



# CRC Core facilities

30/11/2022





**CEF**  
Functional Exploration Center

*Manager*  
Valérie CHAUFFETON

*Deputy Manager*  
Sonia PRINCE



**CGB**  
Genotyping  
& Biochemical Facility

*Manager*  
Hermine KAKANAKOU



**CHIC**  
Center of Histology, Imaging  
& Cytometry

*Manager*  
Christophe KLEIN



**L3**  
Safety Level 2/3 Laboratories

*Managers L2*  
Audrey DIDELOT,  
Delphine LE CORRE

*Manager L3*  
Maxime LECERF

*CRC core facilities Scientific Director: Maria Chiara MAIURI*

*CRC core facilities Quality Manager: H el ene FOHRER-TING*

*CRC core facilities Development Project Manager: C ecile GODARD*

*CRC core facilities Administrative Assistant: V eronique DALET*





Localisation des équipes et des plateformes

**PLATEFORMES :**

CEF : Esc. G - rdc et 1<sup>er</sup>  
CGB : Esc. F - 2<sup>e</sup>  
CHIC : Surélévation - RdC  
L2 : Esc. F - 2<sup>e</sup>  
L3 : Esc. E - 2<sup>e</sup>

**Escalier A :**

C. Desdouets 1<sup>er</sup>  
G. Kroemer 1<sup>er</sup>  
Zucman-Rossi 1<sup>er</sup>

**Escalier A2 :**

P. Laurent-Puig, RdC

**Escalier B :**

F. Béhar-Cohen 2<sup>e</sup> droite  
M. Arthur 3<sup>e</sup> gauche

**Escalier D :**

A. Burgun, 1<sup>er</sup>

**Escalier E :**

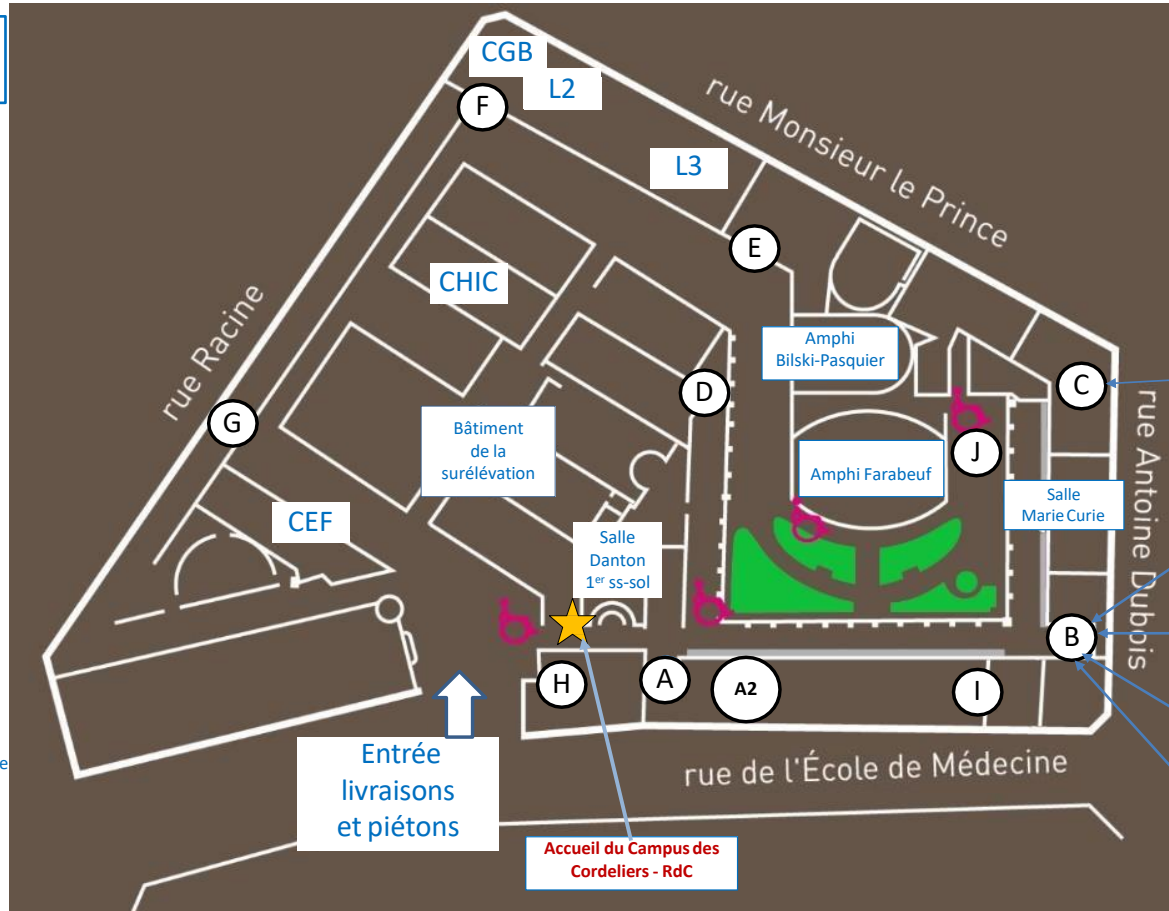
S. Colnot 1<sup>er</sup> droite  
N. Venticlef 1<sup>er</sup> droite  
S. Susin 2<sup>e</sup> droite  
A. Berdal 2<sup>e</sup> gauche  
I. Cremer 3<sup>e</sup> droite  
J. Galon 3<sup>e</sup> droite  
F. Fougelle 3<sup>e</sup> gauche  
S. Lacroix-Desmazes 4<sup>e</sup> droite

**Escalier F :**

MF Mamzer, 2<sup>e</sup> mezzanine

**Escalier J bis :**

G. Crambert



Salle des Thèses  
Esc. C - RdC

Salle Club  
Esc. B - RdC

Amphi.  
Gustave Roussy  
Esc. B - 2<sup>e</sup> étage

Secrétariat général et  
Communication du  
CRC  
Esc. B - 2<sup>e</sup> étage  
mezzanine

Salle Pérec  
Esc. B - 2<sup>e</sup> étage  
mezzanine

Entrée  
livraisons  
et piétons

Accueil du Campus des  
Cordeliers - RdC



Since 2013, the CRC core facilities are certified ISO9001

In 2017, the CRC core facilities have integrated the evolution of the ISO standards and are certified **ISO9001:2015**.

Since 2020, the CRC core facilities are also certified **NFX-50-900**.





# MISSION

To provide highly specialized and high quality services to the research community

## Policy

### *Access to laboratories, instruments and services:*

- Most of the infrastructures and instruments can be used without assistance by users after a specific training
- Reservations are done by Web-based system for trained users
- For light users assistance is provided
- Services on demand are available

### *Service Costs:*

- Fees are based on equipment operating/maintenance cost
- Quotation are provided to private company

# Center of Histology, Imaging & Cytometry





# Center of Histology, Imaging & Cytometry



# MISSIONS

To provide training and consulting on the use of Histology, Spatial Omics, Cell Imaging and Flow cytometry equipments and techniques

## Tasks

- Develop novel technology projects
- Full services in histology, microscopy and flow cytometry
- Instruments maintenance and quality control
- Comprehensive user training
- Support in designing and performing experiments
- Data analysis



# STAFF

*Technical and Operational Manager*  
Christophe KLEIN



*Cellular Imaging*

Christophe KLEIN  
Qinghe ZENG (PhD, Udp\*)



*Flow cytometry*

Hélène FOHRER-TING



*Histology - Spatial Omics*

Floriane ARBARETAZ

New arrival in january 2023



## Cytometry



ARIA III



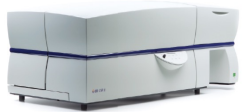
Influx



Fortessa



AutoMacs



LSR II



FlexMap  
Luminex

**Spectral  
cytometer 2023**



## Cytometry



ARIA III



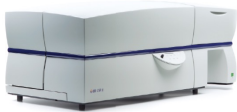
Influx



Fortessa



AutoMacs

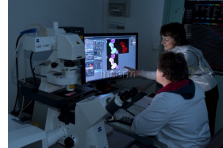


LSR II



FlexMap  
Luminex

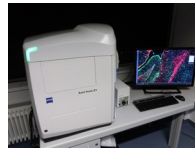
## Imagery



Spectral  
Confocal  
Microscope



Mantra ®



Axioscan ®



PhenoImager HT  
(Polaris) ®

COMET  
Lunaphore



## Histology/Spatial Omic



2 Cryostats



Dako autostainer



Leica Bond RX®



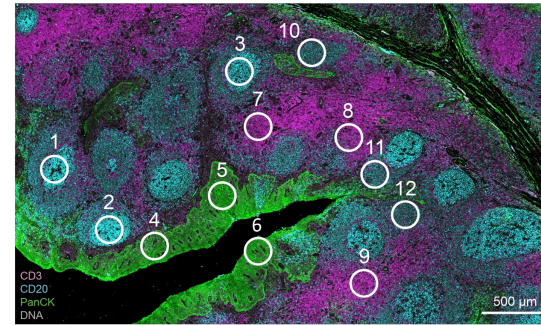
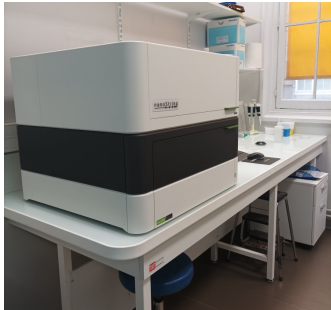
GeoMX DSP  
N-Counter ®



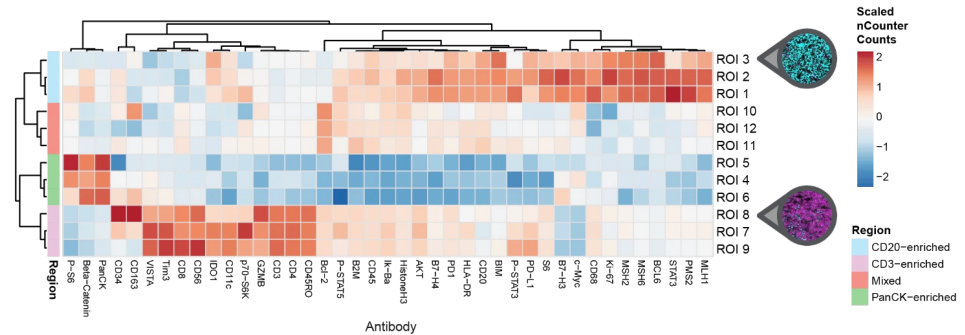
CytAssist ®

# GeoMx Digital Spatial Profiler (DSP) (nanoString)

- Multiplex on FFPE or FF slides
- Panels of 96 proteins or RNA
- Panel Cancer Transcriptome Atlas (1800 RNA)
- Panel Whole Transcriptome Atlas (18000 RNA)
- Spatial resolution of cellular level



Cell-Type Specific



## COMET (Lunaphore)

Multiplex Immunofluorescence (40 markers in the same slide).



# Functional Explorations Center





## MISSIONS

- To Provide researchers with a comprehensive suite of instruments, tools and techniques for small animal experimentation
- To house and breed normal and transgenic rodents  
(UE Directive n.63/2010 and French decree n° 2013-118, 01/02/2013)

Ethical committee Charles Darwin (C2EA-05)



Animal Welfare Unit ("*Cellule du bien être animal*")



ANIMA 75

Coordination des animaleries  
Université de Paris



Infrastructures en  
Biologie Santé et Agronomie



Réseau de phénotypage et  
d'imagerie in vivo du petit  
animal (RPPA)

# Staff



*Technical and Operational Manager*

Valérie CHAUFFETON

*Deputy Manager*

Sonia PRINCE



*Experimental zones coordinator: Lionel DEROCHE*



- Experimental zone: Ariel GAY



- A2 Zone: Carole Acarole LASNE



- Rat zone: Thomas GUESNAY



*Mouse breeding areas coordinator: Lauren COUGNON*



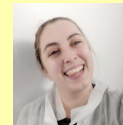
(Sanitary status responsible)

- **EOPS:** Alexis GUERIN

(Cryo-preservation and cryo-recovery specialist)



- **Breeding:** Léa HUISDACK\*,  
Léo BOUVET\* (apprenti 50%)



*Metabolomic & Imaging plateau: Georges ZADIGUE*



*Laundry / Waste Disposal:*

Aurélie BARREAU

Blaise DIAGNE



New arrival in January 2023 \*

\* Not permanent position

## "Pavillon 10": 960m<sup>2</sup>



250 users:  
95% CRC; 5% external users  
> 300 ethical projects approved

13200 mice  
1150 rats



## Mice zones:

- EOPS breeding  
(specific pathogenic organism free)
- Breeding
- Experimental
- Immunity  
(aseptic experimentations,  
experimentation with specific animal models)
- P2/A2  
(experimentation with:  
viral or bacterial infections;  
human cells injections)



## Rat zones:

- Breeding
- Experimental



## Transgenic strains:

Mice: 108 (+ 68 cryo-preserved)  
Rats: 8



## Technical *plateaux*:

- 5 surgery laboratories  
(2 devoted to immunity zone,  
1 for A2/P2 zone)
- 1 transgenesis laboratory  
(in EOPS zone)
- 1 laboratory for ophthalmology  
and orofacial pathology



Technical plateaux:

"Imagerie du vivant"

(Dr. Lori Bridal)

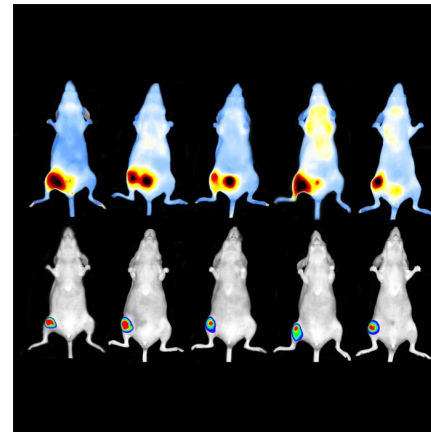
Contact Lionel Deroche



Vevo 3100 (Fujifilm)



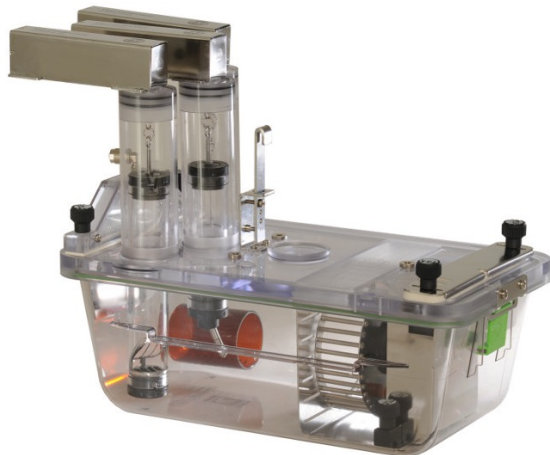
IVIS ®



Technical *plateaux*:

The PMM "Performance & Metabolism in mice"  
(Dr. Philippe Noirez - contact Georges Zadigue)

- 22 calorimetric cages (TSE®)
- 50 metabolomic cages
- 7 running calorimetric treadmills
- 2 IRM (Bruker)



# Genotyping and Biochemical Facility





## MISSIONS (I)

- To provide full services for genotyping and metabolism analysis

Genotyping service:  
40% CRC, 60% external academic users

> 32.000 genotyping samples

## MISSIONS (II)

- To provide equipments and technical training for real time PCR and for functional metabolic analysis (in live cells and tissues)



Digital-qPCR QX200 ®



Jess ®



Taqman T7900®



3500 Genetic Analyzer



LabChip GX Touch/GXII Touch



Prism 6 (Stilla)

## Staff

*Technical and Operational Manager*

Hermine KAKANAKOU (AI, SU)



*Genotyping specialists:*

Sylvie LE MARCHAND



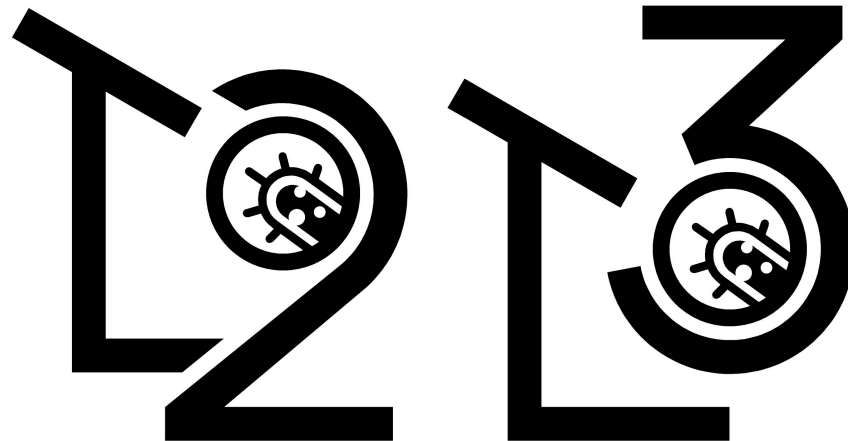
Cédric AYASSAMY



Alice COUGNON (50%)

- Responsable qPCR QX200 (Biorad) + Prism6 (Stilla) : *Gabrielle Couchy (3%)*
- Responsable Jess (Bio-Techne): *Samantha Schaeffer (5%)*
- Responsable du Applied Biosystems 7900 HT Taqman et du séquenceur 3500XL : *Clément Meiller (3%)*

# Safety Level 2 & 3 Laboratories





# MISSIONS

To provide an adapted environment for secure handling of level 2 & 3 pathogenic agents

(in accordance with the 16/07/2007 French decree and 2009/41/EC EU directive)

## Tasks

- Instrument maintenance
- Strict management for optimal security
- Follow up of regulatory aspects and quality/safety control (strong interaction with the CRC Health & Safety Manager)
- Support in GMOs procedures/regulation
- Comprehensive users training
- Support in designing and performing experiments

# Staff

*Technical and Operational Manager*

*L3: Maxime LECERF*



L2: Audrey DIDELOT, Delphine LE CORRE



**L3:** associated to the CRC Core facilities in 2017; certified in 2018;  
Users: 67% CRC, 33% external academic

**L2:** opened in June 2021 (certification on going);  
Users: 100% CRC



xCELLigence®





Thank you for your attention!