### MEDICAL DEVICES IN ONCOLOGY





# ACCELERATE TECHNOLOGICAL INNOVATION AND MARKET ACCESS THROUGH PARTNERSHIPS





nstitut Curie Technology Transfer and Industrial Partnership Office is the quickest gateway to the state-of-the-art innovations happening in the Institut Curie.

Our key mission is to connect innovators with the business & investor communities and to offer a single access point for creating R&D partnerships with Curie experts and technology licensing.

Our ambition is to ensure that your project receive the greatest chance of actually reaching patients.

Let's work together and take advantage of our recognized expertise labelled Institut Carnot Curie Cancer!

#### AMAURY MARTIN, PHD

DIRECTOR, TECHNOLOGY TRANSFER & INDUSTRIAL
PARTNERSHIPS OFFICE, INSTITUT CURIE
DIRECTOR. INSTITUT CARNOT CURIE CANCER





### KEY FIGURES TECH TRANSFER OFFICE 2017 DATA

13M€ INCOME FROM INDUSTRIAL / SME PARTNERSHIPS

47 NEW R&D AGREEMENTS

> 5.3 M€ INCOME IN R&D CONTRACT

**527** PATENT PORTFOLIO

**60%** OF PATENT LICENSED

18 SPIN-OFF COMPANIES



# AN **OFFER** SIZED TO YOUR **NEEDS**

- An offer tailored to your company size.
- A guaranted confidentiality for your data and project.
- Different level of partnership depending on your needs:
  - Consulting and expertise
  - Proof of concept or feasibility
  - R&D collaboration
  - Pre-market validation
  - Joint R&D Lab
- An access to high level of national and international experts network.





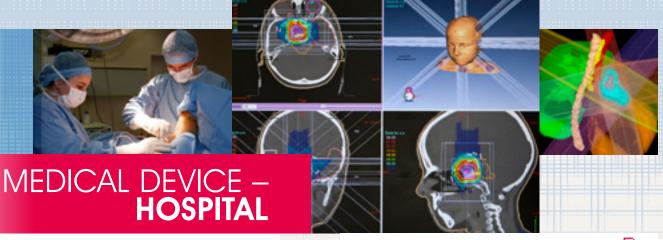


## FOCUS ON KEY FIGURES IN MEDICAL DEVICES 2017 DATA

- 12 NEW R&D AGREEMENTS SIGNED
- 72 PATENTS
  - **6** SPIN-OFF COMPANIES



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### **RADIOTHERAPY** & RADIATION BIOLOGY



The birthplace of radiation therapy, Institut Curie is continuously innovating in this field. Proton therapy center in Orsay is the world's

### n°4 and n°1 in France. Main areas of interest

- Radiotherapy flash
- Automatic tumor contouring
- Radioresitance
- Toxicity reduction
- New irradiation technique and combination

### **ANESTHETIC** & REANIMATION



Institut Curie is a reference in IV device application, specialized in pediatric and adult port implantation and chronic pain management.

### Main areas of interest

- Oncologic anesthetic and new treatments
- In vivo material tolerance
- Pain
- Nutrition

### MEDICAL IMAGING



Institut Curie aims to contribute to the continual advance of diagnostic and therapeutic strategies in terms of effectiveness, safety and cost.

### Main areas of interest

- Interventional radiology
- High-intensity focused ultrasound
- Radiofrequency
- Imaging-guided tumor biopsies
- Percutaneous tumor ablation
- New technics in breast imaging

### SURGICAL ONCOLOGY



At Institut Curie, doctors carry out conservative or reconstructive surgery whenever possible. The improvement of surgical techniques aids in early recovery, and helps reduce hospital stays and the number of procedures in outpatient care.

### Main areas of interest

- Robotic & minimal-invasive surgery
- Augmented reality surgery
- Image fusion
- Medico-economic studies
- New treatments













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# MEDICAL DEVICE – RESEARCH CENTER & PLATFORMS

### **IMAGING** & MICROSCOPY



Institut Curie seeks to uncover the role of physical laws in the architecture and functions of cellular systems. To this end, cross-disciplinary approaches involving physics, chemistry and biology are favoured.

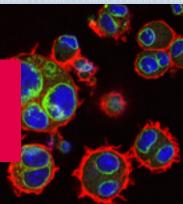
### Main areas of interest

- Functional nanoparticles
- Single cell imaging & analysis
- From single molecules to cellular functions
- Optical and electron microscopy
- Optogenetics or mechanical micromanipulation
- Biomimetic system

Institut Curie also gathers highly sophisticated equipments and up to date technologies in advanced microscopy.

### Main areas of interest

- Advanced light microscopy
- Electron microscopy
- NanoSIMS
- Correlative light-electron microscopy
- Super-resolution imaging
- Fluorescence microscopie
- Data analysis





### **MICROFLUIDICS** & "LAB-ON-CHIP"



Institut Curie develops several innovative technologies based on its expertise in complex fluids and soft matter: magnetic and convective self-assembly, flow control, non-conventional microfabrication strategies and surface treatments, high content droplet microfluidics.

### Main areas of interest

- Capture and molecular typing of tumour cells from patients
- Portable microfluidic devices for fast and low-cost analysis of pathogens
- Circulating biomarkers detection
- 3D cells culture on chip
- Fundamental studies of DNA-protein interactions

### **PLATFORMS**



- PICT-IBiSA: Biomaging Cell and Tissue Core Facility of the Institut Curie
- RadXp : Experimental Radiotherapy

























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# PARTNERING WITH INSTITUT CURIE: FROM THERAPEUTIC TARGET

TO CLINICAL VALIDATION

Institut Curie conducts projects from basic research to clinical studies in order to:

- Understand mechanisms of pathological development
- Facilitate the transition from basic research to clinical application
- Develop innovative therapeutic and diagnostic techniques in cancer

### RESEARCH CENTER



### 4 domains of excellence:

- Biology, Cancer, Genetics and Epigenetics
- Biology & Chemistry of Radiations, Cell Signaling and Cancer
- Integrative Tumour Biology, Immunology and Environment
- Multiscale Physics-Biology-Chemistry and cancer





This department provides clinicians and researchers with human and technological resources enabling the development of applicationoriented projects.

### HOSPITAL GROUP



Three sites in Paris region area welcome patients bearing cancers from the most frequent to the rarest, to offer them state-of-the-art treatments and improve their quality of life. Institut Curie is an international expert for eye cancers, pediatric tumors, breast cancers and sarcomas.

### **PLATFORMS**

Institut Curie provides a wide range of advanced technological platforms. Their services cover biological complexity from small molecules up to whole organisms and contribute to the progress of basic and translational research projects up to clinical studies.

A leading player in the fight against cancer, Institut Curie brings together an internationally-renowned research centre and an advanced hospital group that provides care for all types of cancer – including the rarest forms. Founded in 1909 by Nobel laureate Marie Curie, Institut Curie comprises three sites (Paris, Saint-Cloud and Orsay), where more than 3,400 members of staff are dedicated to achieving three objectives: hospital care; scientific research; and the sharing of knowledge and the preserving of legacy.

As a private charitable foundation since 1921 that is recognised as serving the public interest, Institut Curie is supported by donations and grants. This support is used to fund discoveries that will improve treatment and the quality of life of cancer patients.

Since 2011, Institut Curie is certified "Institut Carnot Curie Cancer". The Carnot label is a label of excellence granted to academic research structures with proven high quality and involvement in partnership research. Curie Cancer offers industrial partners the opportunity to set up research collaborations, benefiting from the expertise of the Institut Curie teams, for the development of innovative therapeutic solutions against cancers from the therapeutic target to clinical validation.

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