



Luc Buée

# Lille Neuroscience & Cognition

*LilNCog*



13/0

Jean-Pierre Pruvo



## Histoire (des talents à la structuration)

2000

*Researchers: Amouyel, Bordet, Buée, Cordonnier, Devos, Giacobini, Jardri, Lambert, Leys, Pasquier, Prévot, Pruvo, Semah, Thomas, Vaiva, Vermersch...*

2010

Contrat Projet État-Région (CPER 2007-2013): DN2M Federation of teams involved in research on neurological and psychiatry disorders

Coordination: Régis Bordet & Luc Buée

2020

⇒  (2012-2024) consortium national sur la maladie d'Alzheimer (Coordination: Philippe Amouyel RID-AGE - Inserm) et les équipes lilloises de Buée (JPArc - Inserm), de Antoine (ScaLab - CNRS), de Landrieu (UGSF - CNRS) et CMRR-CHU Lille (F Pasquier - JPArc). Deux équipes hors Lille (Emmanuel Hirsch & Fred Checler). En 2020, inclusion de l'équipe Prévot.

Trois laboratoires faisant des neurosciences (RID-AGE et JPArc - ScaLab)

⇒ 2015-2020: Research Federation on Neuroscience

⇒ LiCEND (2017) Centre of Excellence in Neurodegeneration

⇒ LiINCog (2020-2025) Lille Neuroscience & Cognition



2012

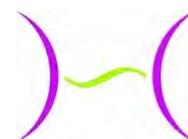


**Inserm**

**Université de Lille**



**UMR-S 1172**  
Centre de Recherche Jean-Pierre Aubert



**UGSF**  
Unité de Glycobiologie  
Structurale et Fonctionnelle



Amouyel - Lambert

Buée

Pasquier (Bordet)

Landrieu

Antoine - Nandrino





PMND 2014  
→ 2019

**DISTALZ**  
LABORATOIRE D'EXCELLENCE

**Inserm**

**Université de Lille**



**RID-AGE**  
UMR 1167 FACTEURS DE RISQUE ET DÉTERMINANTS MOLECULAIRES DES MALADIES LIÉES AU VIEILLISSEMENT

Amouyel - Lambert



**UMR-S 1172**  
Centre de Recherche Jean-Pierre Aubert

Buée

Pasquier (Bordet (Devos))

**UGSF**  
Unité de Glycobiologie Structurale et Fonctionnelle

Landrieu

**SCALab**  
SCIENCES COGNITIVES ET SCIENCES AFFECTIVES

Antoine - Nandrino

Jardri - Pins



LICEND



2020



**Inserm**



**Université de Lille**



Amouyel - Lambert  
Landrieu

Buée      Devos (Bordet)      Prévot

Antoine - Nandrino



**Lille Neuroscience & Cognition**

Melnyk      Jardri - Pins

Mars





Delphine Pins



David Devos



Luc Buée



Renaud Jardri



Patricia Melnyk



Vincent Prévot



Lennart Mars

# Lille Neuroscience & Cognition

*LiNCog*



Céline Brand



Jean-Pierre Pruvo



# Personnel

## Lille Neuroscience & Cognition

### Central Office

### Six Teams

Researchers: 50.5 FTE (n=109 – 15% EPST)

Inserm/CNRS: 16, Univ. Hospital: 45

University: 31, Hosp. Practitioner: 17

Fixed-term contract-researchers: 19

Administrative & Technical staff: 43 including 19 engineers

Fixed-term contract-staff: 11

PhD students : 50 (turn-over: about 15/year)

Undergraduate students (BSc, MSc, engineer): 65 per year

Middle/high school students: 20 per year

Inserm/CNRS researchers: 1 ETP full-time research

University: 0.5 ETP

Univ. Hospital: 0.1-0.5 ETP

Hosp. Practitioner: 0-0.3

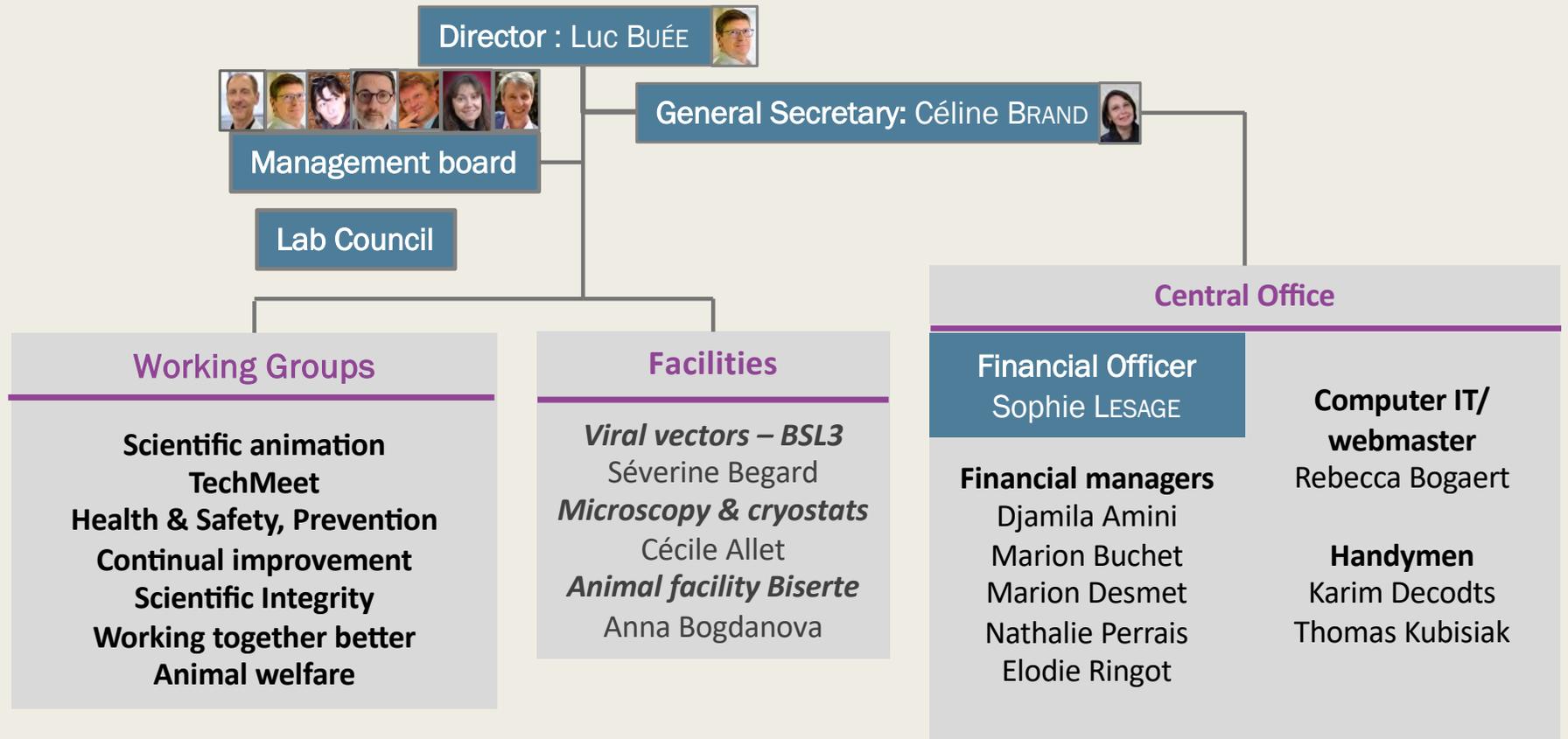
# Campus hospital-universitaire (CHU)

## Localisation des équipes



# Organisation chart UMR-S 1172 - Luc BUÉE

Lille Neuroscience & Cognition



Team  
DVCD

Team  
A&T

Team  
PSY

Team  
Nemesis

Team  
BBC

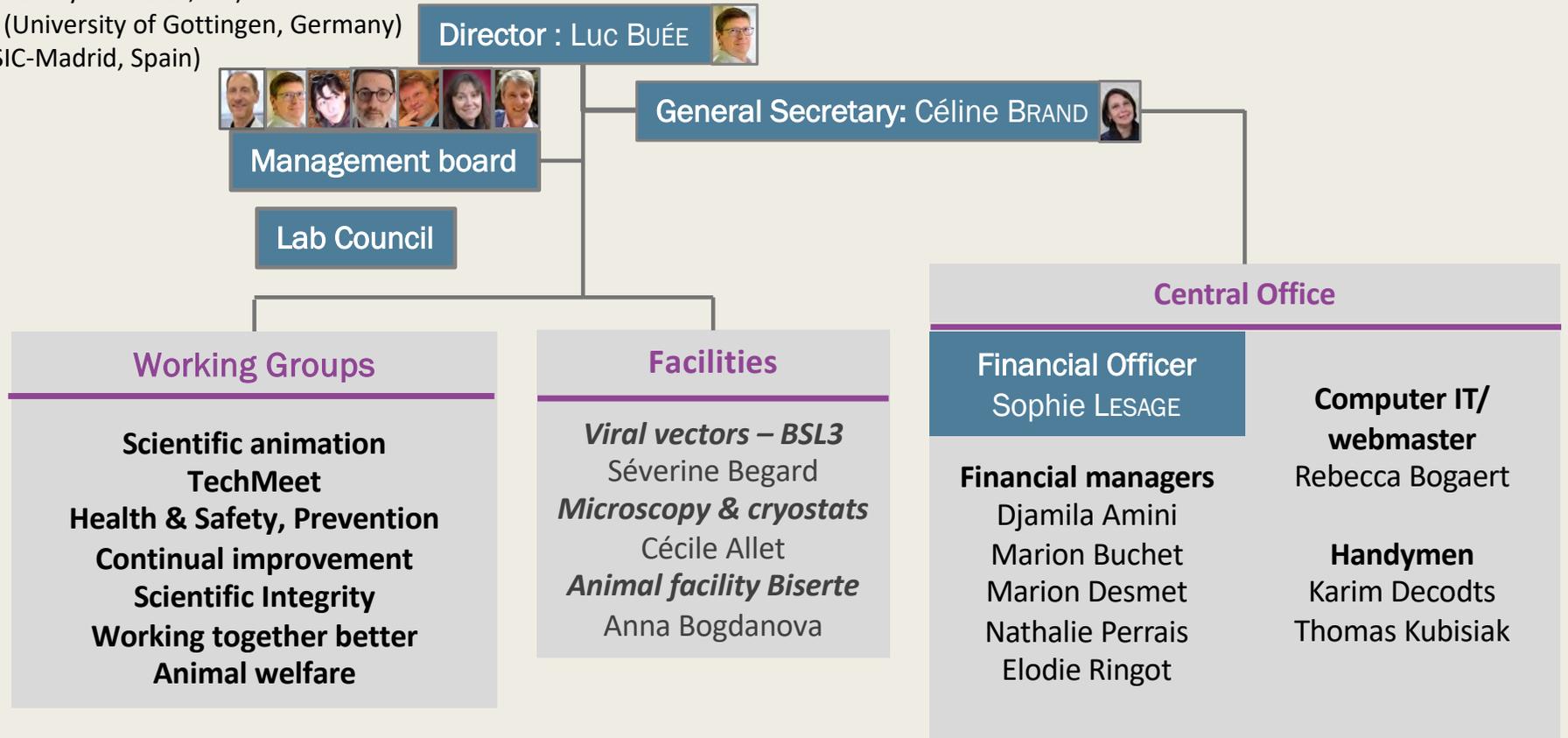
Team  
DPNB

## Scientific Advisory Board

Stuart Allan, (University of Manchester, UK) - Chair  
André Aleman (University de Groningen, Netherlands)  
Kate Ellacott (University of Exeter, UK)  
Alexander Flügel (University of Gottingen, Germany)  
Ana Martinez (CSIC-Madrid, Spain)

# Organisation chart UMR-S 1172 - Luc BUÉE

Lille Neuroscience & Cognition



Team  
DVCD

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BBC

Team  
DPNB

# Présentation LiNCog

Lille Neuroscience & Cognition

Directeur: Luc BUEE, PhD

Secrétaire générale: Céline BRAND, PhD

Central Office

## Six équipes

D Devos, MD, PhD, PU-PH - Degenerative and vascular cognitive disorders

L Buée, PhD, DR CNRS – Alzheimer & Tauopathies

R Jardri, MD, PhD, PU-PH  
- Plasticity and Subjectivity

D Pins, PhD, DR CNRS

P Melnyk, PhD, Professor - Brain Biology and Chemistry

V Prevot, PhD, DR Inserm - Development and Plasticity of the Neuroendocrine Brain

*Equipe émergente: L Mars, PhD, CR Inserm - Neuroinflammation and Multiple Sclerosis - NEMESIS*





David Devos

# Degenerative & vascular cognitive disorders



13/06/2019 – Luc Buée

## Communications towards society

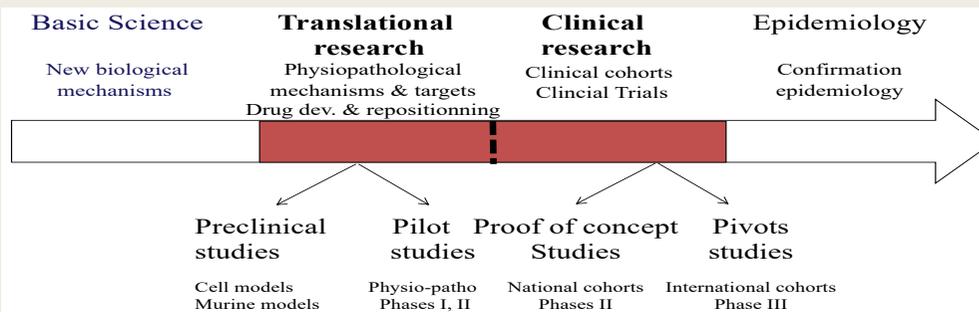
> 30 communication campaigns for the general public

# Degenerative and vascular cognitive disorders

## David Devos

**Towards a multidisciplinary, transnosographic and translational strategy to explore pathophysiology and pharmacological targets in degenerative & vascular cognitive disorders**

- 47 researchers **15 FTE**
- 15 PhD students
- 3 project managers
- 9 engineers, assistant engineers, technicians
- 10 clinical assistants

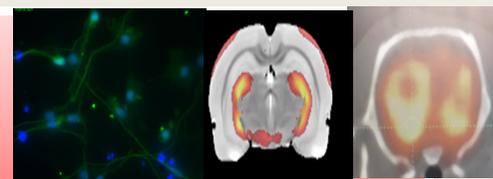


20 cohorts of patients (PD, ALS, Stroke, hemorrhage)  
> 3000 IRM > 10000 samples

**Strong partnerships with industries**  
Lundbeck, Pharmacosmos, PTC  
Therapeutics, Alterity, Chiesi, Air Liquide,  
Orion, Cajal Neuroscience, AB Science,  
roscoe-therapeutics, Theranexus

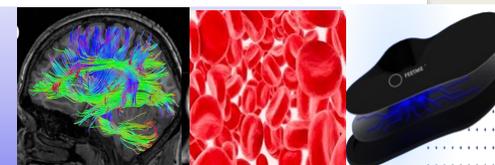
### 1 Pathophysiological mechanisms of neuronal degeneration

- secondary to vascular or non-vascular alterations
- using *in vitro* and *in vivo* models
- validation in humans on large longitudinal cohorts



### 2 Multiple dimensions of cognition & related biomarkers

- visual, emotional, behavioural, motor, social, affective
- Specific clinical assessments
- Translational wet, dry biomarkers (endophenotype, prognosis, drug response)



### 3 Innovative symptomatic & disease-modifying treatments

- Key molecular pathways obtained (#1)
- Controlled by specific clinical evaluations, biomarkers (#2)
- Clinical trials from phase I to phase III



**Lille Neuroscience & Cognition**

# Degenerative and vascular cognitive disorders

## David Devos

### Scientific Production 2019 - 2023

- 702 papers
- 5 new academic patents
- 2 start-ups creation
- 153 clinical studies

**InCites**  **TOP 1**

Top<sub>1%</sub> = 37  
 Top<sub>10%</sub> = 170  
 H-Index = 44



### Grants 2019 - 2023



### Tight links with Patient's organization



### Expert centers

- Parkinson's disease  
Pr Defebvre
- Neurovascular disorders  
Pr Cordonnier
- Alzheimer's disease  
Pr Pasquier
- Amyotrophic lateral sclerosis  
Dr Danel
- Human imaging  
Pr Semah, Pr Pruvo,  
Neurophysiology  
Pr Derambure

### Co-ordination of national networks



### Our spin off: start up

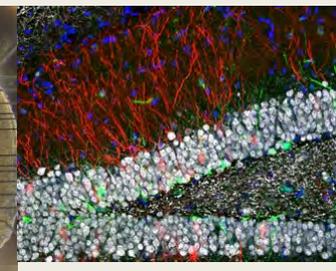
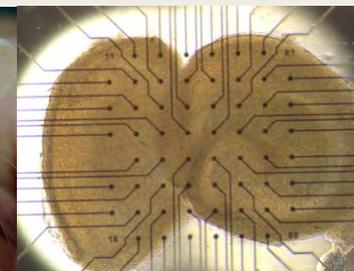
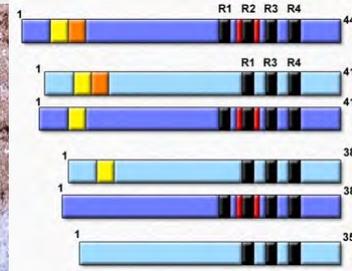
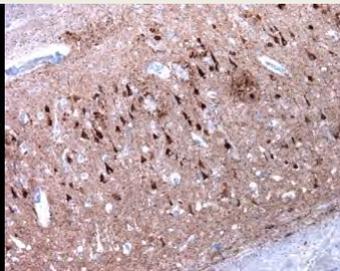




Luc Buée



# Alzheimer & Tauopathies



# Results & funding



## 1. From tau aggregates to new mechanism generating truncated tau species

- *Tau, integrated stress response and protein translation*
- *Diagnosis & therapy*



## 2. Prion-like tau propagation in AD and tauopathies: consequences for therapy

- *Organotypic brain slice cultures on a chip*
- *Extracellular vesicles in peripheral fluids*
- *Biotherapies & drug discovery*



## 3. Adenosine A2A receptors, targets of caffeine, as a molecular switch of neuro-glial communication

- *Brain homeostasis and cell-specific A2A receptors modulation*
- *Caffeine and clinical trial*



## 4. Brain infection and tau pathology

## 5. Atypical tau functions

### a. *Link between Tau, energy homeostasis and glucose metabolism*

- *Peripheral or central dysregulation of glucose homeostasis in tauopathies*

### b. *Tau functions and nucleic acids*

- *Mechanistic aspects*
- *New therapeutic strategies in Cancer*



## 6. Opportunities within the hospital campus: biomarkers, brain imaging, genetic disorders, neuropathology...



Lille  
Neuroscience  
& Cognition

# NLRP3 inflammasome activation drives tau pathology

<https://doi.org/10.1038/s41586-019-1769-z>

Received: 14 March 2019

Accepted: 2 October 2019

Published online: 20 November 2019

Christina Ising<sup>1,2</sup>, Carmen Venegas<sup>1</sup>, Shuangshuang Zhang<sup>1,2</sup>, Hannah Scheiblich<sup>1,2</sup>, Susanne V. Schmidt<sup>1</sup>, Ana Vieira-Saecker<sup>1,2</sup>, Stephanie Schwartz<sup>1,2</sup>, Shadi Albasset<sup>1,2</sup>, Róisín M. McManus<sup>1,2</sup>, Darío Tejera<sup>2</sup>, Angelika Griep<sup>2</sup>, Francesco Santarelli<sup>2</sup>, Frederic Grosseron<sup>2</sup>, Sabine Opitz<sup>1,2</sup>, James Stunden<sup>3</sup>, Maximilian Merten<sup>1</sup>, Rakez Kaye<sup>4</sup>, Douglas T. Golenbock<sup>5</sup>, David Blum<sup>7</sup>, Eicke Latz<sup>2,3,6</sup>, Luc Buée<sup>7</sup> & Michael T. Heneka<sup>1,2,6\*</sup>

nature  
biomedical engineering

ARTICLES

<https://doi.org/10.1038/s41551-021-00838-2>

Check for updates

## Reversal of RNA toxicity in myotonic dystrophy via a decoy RNA-binding protein with high affinity for expanded CUG repeats

Ludovic Arandel<sup>1,5</sup>, Magdalena Matloka<sup>1,5</sup>, Arnaud F. Klein<sup>1</sup>, Frédérique Rau<sup>1</sup>, Alain Sureau<sup>1</sup>, Michel Ney<sup>1</sup>, Aurélien Cordier<sup>1</sup>, Maria Kondili<sup>1</sup>, Micaela Polay-Espinoza<sup>1</sup>, Naira Naouar<sup>1</sup>, Arnaud Ferry<sup>1,2</sup>, Mégane Lemaître<sup>1,3</sup>, Séverine Begard<sup>4</sup>, Morvane Colin<sup>4</sup>, Chloé Lamarre<sup>4</sup>, Héléne Tran<sup>4</sup>, Luc Buée<sup>4</sup>, Joëlle Marie<sup>1</sup>, Nicolas Sergeant<sup>4,5</sup> and Denis Furling<sup>1,5\*</sup>

nature  
neuroscience

ARTICLES

<https://doi.org/10.1038/s41593-020-00728-x>

Check for updates

## Tau accumulation in astrocytes of the dentate gyrus induces neuronal dysfunction and memory deficits in Alzheimer's disease

Kevin Richetin<sup>1,2,3</sup>, Pascal Steullet<sup>1</sup>, Mathieu Pachoud<sup>2,3</sup>, Romain Perbet<sup>4</sup>, Enea Parietti<sup>1</sup>, Mathischan Maheswaran<sup>2,3</sup>, Sabiha Eddarkaoui<sup>4</sup>, Séverine Bégard<sup>4</sup>, Catherine Pythoud<sup>2,3</sup>, Maria Rey<sup>2,3</sup>, Raphaëlle Caillierez<sup>4</sup>, Kim Q Do<sup>1</sup>, Sophie Halliez<sup>4</sup>, Paola Bezzi<sup>5</sup>, Luc Buée<sup>4</sup>, Geneviève Leuba<sup>1</sup>, Morvane Colin<sup>4</sup>, Nicolas Toni<sup>1,6</sup> and Nicole Déglon<sup>2,3,6</sup>

JCI The Journal of Clinical Investigation

## Caffeine intake exerts dual genome-wide effects on hippocampal metabolism and learning-dependent transcription

Isabel Paiva, ... , Anne-Laurence Boutillier, David Blum

J Clin Invest. 2022;132(12):e149371. <https://doi.org/10.1172/JCI149371>.

Permanent researchers: 17  
4 Res – 6 Univ-Res – 7 Hosp-Univ-Res  
Fixed term contract-researchers: 5  
PhD students: 7  
Technical staff: 11  
6 permanent and 5 on fixed term contract

Many articles from clinical networks:

Amyloid Imaging to Prevent Alzheimer's Disease (AMYPAD) Consortium  
Genetic FTD Initiative, GENFI

Brevets: 8 depuis 2019

Licences: 5 en cours

2biotechs, 1 projet de spin-off

## Functional Analyses of Two Novel LRRK2 Pathogenic Variants in Familial Parkinson's Disease

Iida Coku, MSc,<sup>1</sup> Eugénie Mutez, MD, PhD,<sup>1,2</sup> Sabiha Eddarkaoui, MSc,<sup>1</sup> Sébastien Carrier, MSc,<sup>1</sup> Antoine Marchand, MSc,<sup>1</sup> Claire Deldycke, MSc,<sup>1</sup> Liesel Goveas, MSc,<sup>1</sup> Guillaume Baille, MD, PhD,<sup>2</sup> MéliSSa Tir, MD,<sup>3</sup> Romain Magnez, MSc,<sup>4</sup> Xavier Thuru, PhD,<sup>4</sup> Gaëlle Vermeersch, MD,<sup>5</sup> Wim Vandenberghe, MD, PhD,<sup>6,7</sup> Luc Buée, PhD,<sup>1</sup> Luc Defebvre, MD, PhD,<sup>1,2</sup> Bernard Sablonnière, MD, PhD,<sup>1,8</sup> Marie-Christine Chartier-Harlin, PhD,<sup>11\*</sup> Jean-Marc Taymans, PhD,<sup>11\*</sup> and Vincent Huin, MD, PhD<sup>1,8\*</sup>

Movement Disorders, Vol. 37, No. 8, 2022

Leroy et al. *Alzheimer's Research & Therapy* (2021) 13:19  
<https://doi.org/10.1186/s13195-020-00753-9> Alzheimer's Research & Therapy

RESEARCH

Open Access

## Characteristics and progression of patients with frontotemporal dementia in a regional memory clinic network

Mélanie Leroy<sup>1</sup>, Maxime Bertoux<sup>1</sup>, Emilie Skrobala<sup>2</sup>, Elisa Mode<sup>3</sup>, Catherine Adnet-Bonte<sup>1</sup>, Isabelle Le Ber<sup>4,5</sup>, Stéphanie Bombois<sup>1</sup>, Pascaline Cassagnaud<sup>1</sup>, Yaohua Chen<sup>1</sup>, Vincent Deramecourt<sup>1</sup>, Florence Lebert<sup>1</sup>, Marie Anne Mackowiak<sup>1</sup>, Adeline Rollin Sillaire<sup>1</sup>, Marielle Wathelet<sup>6</sup>, Florence Pasquier<sup>1</sup>, Thibaud Lebouvier<sup>1\*</sup> and the Méotix network

Molecular Therapy  
Original Article

## Inhibition of Tau seeding by targeting Tau nucleation core within neurons with a single domain antibody fragment

Clément Danis,<sup>1,2,3,5</sup> Eljan Dupré,<sup>1,2,3,5</sup> Orgeta Zejneli,<sup>1,2,3,5</sup> Raphaëlle Caillierez,<sup>7</sup> Justine Mortelet,<sup>1,2</sup> Sabiha Eddarkaoui,<sup>3</sup> Anne Loyens,<sup>3</sup> François-Xavier Cantre  
Jean-Christophe Rain,<sup>8</sup> Morvane Colin,<sup>3,6</sup> Luc Buée,<sup>3,6</sup> and Isabelle Landrieu<sup>1,2,6</sup>

BRAIN  
A JOURNAL OF NEUROLOGY

## Prevention of tau seeding and propagation by immunotherapy with a central tau epitope antibody

Marie Albert,<sup>1,2,1</sup> Georges Mairat-Coello,<sup>3,1</sup> Clément Danis,<sup>1,2,4</sup> Sarah Lieger,<sup>1,2</sup> Raphaëlle Caillierez,<sup>1,2</sup> Sébastien Carrier,<sup>1,2</sup> Emilie Skrobala,<sup>2,5,4</sup> Isabelle Landrieu,<sup>2,4</sup> Anne Michel,<sup>3</sup> Mathieu Schmitt,<sup>1</sup> Martin Citron,<sup>1</sup> Patrick Downey,<sup>7</sup> Jean-Philippe Courade,<sup>8</sup> Luc Buée<sup>1,2,5,1,6</sup> and Morvane Colin<sup>1,2,5,1,6</sup>

**P**LASTICITY &

**S**UBJECTIVIT **Y**



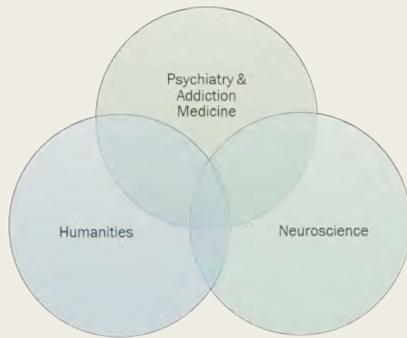
THE **PSY** TEAM



INSERM June 2023

# Research Context of the PSY team

## 6 research axes



**Biotyping & New phenotypes**

(A. Amad)

**Computational Psychiatry**

(P. Yger & P. Leptourgos)

Adaptation to the disease process

**SUBJECTIVITY**

Treatment response

**Environmental Factors**

(T. Fovet & M. Horn)

**Hallucinations & Mental Intrusions**

(R Jardri)

Susceptibility to the environment

**Social Interactions**

(D. Pins)

**Cognitive & Affective Biases**

(F. D'Hondt)

# Grants & Production Outputs 2019 - 2023



742 k€ (European fundings)  
 171 M€ (National fundings)  
 436 k€ (Regional fundings)  
 51 k€ (Foundations)

221 PUBLICATIONS

InCites



Top<sub>1%</sub> = 5  
 Top<sub>5%</sub> = 13  
 Top<sub>10%</sub> = 22

**FONDATION PIERRE DENIKER**  
 POUR LA RECHERCHE ET LA PRÉVENTION EN SANTÉ MENTALE  
**LA FONDATION de LILLE**  
 Reconnue d'Utilité Publique  
**Inserm**  
 I-SITE UNIVERSITÉ LILLE NORD-EUROPE  
 Région Hauts-de-France  
 Fondation pour la Recherche Médicale  
 Fondation de France  
 FRANCE 2030  
 European Commission  
 Horizon 2020 European Union funding for Research & Innovation  
 anr  
 DIRECTION GÉNÉRALE DE L'OFFRE DE SOINS



**Inserm**



**Université  
de Lille**



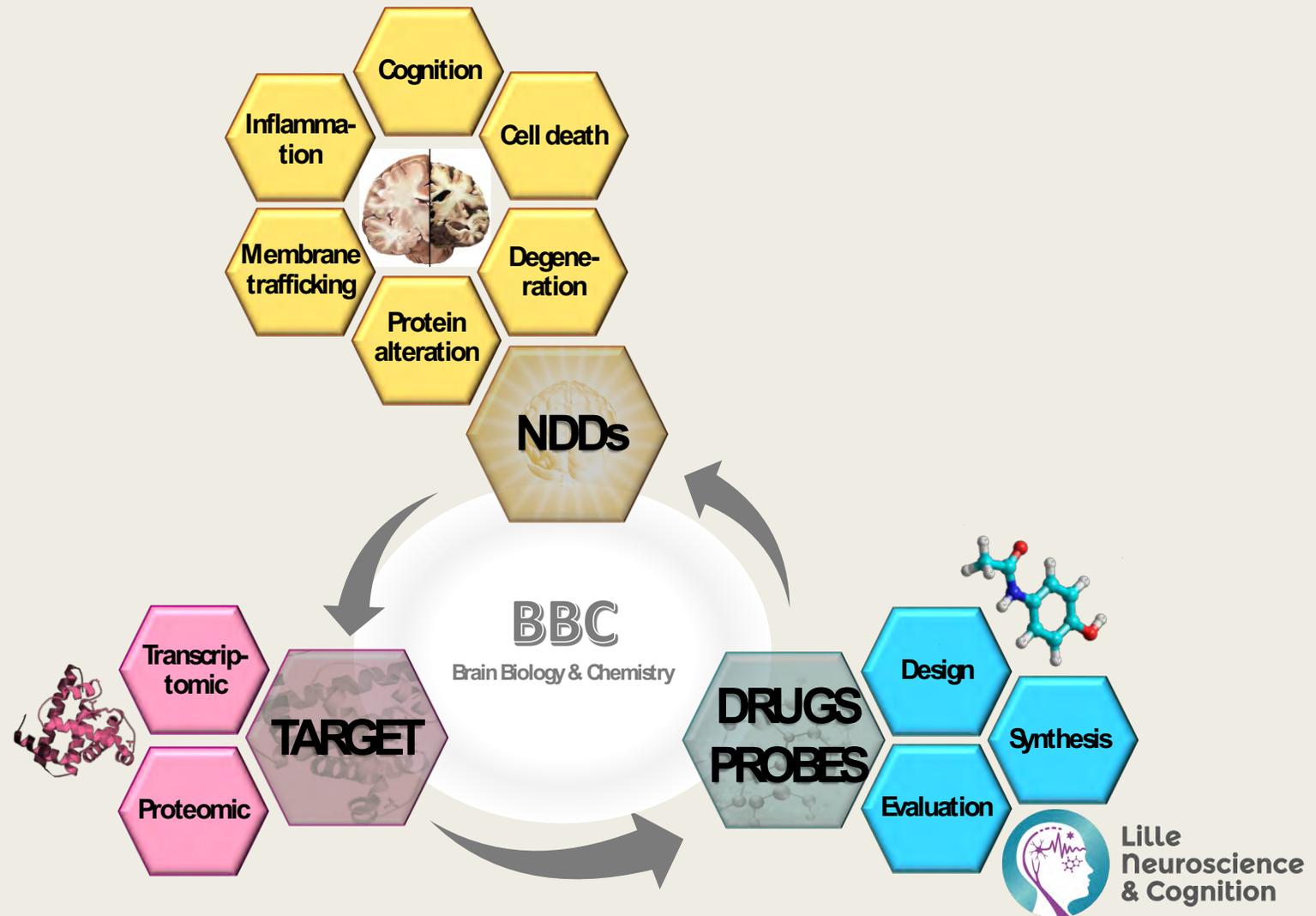
Patricia Melnyk

# Brain Biology & Chemistry

**BBC**



# To develop therapeutic solutions for the treatment of NeuroDegenerative Diseases (NDDs)



## BBC Team expertise

14 tenured researchers  
6 research staff  
7 PhD students  
4 post doctoral fellows

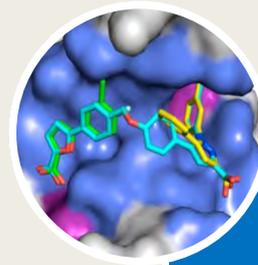
&

## recent achievements



Drug development

**AZP2006 in phase 2 for PSP**



Hit-to-lead

**1st nanomolar ACSL4 inhibitor as anti-ferroptotic agent**



Hit discovery

**Discovery of protein protein modulators**

- **LRRK2/PP2A for the treatment of PD**
- **YAP/TEAD for the treatment of glioblastoma**



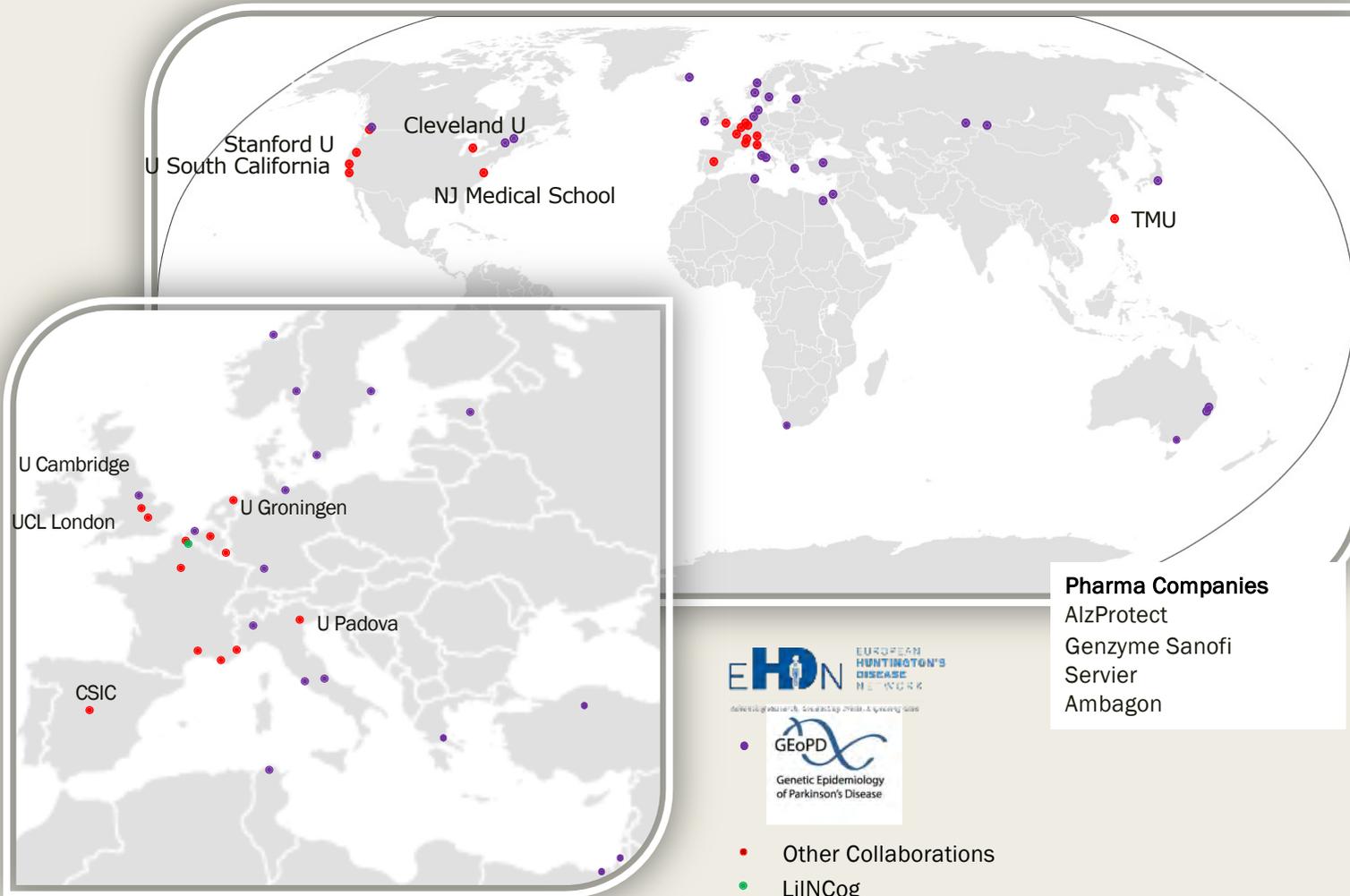
Brain biology

**LRRK2 pathogenic mutations**

**LRRK2 phosphointeractome**

**New risks factors for PD**

# BBC collaborations

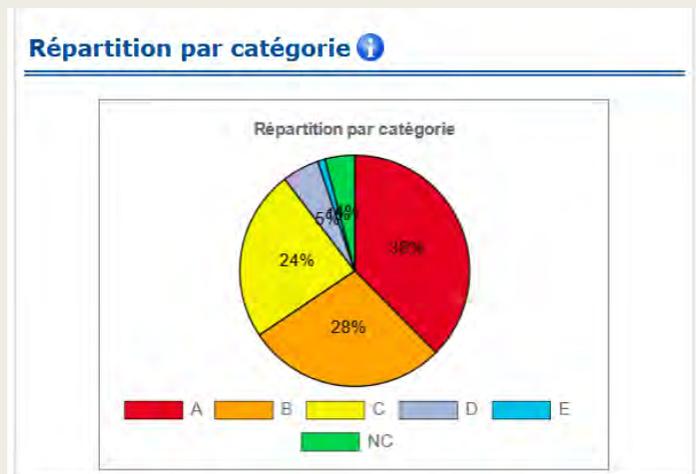


**Pharma Companies**  
 AlzProtect  
 Genzyme Sanofi  
 Servier  
 Ambagon

# & grants



## BBC scientific production



2019-now : 96 papers and reviews

Mean IF : 5 in 2019-2020 ↗ 9.2 now

Journal of  
**Medicinal  
Chemistry**

J|A|C|S

**nature**  
International journal of science

EUROPEAN JOURNAL OF  
**MEDICINAL  
CHEMISTRY**

npj | parkinson's disease

**nature communications**

**Movement  
Disorders**



- > 10 invited conferences/seminars
- > 30 international oral communications

## BBC technology transfert

2019-2022 : 5 patents

Ezeprogind (AZP2006), a compound from the team is ending clinical phase 2

AlzproTect





Vincent Prévot

# Développement & Plasticité du cerveau neuroendocrine

30 ♀ + 13 ♂ = 43

**Tenured researchers (7)**

**Non-tenured Researchers (2)**

**Post-doct fellows (8)**

**Physicians (6)**

**Tech. Staff (5) + 1**

**PhD students (15)**



13/06/201

# A team of PIs with unique expertise!



Consolidator

**Paolo Giacobini**  
DR1 Inserm



**Sébastien G Bouret**  
DR1 CNRS



**Vincent Prévot**  
DR1 Inserm



Fat cells



Liver



Muscle



Gut



**Virginie Mattot**  
CRCN CNRS

2017



**Konstantina Chachlaki**  
Chercheuse CDD  
miniNO scientific Coordinator  
Member European Health Parliament



**Ariane Sharif**  
Ass. Prof



**Bénédicte Dehouck**  
Ass. Prof



**Ines Martinez-Corral**  
CRCN Inserm

2019



**Gilles Bloch**  
President of Aviesan,  
Chairman and CEO of Inserm

"Mental health and Brain health are priorities for Aviesan which has always encouraged implementation of additional, voluntary measures to promote mental well-being. Given the important burden on psychiatric disorders, efforts need to be made without delay on promoting medical research in psychiatry, fostering more precise and predictive approach. Knowledge from fundamental research is to contribute to a better understanding of the physio-pathological processes and the appearance of psychiatric disorders and their biological and environmental risk factors. It is also important to help improve our ability to monitor the evolution of these disorders by fostering research on efficient diagnostic, prognostic and stratification biomarkers. Lastly, care need to be led in the direction of more innovative strategies and the involvement of psychotherapeutic and psychosocial approaches. Being committed to such value and after reading the Policy Recommendation entitled "Towards a healthy workforce in the EU - Implementing actions for sustainable work life" which clearly mentioned the necessity of research, Aviesan supports this Recommendation."



**Lille Neuroscience & Cognition**

**ARTICLES**  
<https://doi.org/10.1038/s41593-021-00960-z>  
 nature neuroscience  
 Check for updates

**GnRH neurons recruit astrocytes in infancy to facilitate network integration and sexual maturation**

Giuliana Pellegrino<sup>1,3</sup>, Marion Martin<sup>1,3</sup>, Cécile Allet<sup>1,3,4</sup>, Tori Lhomme<sup>1</sup>, Sarah Geller<sup>2</sup>, Delphine Franssen<sup>5</sup>, Virginie Mansuy<sup>4</sup>, Maria Manfredi-Lozano<sup>1</sup>, Adrian Coutteau-Robles<sup>1</sup>, Virginia Delli<sup>1</sup>, S. Rasika<sup>6</sup>, Danièle Mazur<sup>1</sup>, Anne Loyens<sup>1</sup>, Manuel Tena-Sempere<sup>5,6,7</sup>, Juergen Siepmann<sup>8</sup>, François P. Pralong<sup>4</sup>, Philippe Ciofi<sup>9,10</sup>, Gabriel Corfas<sup>11</sup>, Anne-Simone Parent<sup>1</sup>, Sergio R. Ojeda<sup>2</sup>, Ariane Sharif<sup>1,12,13</sup> and Vincent Prevot<sup>1,14,15</sup>

RESEARCH

**RESEARCH ARTICLE**

**NEURODEVELOPMENT**

**GnRH replacement rescues cognition in Down syndrome**

Maria Manfredi-Lozano<sup>1,2</sup>, Valerie Leysen<sup>1,2</sup>, Michela Adamo<sup>3,4</sup>, Isabel Paiva<sup>2</sup>, Renaud Rovera<sup>6</sup>, Jean-Michel Pignatelli<sup>1</sup>, Fatima Ezzahra Timzoura<sup>1,2</sup>, Michael Caudlish<sup>1</sup>, Sabrina Edrarkoufi<sup>1</sup>, Samuel A. Malone<sup>1,2</sup>, Mauro S. B. Silva<sup>1,2,5</sup>, Sara Trova<sup>1,2,6</sup>, Monica Imbernon<sup>1,2</sup>, Laurine Decoster<sup>1,2</sup>, Ludovica Cotellessa<sup>1,2</sup>, Manuel Tena-Sempere<sup>7</sup>, Marc Claret<sup>10,11</sup>, Ariane Patoloni-Giacobino<sup>1,2</sup>, Damien Plassard<sup>1</sup>, Emmanuelle Paccou<sup>1</sup>, Nathalie Vionnet<sup>1</sup>, James Acierno<sup>1</sup>, Aleksandra Maleska Maczeski<sup>14</sup>, Antoine Lutti<sup>15</sup>, Frank Priege<sup>16</sup>, S. Rasika<sup>1,2</sup>, Federico Santoni<sup>1</sup>, Ulrich Boehm<sup>1</sup>, Philippe Ciofi<sup>1</sup>, Luc Bueé<sup>1</sup>, Nasser Haddjeri<sup>1</sup>, Anne-Laurence Bouillier<sup>1</sup>, Jens Kuhle<sup>14</sup>, Andrea Messina<sup>1,4</sup>, Bogdan Draganski<sup>15,16</sup>, Paolo Giacobini<sup>1,2,17</sup>, Nelly Pitteloud<sup>1,4,18</sup>, Vincent Prevot<sup>1,2,19</sup>

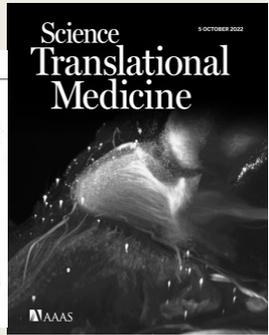
Manfredi-Lozano et al., *Science* 377, eub4515 (2022) | 2 September 2022

SCIENCE TRANSLATIONAL MEDICINE | RESEARCH ARTICLE

**HYPOGONADOTROPIC HYPOGONADISM**

***NOS1* mutations cause hypogonadotropic hypogonadism with sensory and cognitive deficits that can be reversed in infantile mice**

Konstantina Chachlak<sup>1,2,3,4,5</sup>, Andrea Messina<sup>3,4</sup>, Virginia Delli<sup>1,2</sup>, Valerie Leysen<sup>1,2,3</sup>, Csilla Maurny<sup>6</sup>, Chieko Huber<sup>7</sup>, Gaëtan Ternier<sup>1,2</sup>, Katalin Skrapits<sup>8</sup>, Georgios Papadakis<sup>3,4</sup>, Sonal Shruti<sup>1,2,5</sup>, Maria Kapanidou<sup>9</sup>, Xu Cheng<sup>3,4</sup>, James Acierno<sup>3,4</sup>, Jesse Rademaker<sup>3,4</sup>, Sowmyalakshmi Rasika<sup>1,2</sup>, Richard Quinton<sup>10</sup>, Marek Niedziela<sup>11</sup>, Dagmar L'Allemand<sup>11</sup>, Duarte Pignatelli<sup>12</sup>, Mirjam Dirlewander<sup>13</sup>, Mariarosaria Lang-Muritano<sup>14</sup>, Patrick Kempf<sup>15</sup>, Sophie Cateau-Jonard<sup>16,17</sup>, Nicolas J. Niederländer<sup>18</sup>, Philippe Ciofi<sup>17</sup>, Manuel Tena-Sempere<sup>18,19,20</sup>, John Garthwaite<sup>21</sup>, Laurent Storme<sup>2,22</sup>, Paul Avan<sup>23</sup>, Erik Hrabovszky<sup>24</sup>, Alan Carleton<sup>7</sup>, Federico Santoni<sup>3,4</sup>, Paolo Giacobini<sup>1,2</sup>, Nelly Pitteloud<sup>3,4</sup>, Vincent Prevot<sup>1,2,4</sup>



- MINIPUBERTY: a critical period & a window of opportunities

- HYPOTHALAMIC – PITUITARY – GONADAL AXIS & METABOLISM

- TANYCYTES in the CENTRAL CONTROL OF METABOLISM

- CENTRAL CONTROL OF METABOLISM

Cell Metabolism

CellPress OPEN ACCESS

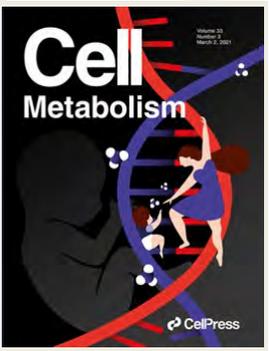
**Article**

**Polycystic ovary syndrome is transmitted via a transgenerational epigenetic process**

Nour El Houda Mimouni<sup>1,2</sup>, Isabel Paiva<sup>3,4</sup>, Anne-Laure Barbetin<sup>1</sup>, Fatima Ezzahra Timzoura<sup>1</sup>, Damien Plassard<sup>1</sup>, Anne-Laurence Bouillier<sup>1,5,6</sup> and Paolo Giacobini<sup>1,6,7</sup>

<sup>1</sup>Univ. Lille, Inserm, CHU Lille, Laboratory of Development and Plasticity of the Postnatal Brain, Lille Neuroscience & Cognition, UMR-S1172, FHU 1000 days for health, 90000 Lille, France  
<sup>2</sup>Université de Strasbourg, UMR 7264 CNRS, Laboratoire de Neurosciences Cognitives et Adaptatives (LNC), 12 Rue Goethe, Strasbourg 67000, France  
<sup>3</sup>Université de Strasbourg, UMR 7104, INSERM U1258, GenomEast Platform, Institut de Génétique et de Biologie Moléculaire et Cellulaire (IGBMC), Université de Strasbourg, Illkirch, France  
<sup>4</sup>CHU Lille, Service de Biochimie et Hormonologie, Centre de Biologie Pathologie, Lille, France  
<sup>5</sup>CHU Lille, Service de Gynécologie Médicale, Hôpital Jeanne de Flandre, Lille, France  
<sup>6</sup>These authors contributed equally  
<sup>7</sup>Last contact

\*Correspondence: laureh@univ-lille.fr (A.-L.B.), paolo.giacobini@univ-lille.fr (P.G.)  
<https://doi.org/10.1016/j.cmet.2021.01.004>



The Journal of Clinical Investigation

RESEARCH ARTICLE

**Tanycytic networks mediate energy balance by feeding lactate to glucose-insensitive POMC neurons**

Tori Lhomme<sup>1</sup>, Jerome Clasadonte<sup>1</sup>, Monica Imbernon<sup>1</sup>, Daniela Fernandois<sup>1</sup>, Florent Sauve<sup>1</sup>, Emilie Caron<sup>1</sup>, Natalia da Silva Lima<sup>2,3</sup>, Violeta Heras<sup>2,3</sup>, Ines Martinez-Corral<sup>1</sup>, Helge Mueller-Fielitz<sup>4</sup>, Sowmyalakshmi Rasika<sup>1</sup>, Markus Schwaninger<sup>4</sup>, Ruben Nogueiras<sup>2,3</sup> and Vincent Prevot<sup>1</sup>

Four patents

PLOS BIOLOGY

RESEARCH ARTICLE

**Maternal obesity-induced endoplasmic reticulum stress causes metabolic alterations and abnormal hypothalamic development in the offspring**

Soyoung Park<sup>1</sup>, Alice Jang<sup>1</sup>, Sébastien G. Bouret<sup>1,2,3,4</sup>

**Tanycytes control hypothalamic liraglutide uptake and its anti-obesity actions**

Monica Imbernon<sup>1,2</sup>, Chiara Saponaro<sup>2,3</sup>, Hans Christian Oederberg Helms<sup>1,2</sup>, Manon Duquenne<sup>1</sup>, Daniela Fernandois<sup>1</sup>, Eleonora Deligia<sup>1</sup>, Raphael G.P. Denis<sup>1</sup>, Daniela Herrera Moro Chao<sup>1</sup>, Sowmyalakshmi Rasika<sup>1</sup>, Bart Staals<sup>1</sup>, François Pattou<sup>2</sup>, Frank W. Priege<sup>2</sup>, Birger Brodin<sup>2</sup>, Serge Luquet<sup>2</sup>, Caroline Bonner<sup>2,1,2</sup> and Vincent Prevot<sup>1,2,4,5</sup>

Article

Cell

**Human Semaphorin 3 Variants Link Melanocortin Circuit Development and Energy Balance**

Agatha A. van der Klaauw<sup>1,13</sup>, Sophie Crozier<sup>2,13</sup>, Edson Mendes de Oliveira<sup>1</sup>, Lukas K.J. Stadler<sup>1</sup>, Soyoung Park<sup>1</sup>, Youxin Kong<sup>1,4</sup>, Matthew C. Bantton<sup>1,12</sup>, Parina Tandon<sup>1</sup>, Audrey E. Hendricks<sup>1,4</sup>, Julia M. Krogh<sup>1</sup>, Susanna E. Riley<sup>1</sup>, Sofia Papadia<sup>1</sup>, Elana Henning<sup>1</sup>, Rebecca Bounds<sup>1</sup>, Elena G. Bochkukova<sup>1,10</sup>, Vanisha Mistry<sup>1</sup>, Stephen O'Rahilly<sup>1</sup>, Richard B. Simerly<sup>2,13</sup>, INTERVAL, UK10K Consortium, James E.N. Minchin<sup>1</sup>, Inês Barroso<sup>1,5</sup>, E. Yvonne Jones<sup>1</sup>, Sébastien G. Bouret<sup>1,13,14,15</sup> and I. Sadaf Farooqi<sup>1,13,14,16</sup>

nature metabolism

ARTICLES

**Leptin brain entry via a tanycytic LepR-EGFR shuttle controls lipid metabolism and pancreas function**

Manon Duquenne<sup>1</sup>, Cintia Folgueira<sup>2,3,4</sup>, Cyril Bourrouh<sup>4,5</sup>, Marion Millet<sup>4,6</sup>, Anisia Silva<sup>4,6,7</sup>, Jérôme Clasadonte<sup>1,8</sup>, Monica Imbernon<sup>1</sup>, Daniela Fernandois<sup>1</sup>, Ines Martinez-Corral<sup>1</sup>, Sowmya Kusumakshi<sup>1</sup>, Emilie Caron<sup>1</sup>, S. Rasika<sup>1</sup>, Eleonora Deligia<sup>1</sup>, Nathalie Jouy<sup>1,9</sup>, Asturo Oishi<sup>10</sup>, Massimiliano Mazzone<sup>11</sup>, Eric Trinquet<sup>12</sup>, Jan Tavernier<sup>13</sup>, Young-Bum Kim<sup>14</sup>, Stéphane Ory<sup>15</sup>, Ralf Jockers<sup>16</sup>, Markus Schwaninger<sup>17</sup>, Ulrich Boehm<sup>18</sup>, Ruben Nogueiras<sup>19</sup>, Jean-Sébastien Annicotte<sup>20</sup>, Stéphane Gasman<sup>21</sup>, Julie Dam<sup>22</sup> and Vincent Prevot<sup>1,2,3,23</sup>

# STRATEGY

## ➤ General aim

To create a stable, visible and well-organized structure developing its own scientific strategy emphasizing *translational and transnosographic approaches* in neuroscience

## ➤ Specific aims

- To foster *translational research*
- To strenghten *synergy* between teams with different scientific backgrounds
- To create *visibility* for our Centre
- To promote national and *international* collaborations
- To *attract* new researchers and new teams

## ➤ Assets

- *Complementarity – Common interests – Willingness to cooperate - Fundings*

# Translational and transnosographic approaches in Neuroscience

## *Our aims and indicators of quality*

- **Competing Funding:** Natl fundings, PIA, ANR, European, ERC, Horizon Europe, international...
- **Translational research:** Number of common funded projects, publications and citation index
- **Technology transfer:** patents & licensing, spin-offs and industrial contracts
- **International networks**

# Presentation LiNCog: fundings

Lille Neuroscience & Cognition

**Inserm**



**Université de Lille**



Les Programmes Hospitaliers de Recherche Clinique (PHRC)



DIRECTION GÉNÉRALE DE L'OFFRE DE SOINS



# Budget & manpower

Département des Affaires Financières

Paris, le 14 mars 2023

Bureau de la Politique Budgétaire

## NOTIFICATION DU BUDGET INSERM 2023

UNITE DE RECHERCHE	U 1172
INSTITUT THEMATIQUE	Neurosciences, sciences cognitives, neurologie, psychiatrie
RESPONSABLE	Luc BUEE
DELEGATION REGIONALE	Nord Ouest

Ressources externes gérées par l'Inserm >16 millions en 2022 et 2023

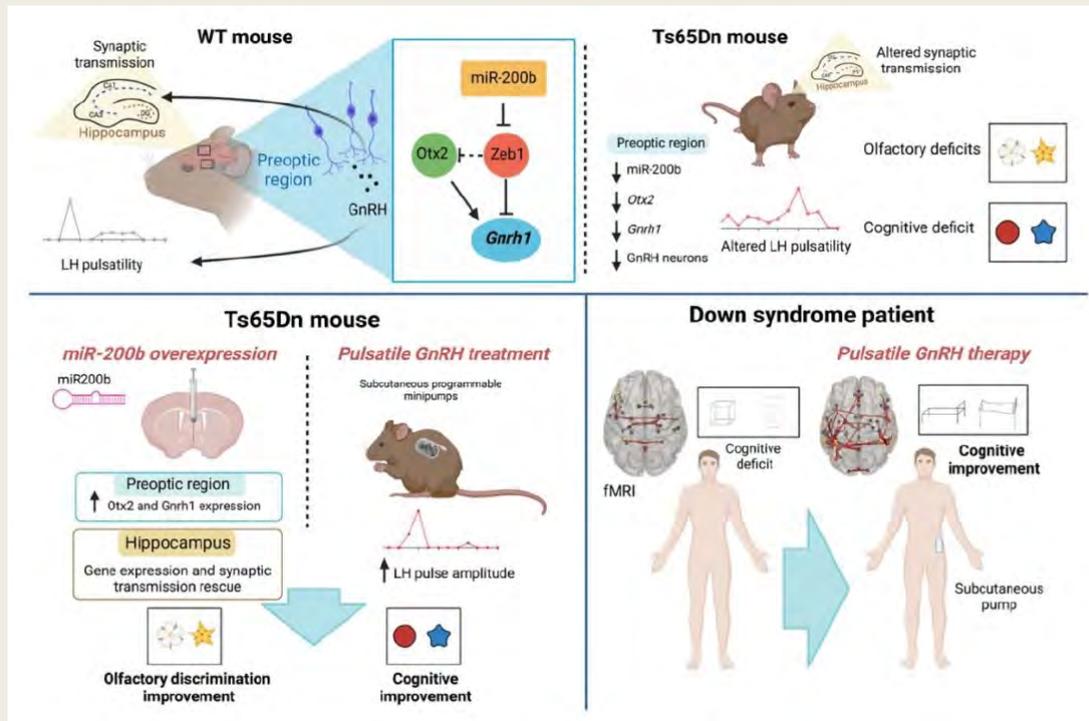
RESSOURCES EXTERNES GERÉES PAR L'INSERM EN 2023 (c)	16 270 496 €
DOTATION NOUVEAUX RECRUTES 2023 (d)	15 000 €
Pour information, rappel des budgets 2022 de :	

Masse salariale:  
 environ 3 millions €,  
 1/3 Inserm, 2/3 RP

# Translational and transnosographic approaches in Neuroscience

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- Competing Funding: Natl fundings, PIA, ANR, European, ERC, Horizon Europe, international...
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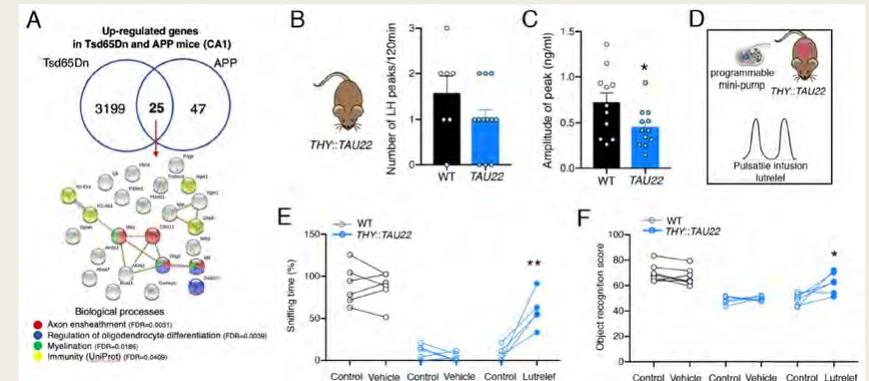


**NEURODEVELOPMENT**

**GnRH replacement rescues cognition in Down syndrome**

Maria Manfredi-Lozano<sup>†</sup>, Valerie Leysen<sup>†</sup>, Michela Adamo<sup>†</sup>, Isabel Paiva, Renaud Rovera, Jean-Michel Pignat, Fatima Ezzahra Timzoura, Michael Candlish, Sabiha Eddarkouï, Samuel A. Malone, Mauro S. B. Silva, Sara Trova, Monica Imbernon, Laurine Decoster, Ludovica Cotellessa, Manuel Tena-Sempere, Marc Claret, Ariane Paoloni-Giacobino, Damien Plassard, Emmanuelle Paccou, Nathalie Vionnet, James Acierno, Aleksandra Maleska Maceski, Antoine Lutti, Frank Pfrieger, S. Rasika, Federico Santoni, Ulrich Boehm, Philippe Ciofi, Luc Buée, Nasser Haddjeri, Anne-Laurence Boutillier, Jens Kuhle, Andrea Messina, Bogdan Draganski, Paolo Giacobini<sup>‡</sup>, Nelly Pitteloud<sup>\*‡</sup>, Vincent Prevot<sup>\*‡</sup>

WO/2020/221821 - Pulsative GnRH administration for treating cognitive disorders.



CoEN funding

The CAFCA clinical phase III trial



**Beneficial effects of caffeine in a transgenic model of Alzheimer's disease-like tau pathology**  
Cyril Laurent<sup>a,b</sup>, Sabiha Eddarkaoui<sup>a,b</sup>, Maxime Derisbourg<sup>a,b</sup>, Antoine Leboucher<sup>a,b</sup>, Dominique Demeyer<sup>a,b</sup>, Sébastien Carrier<sup>a,b</sup>, Marion Schneider<sup>c</sup>, Malika Hamdane<sup>a,b</sup>, Christa E. Müller<sup>c</sup>, Luc Buée<sup>a,b,d</sup>, David Blum<sup>a,b,d,\*</sup>

OPEN  Molecular Psychiatry (2016) 21, 97–107  
© 2016 Macmillan Publishers Limited All rights reserved 1359-4184/16  
[www.nature.com/mp](http://www.nature.com/mp)

**ORIGINAL ARTICLE**  
**A<sub>2A</sub> adenosine receptor deletion is protective in a mouse model of Tauopathy**  
C Laurent<sup>1,2,11</sup>, S Burnouf<sup>1,2,11</sup>, B Ferry<sup>3,12</sup>, VL Batalha<sup>4,12</sup>, JE Coelho<sup>4,12</sup>, Y Baqi<sup>5,6</sup>, E Malik<sup>5</sup>, E Mariciniak<sup>1,2</sup>, S Parrot<sup>3,7</sup>, A Van der Jeugd<sup>8</sup>, E Faivre<sup>1,2</sup>, V Flaten<sup>1,2</sup>, C Ledent<sup>9</sup>, R D'Hooge<sup>8</sup>, N Sergeant<sup>1,2,10</sup>, M Hamdane<sup>1,2,10</sup>, S Humez<sup>1,2</sup>, CE Müller<sup>c</sup>, LV Lopes<sup>4</sup>, L Buée<sup>1,2,10</sup> and D Blum<sup>1,2,10</sup>



**The role of adenosine A<sub>2A</sub> receptors in Alzheimer's disease and tauopathies**  
Agathe Launay<sup>a,b,1</sup>, Ouada Nebie<sup>a,b,1</sup>, Jhenkruthi Vijaya Shankara<sup>a,b,1</sup>, Thibaud Lebouvier<sup>a,b,c</sup>, Luc Buée<sup>a,b</sup>, Emilie Faivre<sup>a,b</sup>, David Blum<sup>a,b,4,\*</sup>

**JCI** The Journal of Clinical Investigation

Isabel Paiva, ... , Anne-Laurence Boutillier, David Blum  
2022;132(12):e149371. <https://doi.org/10.1172/JCI149371>



Phase III vs placebo  
248 patients  
Early to moderate AD patients  
(MMSE 16-24)

Results expected in 2024 !!



**EEG**  
(Prof A Delval)  
Sync & connectivity  
- in resting state  
- during attention task



**MRI**  
(Drs G Kuchcinski/JP Pruvo)  
MR spectroscopy  
rsfMRI  
ASL



**FDG-PET**  
(Dr A Jaillard)  
Regional & global  
brain metabolism

Thibaud Lebouvier  
David Blum  
<https://www.cafca-alzheimer.fr>



ORIGINAL ARTICLE

## Trial of Deferiprone in Parkinson's Disease

D. Devos, J. Labreuche, O. Rascol, J.-C. Corvol, A. Duhamel, P. Guyon Delannoy, W. Poewe, Y. Compta, N. Pavese, E. Růžička, P. Dušek, B. Post, B.R. Bloem, D. Berg, W. Maetzler, M. Otto, M.-O. Habert, S. Lehericy, J. Ferreira, R. Dodel, C. Tranchant, A. Eusebio, S. Thobois, A.-R. Marques, W.G. Meissner, F. Ory-Magne, U. Walter, R.M.A. de Bie, M. Gago, D. Vilas, J. Kulisevsky, C. Januario, M.V.S. Coelho, S. Behnke, P. Worth, K. Seppi, T. Ouk, C. Potey, C. Leclercq, R. Viard, G. Kuchcinski, R. Lopes, J.-P. Pruvo, P. Pigny, G. Garçon, O. Simonin, J. Carpentier, A.-S. Rolland, D. Nyholm, C. Scherfler, J.-F. Mangin, M. Chupin, R. Bordet, D.T. Dexter, C. Fradette, M. Spino, F. Tricta, S. Ayton, A.I. Bush, J.-C. Devedjian, J.A. Duce, I. Cabantchik, L. Defebvre, D. Deplanque, and C. Moreau, for the FAIRPARK-II Study Group\*

## Effect of In-Hospital Remote Ischemic Preconditioning on Brain Infarction Growth and Clinical Outcomes in Patients With Acute Ischemic Stroke

### The RESCUE BRAIN Randomized Clinical Trial

Fernando Pico, MD, PhD<sup>1,2,3</sup>; Bertrand Lapergue, MD, PhD<sup>2,4</sup>; Marc Ferrigno, MD<sup>5,6</sup>; Charlotte Rosso, MD, PhD<sup>7,8</sup>; Elena Meseguer, MD<sup>9</sup>; Marie-Laure Chadenat, MD<sup>1</sup>; Frederic Bourdain, MD<sup>4</sup>; Michael Obadia, MD<sup>10</sup>; Catherine Hirel, MD<sup>1,2</sup>; Duc Long Duong, MD<sup>1</sup>; Sandrine Deltour, MD<sup>7</sup>; Philippe Aegerter, MD, PhD<sup>11,12</sup>; Julien Labreuche, BSc<sup>13</sup>; Amina Cattenoy, MSc<sup>14</sup>; Didier Smadja, MD<sup>15</sup>; Hassan Hosseini, MD, PhD<sup>16</sup>; Benoit Guillon, MD<sup>17</sup>; Valérie Wolff, MD, PhD<sup>18</sup>; Yves Samson, MD<sup>7</sup>; Charlotte Cordonnier, MD, PhD<sup>5,6</sup>; Pierre Amarenco, MD<sup>3,9</sup>

[\\* Author Affiliations](#) | [Article Information](#)

*JAMA Neurol.* 2020;77(6):725-734. doi:10.1001/jamaneurol.2020.0326



Original Investigation | Psychiatry

## Mental Health Symptoms of University Students 15 Months After the Onset of the COVID-19 Pandemic in France

Marielle Wathelet, MD; Mathilde Horn, MD, PhD; Coralie Creupelandt, PhD; Thomas Fovet, MD, PhD; Thierry Baubet, MD, PhD; Enguerrand Habran, MSc; Niels Martignère, MD; Guillaume Vaiva, MD, PhD; Fabien D'Hondt, PhD



Original Investigation | Neurology

## Effect of Dimethyl Fumarate vs Interferon $\beta$ -1a in Patients With Pediatric-Onset Multiple Sclerosis

### The CONNECT Randomized Clinical Trial

Patrick Vermersch, MD, PhD; Matthew Scaramozza, MS; Seth Levin, MD; Raed Alroughani, MD; Kumaran Deiva, MD, PhD; Carlo Pozzilli, MD, PhD; Jennifer Lyons, MD; Oksana Mokliatchouk, PhD; Joe Pultz, PhD; Fatou N'Dure, MBA; Shifang Liu, PhD; Runda Badwan, PharmD; Filipe Branco, MSc; Valencia Hood-Humphrey, MS; Nathalie Franchimont, MD, PhD; Jerome Hanna, MBBCh, BAO; Amir-Hadi Maghzi, MD



Received: 25 June 2021 | Revised: 20 October 2021 | Accepted: 10 December 2021  
DOI: 10.1002/alz.12613

FEATURED ARTICLE

Alzheimer's & Dementia<sup>®</sup>  
THE JOURNAL OF THE ALZHEIMER'S ASSOCIATION

## Plasma amyloid beta predicts conversion to dementia in subjects with mild cognitive impairment: The BALTAZAR study

Olivier Hanon<sup>1</sup> | Jean-Sébastien Vidal<sup>1</sup>  | Sylvain Lehmann<sup>2</sup> | Stéphanie Bombois<sup>3</sup> | Bernadette Allinquant<sup>4</sup> | Christiane Baret-Rose<sup>4</sup> | Jean-Marc Tréluyer<sup>5</sup> | Hendy Abdoul<sup>5</sup> | Patrick Gelé<sup>6</sup> | Christine Delmaire<sup>3</sup> | Frédéric Blanc<sup>7</sup> | Jean-François Mangin<sup>8</sup> | Luc Buée<sup>3</sup> | Jacques Touchon<sup>9</sup> | Jacques Hugon<sup>10</sup> | Bruno Vellas<sup>11</sup> | Evelyne Galbrun<sup>12</sup> | Athanase Benetos<sup>13</sup> | Gilles Berrut<sup>14</sup> | Elena Paillaud<sup>15</sup> | David Wallon<sup>16</sup> | Giovanni Castelnovo<sup>17</sup> | Lisette Volpe-Gillot<sup>18</sup> | Marc Paccalin<sup>19</sup> | Philippe Robert<sup>20</sup> | Olivier Godefroy<sup>21</sup> | Vincent Camus<sup>22</sup> | Joël Belmin<sup>23</sup> | Pierre Vandel<sup>24</sup> | Jean-Luc Novella<sup>25</sup> | Emmanuelle Duron<sup>26</sup> | Anne-Sophie Rigaud<sup>1</sup> | Susanna Schraen-Maschke<sup>3</sup> | Audrey Gabelle<sup>9</sup> | the BALTAZAR study group



Luc Buée



David Devos



Renaud Jardri



David Devos



ARTICLE

<https://doi.org/10.1038/s41467-022-28087-0> OPEN

## Mapping brain structural differences and neuroreceptor correlates in Parkinson's disease visual hallucinations

Miriam Vignando<sup>1</sup>  <sup>1</sup>, Dominic ffytche<sup>2</sup>  <sup>2</sup>, Simon J. G. Lewis<sup>3</sup>  <sup>3</sup>, Phil Hyu Lee<sup>4</sup>  <sup>4</sup>, Seok Jong Chung<sup>4</sup>  <sup>4</sup>, Rimona S. Weil<sup>5,6</sup>  <sup>5,6</sup>, Michele T. Hu<sup>7,8</sup>  <sup>7,8</sup>, Clare E. Mackay<sup>7,9</sup>  <sup>7,9</sup>, Ludovica Griffanti<sup>7,9</sup>  <sup>7,9</sup>, Delphine Pins<sup>10</sup>  <sup>10</sup>, Kathy Dujardin<sup>10</sup>  <sup>10</sup>, Renaud Jardri<sup>10</sup>  <sup>10</sup>, John-Paul Taylor<sup>11</sup>  <sup>11</sup>, Michael Firbank<sup>11</sup>  <sup>11</sup>, Grainne McAlonan<sup>12</sup>  <sup>12</sup>, Henry K. F. Mak<sup>13</sup>  <sup>13</sup>, Shu Leong Ho<sup>13</sup>  <sup>13</sup> & Mitul A. Mehta<sup>1</sup>  <sup>1</sup>



Horizon2020  
European Union Funding  
for Research & Innovation



Konstantina Chachlaki  
miniNO scientific Coordinator



Vincent Prévot



Renaud Jardri



Luc Buée



Patricia Melnyk

Already ongoing



Lille  
Neuroscience  
& Cognition

CPER ARIANES – [arianes.fr](http://arianes.fr)

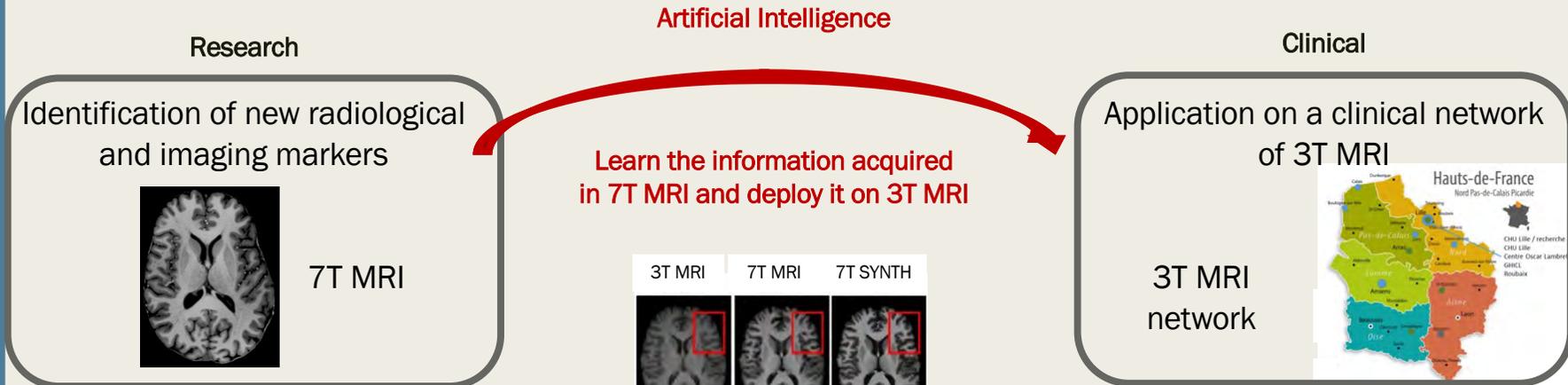


Jean-Pierre Pruvo



2024 : Acquisition d'une ITM 7T pour l'homme.

L'utilisation de l'IRM 7T dans des cohortes de recherche permettra d'identifier de nouveaux marqueurs radiologiques et d'imagerie dans les maladies neurologiques et psychiatriques.



**Contacts**

jean-pierre.pruvo@chu-lille.fr  
renaud.lopes@univ-lille.fr  
gregory.kuchcinski@univ-lille.fr



# Translational and transnosographic approaches in Neuroscience

## *Our aims and indicators of quality*

- Competing Funding: Natl fundings, PIA, ANR, European, ERC, Horizon Europe, international...
- Translational research: Number of common funded projects & publications
- **Technology transfer: patents & licensing, spin-offs and industrial contracts**
- International networks

# Patents

1. EP22306999.8 Lefebvre B, Rico T, Denechaud M, Buée L. *Methods for decreasing therapeutic acquired resistance to chemotherapy and/or radiotherapy*. December 2022.
2. EP22306550.9 Sergeant N, Melnyk P. *Diphenylpyrazoles compounds and their use*. 12 October 2022.
3. EP22305262.2 Blum D, Cauffiez C, Laumet G. *A method for the treatment of neuropathy*. March 2022
4. EP22305261.4 Blum D, Cauffiez C, Pottier N, Dewaeles E. *Method for the treatment of chemotherapeutic drug-induced nephrotoxicity*. March 2022
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6. EP22305293.7 Taymans JM, Mutez E, Chartier-Harlin MC, *Early & non-invasive method for assessing a subject's risk of having Parkinson's disease* 2022.
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11. WO/2022/136417 - *Pulsative GnRH administration for treating food intake related disorders*. Inventors: Prevot V, Pitteloud N, Giacobini P, Leysen V, Silva M, Florent V, Imbernon M. Publication date: 30.06.2022
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15. PCT/EP2019/068520 Carato P, Descamps F, El Bakali J, Evrard C, Gay M, Melnyk P, Renault N, Sergeant N, Vingtdoux V, Tautou M, *Polyamino biaryl compounds and their use*,
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17. EP 20306199.9 “*methods for detecting a target in a sample using mutated nanobodies*”
18. WO2019202153A1 *Autoanticorps hautement sialylés et leurs utilisations / Highly sialylated autoantibodies and their use*. INSERM Transfert / LFB Biotechnologies. Inventors : Mars LT, Monnet C. Biotherapy:

# Licensing

1. US20160356785 Methods for determining human sperm quality. Exclusive licence to SPQI.
2. WO2016146655: Novel 1,4-bis(3-aminopropyl)piperazine derivatives. Licenced to Alzprotect – *phase 2 ended in 2022*.
3. WO2015032842: Méthodes de détermination de la qualité du sperme humain. Exclusive licence to SPQI.
4. EP15305352.5 New therapeutic strategy of continuous dopaminergic stimulation in Parkinson's disease FR 1454254, for which the industrial transfer was obtained with the Start-up InBrain Pharma (spin-off of our team created in 2018) at the clinical stage with promising results
5. WO2014102339: Sulfate salts of N-(3-(4-(3-(diisobutylamino)propyl)piperazin-1-yl)propyl)-1H-benzo[d]imidazol-2-amine. *AlzProtect – phase 2 ended in 2022*.
6. W02006051489: Use of 1, 4-bis(3 aminopropyl)piperazine derivatives in therapy ». Licensed to AlzProtect
7. EP15305352.5 (9th of March 2015): Pharmaceutical solution comprising dopamine for use in treating Parkinson's disease with industrial transfer with a start-up creation: InBrain Pharma <https://www.inbrainpharma.com>
8. EP17306284.5 “Process for preparing a platelet lysate fraction, platelet lysate fraction and its use for treating disorders of the central nervous system” with an industrial transfer with start-up creation InVenis biotherapies. [www.invenis-biotherapies.com](http://www.invenis-biotherapies.com)

## SPQI and Pharma companies InBrain Pharma, AlzProtect



InVenis Biotherapies created in 2021 aims to develop and commercialize innovative treatments based on blood products with a priority focus on neurological diseases, starting with Amyotrophic lateral sclerosis. This is a totally innovative approach to deliver the repair system naturally contained in the platelets of healthy subjects directly into the brain.



InBrain Pharma was created in July 2018 as a spin off of the U1171 research team to develop the DIVE project (Continuous circadian ICV administration of anaerobic dopamine) & the GIFT project (New strategy of neuroprotection based upon intracerebral administration of platelets lysates from healthy donors) projects.

InBrain Pharma has received Prizes from the University Foundation, I-LAB & I-SITE. InBrain Pharma has raised € 1.2 million from professional funds in December 2018. The DIVE project is at the clinical stage with a first phase II trial in 2019. U1171 research team and InBrain Pharma have applied for RHU in December 2018.



Former spin-off (now Pharma biotech, AZP2006 finished phase 2a) founded by researchers (A Delacourte and P Melnyk) from teams Buée and Melnyk, based on the patent W02006051489.

SPQI, with capital share of 275k€, was created in June 2016 as a spin off of the U1172 research team to develop and commercialize biomarker tools in neurodegenerative disorders and male fertility. Positive balance.

SPQI has received Prizes from I-LAB, Force Awards, START-AIRR, Innovative Program research, Funding Invest for the Future (PIA).



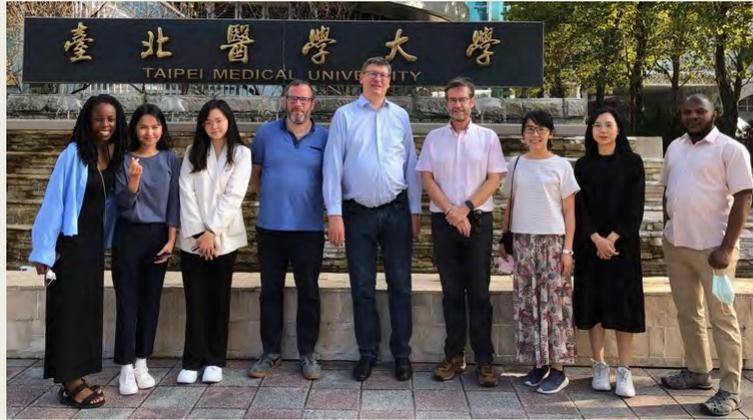
# Translational and transnosographic approaches in Neuroscience

## *Our aims and indicators of quality*

- Competing Funding: Natl fundings, PIA, ANR, European, ERC, IMI, Horizon European, international...
- Translational research: Number of common funded projects & publications
- Technology transfer: patents & licensing, spin-offs and industrial contracts
- **International networks**



2022



2019



2022



<https://oge.tmu.edu.tw/tmu-and-university-of-lille-france-establish-french-startup-invenis-biotherapies/>





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# Integrated training networks

- <https://euronschool.eu>



- <https://marie-sklodowska-curie-actions.ec.europa.eu/news/doctoral-networks-2022-call-results> Horizon MSCA Doctoral network 2022 TAME - TAU imMunE: strategies for innovative diagnosis and therapies in dementia



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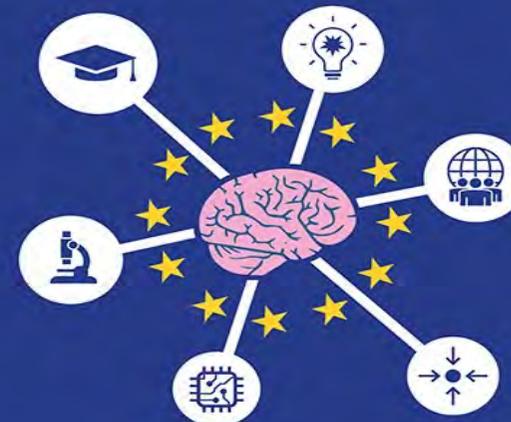
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2020



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**Université de Lille**



Amouyel - Lambert  
Landrieu

Buée      Devos (Bordet)      Prévot

Antoine - Nandrino



**Lille Neuroscience & Cognition**

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2023



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SCALab  
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Landrieu - Lambert



Buée  
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Devos

Prévot



Lille  
Neuroscience  
& Cognition

Melnyk

Jardri - Pins





2023 → 2026

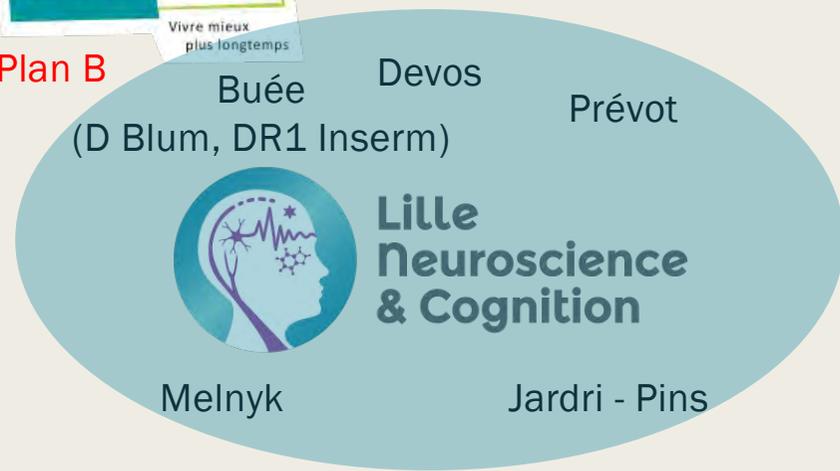
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Landrieu - Lambert



Plan B



En discussion



