ASSISTANCE PUBLIQUE HÔPITAUX DE PARIS

Necker ENFANTS MALADES HÔPITAL UNIVERSITAIRE

Université de Paris

MAIRIE DE PARIS

Inserm La science pour la santé From science to health

FONDATION Hôpitaux de Paris Hôpitaux de France Reconnue d'utilité publique

AFMTÉLÉTHON INNOVER POUR GUERIR

INSTITUT CARNOT Imagine

INVESTIR L'AVENIR

Imagine's unique ecosystem for R&I in genetic diseases

Necker-Enfants Malades university hospital campus, Paris (France), since 2014

imagine
INSTITUT DES MALADIES GÉNÉTIQUES

Proximity, transversalities, innovation

Conference center

Researchers & Physicians
24 research labs
4 associated labs

Students
PhD/MD-PhD
Master/MD-M2

Engineers
17 core facilities

Biobank

Patients
30,000 consultations/year in situ
31 reference centers for rare diseases
7 clinical departments 2 clinical investigation centers

Support services
Personalized management
Fundraising
Communication

Health innovation experts
Technology transfer
Business Development
Entrepreunership
Grant office
Clinical research
Regulatory&Legal

Companies & Bioentrepreneurs
7 startups co-founded by *Imagine*'s PIs

codoc
THERANOVIR
medetia PHARMACEUTICALS
smart immune
step pharma
sonio
inatherys

Imagine's integrated model

1. **Clinics, consultation**
2. **Genetic diagnosis**
3. **Pre-clinical research**
4. **Clinical research**
5. **Treatment, diagnosis**

Closely interfaced with:
Universities
Research organisms
Hospitals
Companies
Entrepreuners
Investors and donors
Facilitators

INVESTIR L'AVENIR
INSTITUT CARNOT Imagine

iCARPs: integrated care and research programs

6 iCARPs
24 research laboratories
4 associated laboratories
31 affiliated reference centers for rare diseases
7 affiliated clinical services
2 clinical investigation centers
17 core facilities

Necker ENFANTS MALADES HÔPITAL UNIVERSITAIRE

NEPHROLOGY

- **B. Knebelemann**, **O. Boyer** – Idiopathic nephrotic syndrome
- **R. Salomon** – Pediatric nephrology
- **A. Sarvais** – Renal trombotic microangiopathy
- **C. Legendre** – Adult kidney transplantation
- **L. Heidet** – Hereditary kidney disease of the child and the adult
- **S. Saunier**, **C. Antignac** – Hereditary kidney diseases

COMPUTATIONAL DECISION-SUPPORT SYSTEMS

- **JP. Bonnefont** – Federation of medical genetics
- **A. Burgun** – Medical informatics department
- **A. Roussel** – Clinical bioinformatics

DEVELOPMENT AND CARDIOLOGY

- **F. Denoyelle** – Rare ENT malformations
- **D. Bonnet** – Complex congenital heart defects
- **J. Amiel** – Developmental abnormalities and developmental syndromes
- **S. Marlin** – Genetic deafness
- **M. Zerah** – Craniosynostosis Vertebral and spinal malformations
- **V. Abadie** – Pierre Robin sequence
- **A. Picard** – Cranial and facial malformations
- **C. Bodemer** – Genetic diseases with cutaneous expression
- **M. Polak** – Molecular basis of several congenital or neonatal endocrine disorders and establishment of new therapeutic strategies
- **A. Hagège** (Georges-Pompidou) – Hereditary or rare cardiomyopathies and cardiac arrhythmias
- **M. Polak** – Rare gynecological pathologies
- **S. Sarnaki**, **I. Bloch** – IMAG2: Computational anatomy for image-guided minimally invasive surgery in pediatric tumoral and developmental diseases
- **K. Wahbu** (Cochin) – Cardiomyopathies of neuromuscular diseases
- **C. Cretolle** – Rare anorectal and pelvic anomalies
- **V. Cormier-Daire** – Constitutional bone diseases
- **Y. Ville** – Impact@Imagine: Innovative multidisciplinary prenatal approach of congential diseases and their treatments
- **J. Amiel**, **S. Lyonnet** – Embryology and genetics of malformations
- **A. Hovnanian** – Genetic skin diseases: from disease mechanism to therapy
- **L. Legeai-Mallet**, **V. Cormier-Daire** – Molecular and physio-pathological bases of osteochondrodysplasia
- **S. Meilhac** – Heart morphogenesis

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IMMUNOLOGY – INFECTIOLOGY - GASTROENTEROLOGY

- **L. Abel** – Human genetics of infectious diseases: complex predisposition
- **N. Cerf-Bensussan** – Intestinal immunity
- **S. Latour** – Lymphocyte activation and susceptibility to EBV
- **A. Fisher**, **N. Malhaoui** – Hereditary Immunodeficiencies
- **JL. Casanova** – Human genetics of infectious diseases: monogenic predisposition
- **F. Rieux-Laucat** – Immunogenetics of pediatric autoimmune diseases
- **JP. de Villartay**, **P. Revy** – Genome dynamics in the immune system
- **P. Quartier Dit Mairie** – Juvenile arthritis
- **S. Blanche** – Immuno-hematology, pediatric rheumatology department
- **Y. Crow** – Neurogenetics and neuroinflammation
- **M. Ménager** – Inflammatory responses and transcriptomic networks in diseases
- **G. Ménasché**, **F. Sepulveda** – Molecular basis of altered immune homeostasis
- **O. Goulet** – Rare digestive tract diseases
- **O. Lortholary** – Infectious and tropical diseases department

NEURO-DEVELOPMENT

- **V. Cantagrel** – Developmental brain disorders
- **A. Pierani** – Genetics and development of the cerebral cortex
- **N. Boddaert** – Image@Imagine: Multimodal brain imaging research
- **N. Bahi-Buisson** – DI-Rett center
- **M. Rio** – Intellectual disabilities of rare causes
- **E. Kabashi** – Translational research for neurological disorders
- **A. Rötig** – Genetics of mitochondrial diseases
- **R. Nabbout** – Rare epilepsis
- **P. de Lonlay** – Hereditary metabolic diseases
- **D. Brémond-Gignac** – Rare ophthalmological diseases
- **JM. Rozet** – Genetics in ophthalmology
- **JP. Bonnefont** – Mitochondrial diseases
- **I. Desguerre** – Neuromuscular diseases

HEMATOLOGY

- **I. André** – Human lymphohematopoiesis
- **A. Harroche** – Pediatric Hemophilia
- **M. Cavazzana** – Innovative therapy department
- **O. Hermine** – Molecular mechanisms of hematologic disorders and therapeutic implications
- **O. Hermine** – Mastocytosis
- **O. Hermine** – Adult hematology department
- **A. Miccio** – Chromatin and gene regulation during development
- **M. De Montalembert** – Major sickle cell syndromes

CORE FACILITIES

- **N. Garcelon** – Data Science, Clinical databases and data warehouse
- **N. Lefort** – iPS (induced pluripontent cells) Organoïds
- **M. Simon Sola** – rAAV vectors
- **C. Bôle-Feysot** – Genomics *Scientific referent: Annarita Miccio*
- **C. Cordier** – Cytometry *Scientific referent: Emmanuelle Six*
- **S. Fabrega** – VVTG – Viral vectors and gene transfer *Scientific referent: Sébastien Stork*
- **M. Ménager** – Transcriptomics Single cell RNA-seq
- **P. David** – Transgenesis *Scientific referent: Pierre Cherel*
- **N. Boddaert** – Imaging IRM3T
- **P. Nitschké** – Bioinformatics *Scientific referent: Jean-Philippe Jais*
- **C. Guerrera** – PPN - Proteomic plateform Necker
- **S. Ciura** – Electrophysiology *Scientific referent: Edor Kabashi*
- **E. Panafieu**, **P. Cherel** – Animal experimentation *Scientific referent: Vincent Goffin*
- **S. Berissi** – PPN - Proteomic plateform Necker
- **M. Garfa-Traoré** – Cell imaging *Scientific referent: Emmanuelle Six*
- **Biological resourses center** – Cell imaging *Scientific referent: Corinne Antignac*
- **I. Nemazanyy** – Metabolomics *Scientific referent: Mario Pende*

CLINICAL INVESTIGATION CENTERS

- **M. Cavazzana** – Biotherapies (CIC-BT)
- **JM. Tréluyer** – Multi-thematic unit Mother-Child (CIC)

INVESTIR L'AVENIR

INSTITUT CARNOT Imagine

MSCA postdoctoral fellowship at *Imagine*

Finalized (April 2021) :
Fellow: **Anaïs Levescot**
Project: Single Cell approaches for the study of oncogenic processes during coeliac disease. (**SingCelCD**)
Laboratory: Intestinal immunity
PI: **Nadine Cerf-Bensussan**

Ongoing:
Fellow: **Allice Lepelley**
Project: Mitochondrial integrity and autoinflammation (**MitoFeron**)

Laboratory: Neurogenetics and neuroinflammation
PI: **Yanick Crow**

New opportunities:
Laboratory:
Lymphocyte activation and susceptibility to EBV
Key words:
Abnormal immune response to EBV, primary immune deficiencies (PID), molecular bases of defects in replication/ proliferation of activated T cells, transgenic mice models
PI: **Sylvain Latour**
Publications: https://orcid.org/0000-0001-8238-4391

Laboratory:
Human lymphohematopoiesis
Key words:
Hematopoietic disorders, innovative therapies, *ex vivo* gene modifications, HSPC-based strategy, human T progenitors, thymopoiesis
PI: **Isabelle André-Schmutz**
Publications: https://orcid.org/0000-0002-3905-9910

We are also open to new projects in one of our 6 iCARPs thematic, do not hesitate to contact us !

Contact: **Zuzanna ANDRZEJEWSKA, PhD** *Grant Officer – European projects*
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