UldNZ1laMUZFVXJPNIN3UmhrWUfTdz09>  
(salle d'attente)

**16:45-17 : 15**    Discussion avec les représentants des organismes de gestion/tutelles  
<https://hceres-fr.zoom.us/j/92896626924?pwd=K1RkbGdlMSlPVMFsQ1FjTjBEc0hUUT09>  
(salle d'attente)

**17 h 15 - 18 h**    Réunion privée du comité de visite en vue de la préparation du rapport (huis-clos)  
<https://hceres-fr.zoom.us/j/93393200025?pwd=RDA2aXR0WVNWMTBWOVNuWWM1bGplQT09>  
(salle d'attente)

**18 h**                                Fin de la visite

## GENERAL OBSERVATIONS OF THE SUPERVISORS

Le Président

Paris, le 12 mars 2024

HCERES  
2 rue Albert Einstein  
75013 Paris

**Objet : Rapport d'évaluation de l'unité DER-PUR250024205 - VIFASOM - Sommeil - vigilance - fatigue et santé publique.**

Madame, Monsieur,

L'université Paris Cité (UPCité) a pris connaissance du rapport d'évaluation de l'Unité de Recherche **VIFASOM - Vigilance FATigue SOMmeil et santé publique**.

Ce rapport a été lu avec attention par la direction de l'unité, de la part de laquelle vous trouverez en annexe un courrier signalant des erreurs factuelles à corriger, par le vice-doyen Recherche et le doyen de la Faculté de Santé d'UPCité, par la vice-présidente Recherche d'UPCité et par moi-même. Nous vous remercions pour ce travail d'évaluation.

**Présidence**

**Référence**

Pr/DGDRIVE/2023

**Affaire suivie par**

Christine Debydeal -  
DGDRIVE

**Adresse**

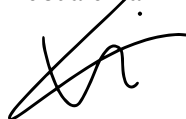
85 boulevard St-Germain  
75006 - Paris

Le doyen de la Faculté de Santé et moi-même souhaitons souligner que l'unité VIFASOM est unique dans le paysage d'UPCité. Il s'agit d'une unité multi sites qui constituait jusqu'à présent une unité de recherche propre au sein de la Faculté de santé. Cette unité qui possède toute l'expertise sur l'étude de la vigilance et du sommeil va évoluer au prochain quinquennat vers une UMR avec le service de santé des armées, ce qui est un aboutissement de sa très forte collaboration avec ce service, et constituera une première pour notre université.

Je vous prie d'agréer, Madame, Monsieur, l'expression de ma considération distinguée.

[www.u-paris.fr](http://www.u-paris.fr)

Édouard Kaminski





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**Pr Damien LEGER  
Dr Mounir CHENNAOUI  
Co-directors**

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**To HCERES evaluation  
campaign2023-2024  
representatives**

March 1, 2024

Dear Chairman and dear members of the Expert of Committee,

Dear Hcéres representative,

We have received and carefully read the report that you submitted to HCERES regarding the assessment and prospects of the VIFASOM team.

We want to thank you warmly for your high-quality expertise and the attention you paid to our team and its projects.

The expertise you bring to us will be highly valuable for the coming years.

Please accept our sincere recognition and thanks.

Mounir CHENNAOUI and Damien LEGER

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