



In vivo imaging to
speed up time to market of medical innovations

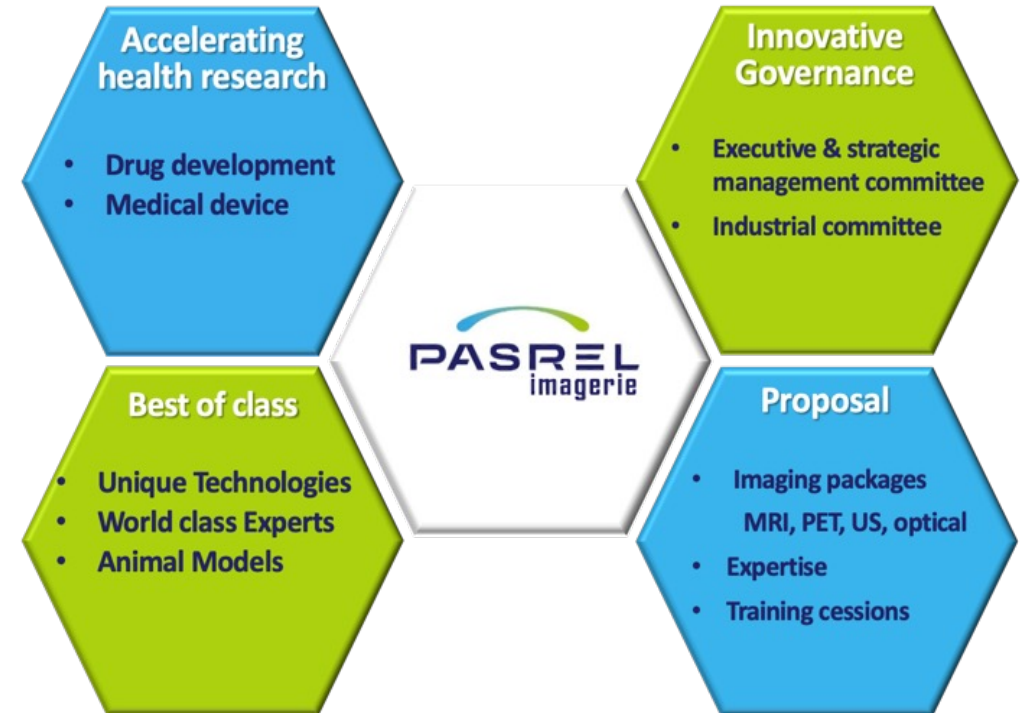


CEA

- Technological Research for Energy and Life Science
- National Research Organization
- ~20 000 staff, ~2 000 PhD students

PASREL-Imagerie

- A consortium of CEA medical research imaging centers
- Strong expertise *in vivo* imaging technology
- Industrial and privileged and easy access to platforms and expertise



PASREL-Imagerie is made up of state-of-the-art equipment of CEA in Paris-Saclay, offering unique preclinical and clinical imaging capacity as well as expertise for image acquisition and data processing in **MRI, PET, ultrasound, optical and hybrid imaging**.



IDMIT

Infectious diseases and innovative therapies

MIRCEN

Neurodegenerative diseases and ophthalmic pathologies

NEUROSPIN

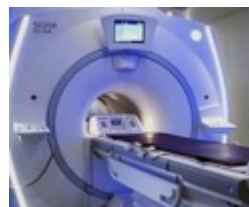
Brain neuroimaging

SHFJ - Frédéric Joliot Hospital Service

Preclinical and clinical multi-modal imaging

**Radiotracers**

Production: ^{11}C , ^{18}F , ^{15}O
Access to ^{89}Zr and ^{64}Cu
Radio labelling

**PET****Multimodal Imaging**

PET-CT / PET-MRI / PET-TDM /
PET-US / SPECT-CT / MRI-US

**Radiopharmaceuticals****PET****Multimodal Imaging**

PET-TDM / PET-MRI /
SPECT-CT

Preclinical research**Clinical Phases****Two-photon microscopy**

Multiple labeling

MRI

1,5T / 3T / 7T / 17T

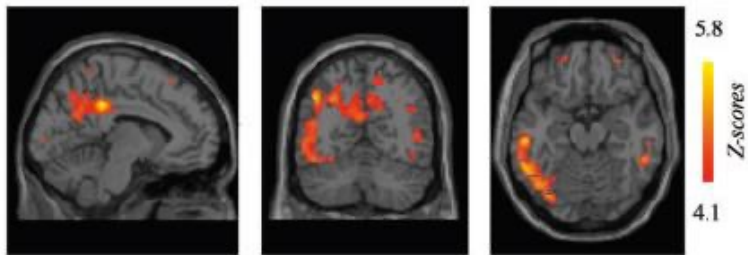
Ultrasound

Imaging & Therapeutical

MRI

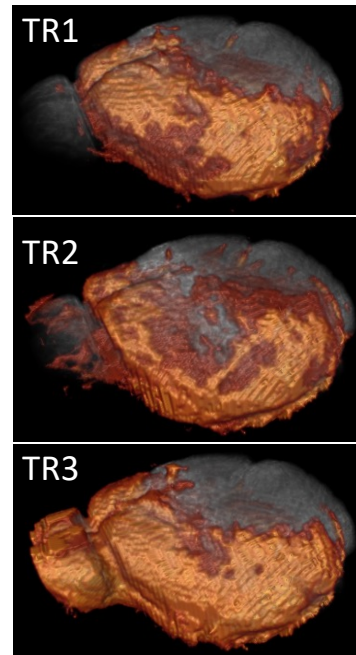
1,5T / 3T / 7T / 11,7T

Ultrasound



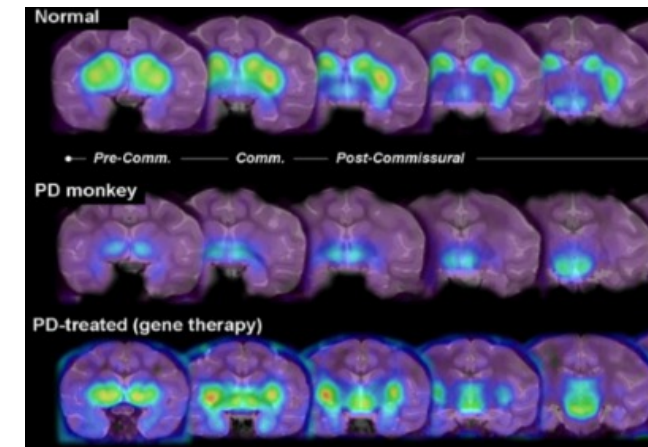
Neurology

Patient's stratification based on microglial activation in AD [Hamelin *et al.*, Brain 2016]



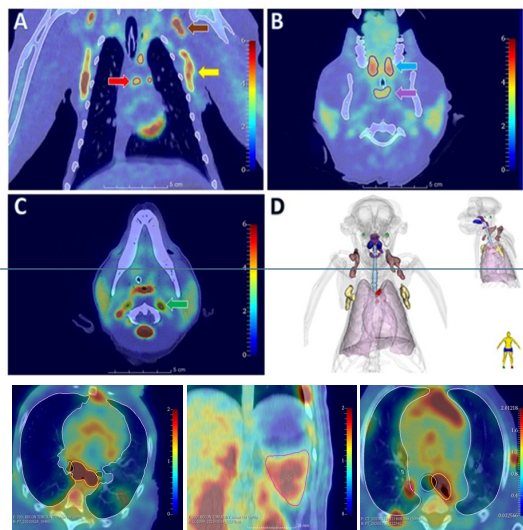
Neurology

Drug effects visualization by Mn^{2+} enhanced functional neuroimaging in mouse [Droguerre *et al.*, 2020]



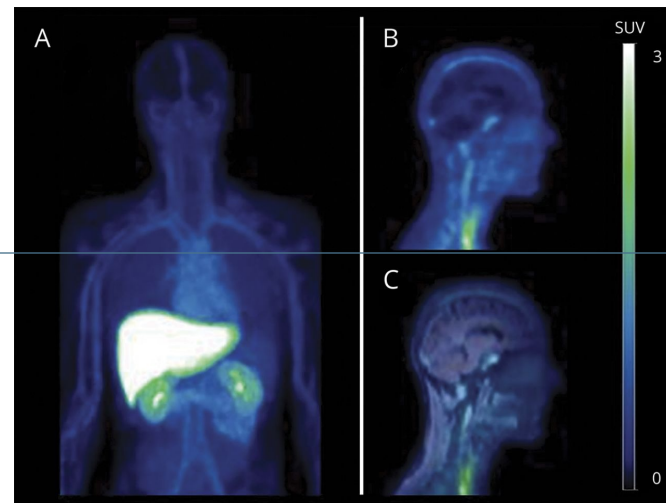
Neurology

Evaluation of gene therapy efficiency on a NHP model of Parkinson's disease - $[^{18}F]FDOPA$ [Jarraya *et al.*, 2009]



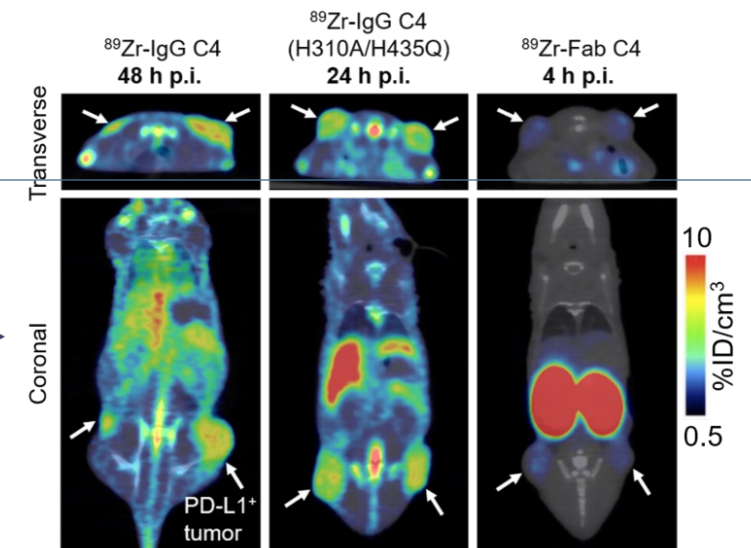
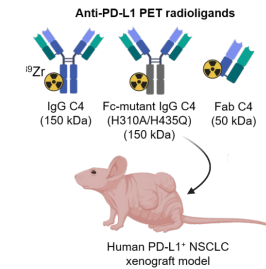
Infectious diseases

Drug effect evaluation in Sars-Cov-2 NHP model - ^{18}F FDG. [Lemaître *et al.*, 2021]



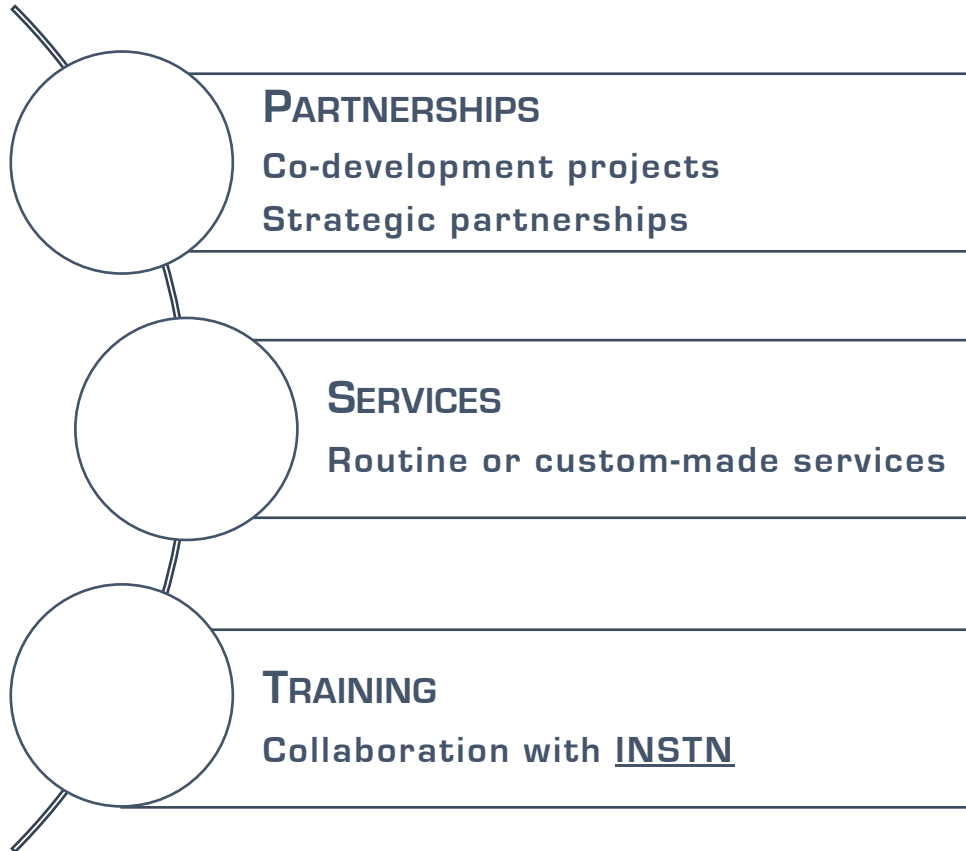
Pharmacology imaging

Biodistribution study showing negligible penetration of glyburide in human brains [Marie *et al.*, 2019]



Oncology

Pharmaco-kinetic and biodistribution of Ab based ligands [Bouleau *et al.*, 2021]



Quality management (ISO 9001)

- A dedicated manager
- Instrument maintenance and calibration
- Data security, confidentiality and storage
- Project traceability
- Formalized protocols
- Compliance with ethical and regulatory aspects
- Staff competence and empowerment

