FOREWORD

Institut Curie: united in building our future

One hundred years ago, the ‘Fondation Curie’ was born. At the same time, Marie Curie crossed the Atlantic and returned to France with a precious gram of radium. Symbolically, these two events triggered the starting points of two extraordinary adventures. The first continues to immortalize the action of Institut Curie in terms of its research, care, and teaching thanks to the generosity it receives. The second has opened the way to many scientific discoveries. We can only be grateful to Marie Curie and her successors for their tireless efforts to advancing science, fighting cancer, and helping cure more and more patients.

Since then, through the teams based at its three entities - the Research Center, the Hospital Group and Head Office - Institut Curie has fully embraced these missions bestowed on it by its illustrious founder. The MC21 strategic plan, which ended in 2021, pursued the objectives of an Institut Curie that is ever more innovative in the face of the challenges posed by cancer. Ever more daring in its scientific choices, and ever more effective in its patient care.

As you read these lines, the thinking behind the launch of Institut Curie into the next decade is fully underway, by extending and accompanying investments made until 2021. All employees have been invited to contribute to the development of this Curie 2030 strategic plan. We would like to thank them for their involvement in this ambitious program, which will consolidate Institut Curie’s national and international reputation for excellence in basic research and as an expert center for cancer research.

As a European leader in the fight against cancer, this plan commits us to our employees, our patients, our institutional and industrial partners as well as our donors and sponsors. It commits us to making our common future, a future without incurable cancer.

Prof. Thierry Philip, Chairman of the Executive Board
Prof. Djillali Annane, member of the Executive Board
Prof. Dominique Deville de Périère, member of the Executive Board
Prof. Alain Puisieux, Director of the Research Center
Prof. Steven Le Gouill, Director of the Hospital Group
Jacques Gilain, Head Office Director
To be at the forefront of research and attract scientific talent

In 2021, Institut Curie celebrated its 100th anniversary and laid the foundations for its future developments. Professor Thierry Philip, Chairman of the Executive Board, and Daniel Thierry, Chairman of the Supervisory Board, discuss the ambition and prospects of this illustrious institution.

What were the highlights of the past year?

Daniel Thierry: The first thing I would like to highlight about 2021, which is still tainted by the health crisis, is the unfailing support of our patrons and donors, our public partners and the strong commitment of all Institut Curie staff. In September 2021, the arrival of Professor Steven Le Gouill as Director of the Hospital Group launched a new dynamic. With the support of Carot Curie Cancer, two UHR grants (University Hospital Research programs within the health sector: CASSIOPEIA and EpCART) were obtained for a budget of approximately 20 million euros. This is a great accomplishment.

Prof. Thierry Philip: The two UHR grants are, of course, a great source of pride. They reward the work of Institut Curie’s medical and research teams and open up new perspectives for the development of future cancer treatments. The appointment of Professor Edith Heard as head of Institut Curie’s Scientific Advisory Board is also to be welcomed. Professor at the Collège de France, Director General of the European Molecular Biology Laboratory (EMBL) and former director of a research unit, she is ranked 10th among European countries. Her official figures, both French and American, were very receptive to our approach. They still share our values, those held by Marie Curie 100 years ago! The scientific work of our illustrious founder remains engraved in everyone’s memory and is integrated into our daily ambitions!

In this election year, what do you expect from future orientations in the fight against cancer?

Prof. Thierry Philip: The ten-year strategy to fight cancer was announced on 4 February 2021 by the President of the French Republic. Although I am fairly optimistic about the policy implemented by the government in this area, I remain, given our difficulty in keeping the best talent in France, more reserved about the law on research programming. With 0.76% of GDP devoted to research, and 1.44% if we include private funding, France is only ranked 10th among European countries.

Daniel Thierry: Investment in these sectors is a major driver for job creation and economic development, not to mention the potential for innovation and creativity for our country’s doctors and researchers!

In this context of strong competition within the world of research, and given that the health crisis has undermined the vocation of healthcare professionals, how does Institut Curie maintain its attractiveness?

Prof. Thierry Philip: This is an ongoing struggle that remains at the forefront of our minds on the Supervisory Board and the Executive Board. While Institut Curie benefits from a certain attractiveness due to its renowned and recognized expertise, its reputation, and its history, we must maintain an attractive salary structure in order to retain the best talent. This deliberation will be at the heart of the social component of the Curie 2030 strategic plan that we launched at the end of 2021.

What will be the highlights of 2022?

Prof. Thierry Philip: Without a doubt, the accreditation of the Hospital Group by the French National Authority for Health. At the end of the year, the extension of the new Saint-Cloud Hospital will have finished and that will be another highlight! With regards to our various establishments in Paris, we hope that the projects concerning the future Claudius Regaud research building and the extension of the Coursaget hospital can be accelerated. The year 2022 will also be marked by the creation of our new Curie 2030 strategic plan, as we are committed to an open, collective, and collaborative approach. Our objective is to bring Curie 2020 to life, despite a global economic and geopolitical context that remains uncertain.

Curie 2030 is the very concept of the Louvre Pyramid: young talents take initiative and carry out innovative projects with a deep respect for our history and our values.

Prof. Thierry Philip, Chairman of the Executive Board

Daniel Thierry: Our first challenge will be to find the resources to adapt to economic constraints and go beyond these difficulties. The second will be for Institut Curie to look ahead into the decade leading up to 2030. This starts with a governance system in working order. We are now at that point. In March 2021, the Director of the Research Center, Professor Alain Puisieux, presented his six-year program to maintain the Research Center, at the forefront of international research. In 2022, Professor Steven Le Gouill will present his vision for the future of the Hospital Group. The objective is also ambitious: to ensure that Institut Curie is a world leader in cancer research. Armed with these two strong intentions and a Curie 2030 strategic plan supported by all the staff, Institut Curie can confidently enter its second century.
One hundred years later, our ambition remains intact: gain understanding to treat and cure more and more patients

Institut Curie is made up of three entities that work hand in hand and share the same humanistic desire to progress in the fight against cancer. A group interview with Professor Alain Puisieux, Director of the Research Center, Professor Steven Le Gouill, Director of the Hospital Group, and Jacques Gilain, Director of the Head Office.

What were the highlights for Institut Curie in 2021? How will they drive research and help in the fight against cancer?

Prof. Alain Puisieux: I would like to highlight the progress made in our scientific program on our three sites. Whether in Paris, Orsay or Saint-Cloud, we have laid the foundations for several key projects for the future of the institute and strengthened our ties with the teams at the Hospital Group. I would like to emphasize the exceptional quality of the work carried out by our research teams. This is demonstrated by the 536 scientific publications in leading international journals and numerous national and international tenders. Since 2007, the ERC (European Research Council) grants obtained by our researchers represent nearly 10% of French ERC grants in the field of life sciences.

Prof. Steven Le Gouill: University hospital research is at the heart of the Curie model, and the two UHR grants obtained at the end of the year illustrate our expertise in this area, as well as the seven hospital clinical research programs funded by the French Ministry of Health. Our independent review of excellence, the renewed momentum in clinical trials and our publications in the leading international journals reflect our ability to interact with our counterparts and the attractiveness of Institut Curie.

Jacques Gilain: In terms of innovation, 2021 was a very positive year. The strength and relevance of the model supported by Institut Curie contributed to exceptional fundraising results for the development of start-ups. We also celebrated the tenth anniversary of our Carrot Label, which facilitates the establishment of industrial partnerships. Finally, we have developed cross-functionality between the three entities. Institut Curie’s excellence is rooted in our teamwork.

However, 2021 has not been easy. Particularly because of the pandemic. What challenges have you had to overcome to maintain your high standards?

Prof. Steven Le Gouill: Institut Curie’s carers and doctors were not spared the difficulties seen by the pandemic. Perhaps they have been affected even more so because they have been forced to adapt to continue making excellence a priority. I would like to pay tribute to the courage seen by all the teams who responded. They showed resilience and significant professionalism to ensure that their missions were carried out.

Prof. Alain Puisieux: Research is by nature a group effort, based on the exchange of ideas and skills. Distinguishing has created a gap, particularly in terms of scientific leadership. One of our main challenges was to ensure that the scientific project and the real estate project were consistent, by working hand in hand with the departments at Head Office: our work tool must be as efficient as possible. This is necessary to be competitive at an international level.

Jacques Gilain: During the pandemic, we took up three major challenges: maintaining donor trust and increasing the funds collected; managing the teams at Head Office in a context of teleworking and partial activity; and developing our ideas on how to manage the clinical translational research and innovation project. The latter is a project that aims to strengthen the coherence of our work and make our processes more fluid.

2021 was also the year of the Foundation’s 100-year anniversary. What did you take away from this?

Jacques Gilain: This anniversary marks our institution’s ability to be a long-term player. It also brings to light the trust that binds us to our donors and patrons, who have accompanied us for 100 years in all our projects.

Prof. Alain Puisieux: We have experienced some emotionally and symbolically powerful moments, particularly during the trip to the United States in November 2021. This celebration highlighted the importance of our values and the strength of Marie Curie’s vision, which still drives us today: fundamental research that feeds therapeutic innovation for the benefit of patients and humanity as a whole.

Prof. Steven Le Gouill: The name Marie Curie remains synonymous with scientific innovation and a pioneering spirit, and the reputation of Institut Curie stretches far beyond France. We are opening a second century, which we must imagine in terms of research, care, and the patient’s journey.

The year 2022 will be marked by the development of the Curie 2030 strategic plan. What do you expect from this project for Institut Curie and for your teams? What qualities does Institut Curie have to achieve this?

Prof. Alain Puisieux: We are going to make the strategic plan a growth-generating steering tool in terms of research competitiveness, therapeutic innovation, and digital transformation. Not forgetting the social and corporate social responsibility aspects, which are essential in attracting and retaining talent. We must not forget that Institut Curie is, above all, a human adventure and our main asset is our staff.

Jacques Gilain: To design this strategic plan, we initiated a participatory approach that gives specific importance to employees. More than a hundred of them will be directly or indirectly involved in writing it.

Prof. Steven Le Gouill: Curie 2030 is the foundation stone for yet another 100 years of Institut Curie’s history. We have a role to play in making our voice heard at both a European and French level in our fields of expertise, particularly regarding the younger generations.
A double centenary at Institut Curie in 2021

In 2021, Institut Curie celebrated its one hundredth anniversary since the creation of its foundation. A foundation that is recognized as being of public interest. This was an opportunity to remember that since the very beginning, the role of generosity has been essential in carrying out its research, care, and teaching missions.

In parallel with this anniversary, Institut Curie also commemorated Marie Curie’s triumphant trip to the United States in 1921. On 8 November 2021, a delegation of Institut Curie officials, scientists and doctors visited the French Embassy in Washington, D.C. (United States). This memorial and scientific event entitled “in the footsteps of Marie Curie” allowed for an unprecedented and historic meeting between the descendants of Marie Curie and the great-great-granddaughter of Marie Mattingly Meloney.

In 1921, this feminist figure had made it possible to collect one gram of radium. This was a valuable gift for the continuation of Marie Curie’s work.

RESEARCH

Two UHR grant winning projects

Two large-scale projects, led by Institut Curie, have won the “University Hospital Research” (UHR) program for health grant. Their objective: to respond to the therapeutic impasse of certain cancers. Bringing together academic, hospital and industrial partners, each of these projects will benefit from almost 10 million euros over a five-year period.

1. CASSIOPEIA, directed by Fatima Mcheta-Grigoriou, principal investigator of the project, head of the Stress and Cancer team and deputy director of the Inserm U930 unit, and Prof. François-Clément Bidard, medical oncology researcher, head of the Translational Research Group Circulating Tumor Biomarkers, in collaboration with several major industrial partners (Institut Roche, Roche, OncoDesign). This project aims to study triple-negative breast cancer, which affects 15% of breast cancer patients and for which there is an urgent need for innovative treatments and early detection of relapses. The long-term ambition is to develop novel therapies targeting fibroblasts, a cell type that is very abundant in tumors and has not been targeted for treatment until now.

2. EpCART, led by Prof. Sebastian Amigorena, principal investigator of the project and head of the Immune Responses and Cancer team (Inserm U932), and Dr. Marion Alcantara, a hematologist in the Hospital Group.

Institut Curie has been essential in carrying out its research, care, and teaching missions.

"FONDATION CURIE: 100 YEARS OF GENEROSITY IN THE FIGHT AGAINST CANCER"

Filmed at the Musée Curie (Curie Museum). This program launched the Fondation Curie’s 100-year celebrations on 27 May 2021.

1. From left to right, Raphaël Rodriguez, head of the Chemical Biology team; Kethevane Goyert, the moderator of the round table, and Grigoriou, head of the Stress and Cancer team.

2. From left to right, Sean Meloney Harrison, great-great-grandson, Marcel Joliot, and Yves Langevin.

3. From left to right, Sean Meloney Harrison, descendant of Marie Mattingly Meloney, and Marie Curie’s great-grandson, Marc Joliot, and Yves Langevin.

HIGHLIGHTS

The pathogenic role of retrotransposons deciphered

The Epigenetic Decisions and Reproduction team (CNRS UMR3215/Inserm U934/Sorbonne University), led by Deborah Bourc’his, published in Nature on 13 January 2021 the results of its work on a new defense system, exploring the multiple ways in which retrotransposons (mobile genetic entities capable of moving and ‘jumping’ around the genome) can cause pathologies. This work suggests that methylation defects in retrotransposon RNAs may contribute to diseases such as cancer, autoimmune diseases, and neurodegenerative diseases.

Nature 2021, Chelmicki and al.

RENEWAL OF FRAMEWORK AGREEMENTS WITH CNRS AND INSERM

After two years of collective work by Institut Curie’s Research Center teams and Head Office, the framework agreements with the CNRS and Inserm were renewed and signed in January 2021. They provide a framework for the relationship between Institut Curie and these national public institutions, which employ nearly 25% of the Research Center’s staff and contribute to the funding of the 13 mixed research units. The renewal of these agreements was an opportunity to clarify and formalize their content, so that they reflect the practices within the units.
IMMUNOTHERAPY
A new molecule improves survival in uveal melanoma cases

An international randomized phase 3 study, coordinated in France by Dr. Sophie Piperno-Neumann, medical oncologist at Institut Curie, demonstrates the efficacy of a brand-new immunotherapy molecule, tebentafusp, on the overall survival of patients with HLA-A2 positive metastatic uveal melanoma. It is the first bispecific and much-awaited survival enhancer in oncology for this rare melanoma.

New England Journal of Medicine 2021, Nathan and al.

IMMUNOTHERAPY
A new molecule improves survival in uveal melanoma cases

Dr. Sophie Piperno-Neumann, medical oncologist at Institut Curie, demonstrates the efficacy of a brand-new immunotherapy molecule, tebentafusp, on the overall survival of patients with HLA-A2 positive metastatic uveal melanoma. It is the first bispecific and much-awaited survival enhancer in oncology for this rare melanoma.

New England Journal of Medicine 2021, Nathan and al.

INTERNATIONAL
INSTITUT CURIE IN TANZANIA: THE CO-PILOT OF A COMMITTED PROJECT TO FIGHT CANCER

In December 2021, a delegation from Institut Curie, led by Prof. Thierry Philip, Chairman of the Executive Board, travelled to Tanzania to support and meet the partners of the Tanzania Comprehensive Cancer Project (TCCP), financed by AFD. The objective of this 4-year project is to reduce cancer mortality rates in Tanzania, which is one of the highest in the world, through the development of a comprehensive cancer control program.

In Brussels in April 2021, Institut Curie signed the deed to create DIGICORE (European Digital Institute for Cancer Outcomes Research). This European Economic Interest Grouping (EEIG) aims to meet the scientific, regulatory, and commercial challenges of so-called real-life data. This information, generated and collected during routine care or via connected objects over the course of a patient’s daily routine, makes it possible to optimize research and treatment and to improve care paths. Recognized as an expert center in France and Europe in the management and use of this data, Institut Curie was heavily involved in the creation of this alliance, alongside some thirty European cancer centers and private players.

ANNUAL REPORT 2021

AWARD
NICOLAS SERVANT, SUZIE URCEL AND CLAIRE SNIHOTTA, WINNERS OF THE PRIX CURIE 2021

“Receiving the Prix Curie is a great source of pride. In the age of big data and precision medicine, this prize provides recognition of our bioinformatics support work for research and care in oncology.” Nicolas Servant is co-director of the Research Center’s bioinformatics platform in Paris. He joined Institut Curie in 2005. His team provides technical and scientific support in data analysis, innovation, and bioinformatics. “For me, this Prix Curie is a recognition of my unwavering commitment to the institute. It is a strong signal to caregivers in these difficult times. I am truly proud to belong to the great Curie family.” In 2008, Suzie Urcel (in the middle) joined the operating room of the Saint-Cloud Hospital Group as a nurse anesthetist, in charge of emergency trolleys and intra-hospital vital emergencies. She is also a health simulation trainer and an emergency care trainer (AFGSU Certificate of Training in Emergency First-Aid).

“This award is first of all a nice surprise! It highlights the generosity of our loyal donors who have supported Institut Curie’s missions since its creation.” Claire Sniehotta (right) is a marketing manager in the Donor Relations Department at the Paris Head Office. Since 2010, she has been involved in defining, implementing, and steering the marketing strategy with the aim of developing resources from private generosity.

INNOVATION
28 start-ups have been created at Institut Curie since 2002, including 12 in the last five years. More than $25 million euros of funds have been raised. Five years after the initiation of the new strategy for valorization and industrial partnerships, Institut Curie is now identified as a leading center at European level capable of transforming innovation into entrepreneurial success. With its integrated start-up incubation program, presented for the first time in 2021, Institut Curie is continuing its drive to accelerate innovations in cancer research.

FUNDRAISING
An exceptional auction at the Hospices de Beaune

The 161st Hospices de Beaune wine auction took place on Sunday 21 November 2021. A record bid for a charity wine kit, a Corton Remarque Grands Crus 2021, was auctioned with half of the proceeds going to benefit Institut Curie. This is the second time Institut Curie has benefited from this prestigious operation. Pio Marmal, Institut Curie’s patron, worked hard to raise the bids, which reached a record sum of 800,000 euros. Thanks to this collection, Institut Curie will be able to acquire a state-of-the-art medical equipment with a sampling mechanism that will allow researchers to better characterize tumor cells.

INNOVATION
28 start-ups have been created at Institut Curie since 2002, including 12 in the last five years. More than $25 million euros of funds have been raised. Five years after the initiation of the new strategy for valorization and industrial partnerships, Institut Curie is now identified as a leading center at European level capable of transforming innovation into entrepreneurial success. With its integrated start-up incubation program, presented for the first time in 2021, Institut Curie is continuing its drive to accelerate innovations in cancer research.

RADIOTHERAPY
Stereotaxis, the future reference treatment for the prostate

The radiotherapy department at Institut Curie, headed by Prof. Gilles Créhange, now routinely offers stereotaxy for certain forms of localized or metastatic prostate cancer, for patients over 70 years of age or with comorbidities. Stereotaxy is a «concentrated» radiotherapy that takes place over just five sessions spread over a week and a half, which corresponds to a total dose equivalent to a conventional two-month treatment. This technique is very promising, particularly because of very moderate side effects for patients, and could be offered for all patients in the near future.
**The Research Center**

6 thematic areas of research:
- Epigenetics, RNA, and genome dynamics
- Cell biology and developmental biology
- Tumor biology and immunology
- Radiobiology and molecular imaging
- Physics of living systems and chemical biology
- Computational biology and systems biology

**Key Figures**
- **3,736** employees
- **242,000** active donors
- **435.6 million €** of resources
  (source: use of resources statement)
- **1,225** employees including 74 foreign employees
- **308** PhD students including 130 foreign PhD students (42%)
- **26.7 million €** (bequests and donations)
- **31.1 million €** (gifts and sponsorship)
- **1st European Center for breast cancer care**
- French cancer research center labelled Comprehensive Cancer Center since 2018 by the OECI
- **230** postdocs including 157 foreign postdocs (68%)
- **536** scientific publications at the research center
  - 6 thematic areas of research:
    - Epigenetics, RNA, and genome dynamics
    - Cell biology and developmental biology
    - Tumor biology and immunology
    - Radiobiology and molecular imaging
    - Physics of living systems and chemical biology
    - Computational biology and systems biology
- **20** ERC grants
  - (55 since the creation of these highly competitive funds)
  - including 1 advanced ERC obtained in 2021
- **40.2** million € in research contracts
- **13** mixed research units affiliated with the CNRS and/or Inserm and/or university
- **536** scientific publications at the research center
- **20** technology platforms
- **13** new emerging and growth-generating programs, including
  - 5 scientific and 4 medical and scientific programs
- **13** new emerging and growth-generating programs, including
  - 5 scientific and 4 medical and scientific programs
- **740** patents
- **28th start-up created in 2021**
- **13.2 million € of total revenue generated**
- **242,000** active donors
- **230** postdocs including 157 foreign postdocs (68%)
- **40.2** million € in research contracts
- **13** new emerging and growth-generating programs, including
  - 5 scientific and 4 medical and scientific programs
- **740** patents
- **28th start-up created in 2021**
- **13.2 million € of total revenue generated**
- **435.6 million €** of resources
  (source: use of resources statement)
- **1,225** employees including 74 foreign employees
- **308** PhD students including 130 foreign PhD students (42%)
- **26.7 million €** (bequests and donations)
- **31.1 million €** (gifts and sponsorship)
- **1st European Center for breast cancer care**
- French cancer research center labelled Comprehensive Cancer Center since 2018 by the OECI
- **230** postdocs including 157 foreign postdocs (68%)
- **536** scientific publications at the research center
  - 6 thematic areas of research:
    - Epigenetics, RNA, and genome dynamics
    - Cell biology and developmental biology
    - Tumor biology and immunology
    - Radiobiology and molecular imaging
    - Physics of living systems and chemical biology
    - Computational biology and systems biology
- **20** ERC grants
  - (55 since the creation of these highly competitive funds)
  - including 1 advanced ERC obtained in 2021
- **40.2** million € in research contracts
- **13** mixed research units affiliated with the CNRS and/or Inserm and/or university
- **536** scientific publications at the research center
- **20** technology platforms
- **13** new emerging and growth-generating programs, including
  - 5 scientific and 4 medical and scientific programs
- **740** patents
- **28th start-up created in 2021**
- **13.2 million € of total revenue generated**
### Key Figures

**The Hospital Group**

**2,219 Employees**
- 377 state-qualified nurses (operating theatre nurses, anaesthesia nurses, experts, maternity nurses)
- 102 nursing assistants
- 386 doctors (including 4 MCU-PH and 15 PU-PH)
- 97 nursing students and nurses
- 71 interns

**52,691 Patients**, including
- 13,556 new patients
- 286 international patients
- 17,236 patients undergoing treatment (74% women and 26% men)

**104,235 Consultations**

**178,939 Hospital Stays**, including
- 167,425 outpatient stays (including 60,462 stays in the Day Clinic) and 11,514 conventional hospital stays
- 4.5 days (average length of stay)

**49,124 Chemical Therapy Treatments** performed

**14,664 Surgery Hospital Stays**
- including 8,600 outpatient surgery stays

**106,963 Radiotherapy Sessions**

**Number of patients treated**

*for each type of cancer or tumors at Institut Curie Hospital Group*

**17,236 patients undergoing treatment, including 74% women and 26% men**

- **7,476 for breast cancer**
- **1,141 for respiratory system cancer**
- **1,070 for gynecological cancer**
- **851 for cancer of the male reproductive system**
- **563 for a pediatric cancer**
- **508 for skin cancer**
- **487 for ENT cancer**
- **412 for a sarcoma or complex tumor**
- **385 for blood or bone marrow cancer**
- **156 for thyroid cancer**
- **99 for urinary tract cancer**
- **80 for central nervous system cancer**
- **743 for an eye tumor**
- **699 for a sarcoma or complex tumor**
- **508 for skin cancer**

**49,124 Chemical Therapy Treatments** performed

**871 Scientific Publications from the Hospital Group**
- of which 22.7% with an impact factor of > 10
- of which 8.7% with an impact factor of > 20
  - Including 12 A+ and 229 A ranked publications

**7,476 for breast cancer**

**104,235 Consultations**
NEW TREATMENTS
A TEAM DECIPHERS IRON METABOLISM

The work carried out by the Chemical Biology of Cancer team (CNRS UMR3666 / Inserm U1143), led by Raphaël Rodriguez, has revealed a new entry point for inducing death to cells with metastatic potential in connection with iron metabolism. In 2020, this team revealed specific iron-related mechanisms capable of ‘reprogramming’ certain cells, making them metastatic and resistant to conventional treatments. The researchers then sought to better understand the cell death process of ferroptosis to identify new biomarkers and develop innovative cancer therapies. Raphaël Rodriguez, together with other scientists, Marcus Conrad (a ferroptosis pioneer) and Stuart Schreiber (the founder of modern chemical biology) has published an article that conceptualizes new therapeutic approaches.

Pedreira de Freitas Nader and al.

Molecular Cell 2021, Rodriguez and al.

TREX1 ENZYME IDENTIFIED AS AN AGGRAVATING FACTOR OF BREAST CANCER

Matthieu Piel, head of the Systemic Cell Biology of Polarity and Division team (CNRS UMR144 / Sorbonne University), Nicolas Manel, head of the Innate Immunity team (Inserm U932) and Philippe Chavrier, head of the Membrane and Cytoskeleton Dynamics team (CNRS UMR144 / Sorbonne University), in collaboration with the ENS, PSL, Sorbonne University and the Cordeliers Research Center, are studying the consequences of nucleus ruptures induced by the compression of tumor cells on breast cancer. The nucleus of a cell can be deformed, or even temporarily fractured, if the cell is itself compressed and deformed, for example in the event of migration or proliferation, which then leads to damage to the DNA. The scientists found that the breaks in the nucleus caused by cell compression allow the DNA to encounter the TREX1 enzyme, which makes the cancer cells more invasive and facilitates their spread. The researchers now want to identify and test molecules that could block its activity, inhibitors that could have many applications in therapy.

Pedreira de Freitas Nader and al.

Cell 2021
NEW TEAMS

INSTITUT CURIE PROMOTES YOUNG TALENT

Two new JPIs (junior principal investigators) have recently joined Institut Curie’s research teams.

Annabelle Ballesta, mathematician, has taken over as head of the Applied Systems Pharmacology for Cancer team (Inserm-U900 / Mines Paris-PSL). “My team, made up of mathematicians, bioinformaticians and statisticians, aims to optimize and personalize cancer therapies. Our work is based on two axes: the first consists of individualizing drug combinations according to the profile of the tumors. The second is to adapt the administration schedules over 24 hours - we call it chronotherapy - according to different patient parameters such as gender or chronotype, which corresponds to a person’s day/night rhythm.”

Enzo Poirier, a virologist by training, heads the new Stem Cell Immunity team (Inserm-U932). His mission? To work on the defense programs of viruses, a largely unexplored field of research in which certain mechanisms are also mobilized by cancer cells. This fundamental work could help identify new therapeutic approaches. “It is a real opportunity to be able to create a research team at Institut Curie! In addition to the cutting-edge technical facilities available to researchers, I will also take advantage of the Curie environment to ask new questions at the interface of biology and mathematics.”

A FACTOR IN MALE SUB-FERTILITY IDENTIFIED

One of the possible origins of male infertility has just been identified by Carsten Janke’s team (CNRS UMR3244 / Sorbonne University), led by Chunlong Chen as part of an international collaboration. Replication is the biological process that allows, at chromosomal level, the identical production of new DNA molecules at each cell division. Proper replication is essential to maintain the integrity of the genome. Researchers are now able to visualize the sites of replication process malfunctions. Understanding of the pathological phenomena (in particular cancers) that can occur when the replication process malfunctions.

Science 2021, Wang and al.

FUNDING

YOHANNS BELLAÏCHE RECEIVES ERC FUNDING

The Polarity, Division and Morphogenesis team (CNRS UMR3215 / Inserm-U934 / PSL / Sorbonne University), led by Yohanns Bellaïche(1), is working to better understand the mechanisms that allow tissues to acquire a given shape during their development. Yohanns Bellaïche won funding from the European Research Council (ERC) in May 2021 for the Scalling Sensitivity project. This project will benefit from an ERC Advanced Grant of €2 million over 60 months to understand the links between cell size and tissue shape. This is a real achievement, one that should not be overlooked, given the selective nature of European funding.

(1) Yohanns Bellaïche is also Deputy Director of the Genetics and Developmental Biology unit at the Institut Curie Research Center.

EVENT

Science festival 2021: all mobilised

Around fifty researchers, engineers, post-doctoral students, doctoral students and collaborators from the Physics and Chemistry Curie unit (CNRS UMR168 / Sorbonne University), the Cell Biology and Cancer unit (CNRS UMR144 / Sorbonne University) and the LabEx Cell(n)Scale unit at the Research Center were mobilized to welcome visitors to the 30th edition of the science festival, on 8 and 9 October 2021. Visits to the workshops were offered in the Paris based laboratories of Institut Curie and at Institut Pierre-Gilles de Gennes. With the help of demonstrations, observations, experiments, and posters, young and old alike were able to discover the research carried out at Institut Curie on the theme of « Cells at the heart of life ».

GENOME

Optical replication mapping: a new method

A brand-new method for replication by optical mapping, a high-throughput single-molecule approach, has just been developed by the Replication and Genome Instability Program team (CNRS UMR3244 / Sorbonne University), led by Chunlong Chen as part of an international collaboration. Replication is the biological process that allows, at chromosomal level, the identical production of new DNA molecules at each cell division. Proper replication is essential to maintain the integrity of the genome. Researchers are now able to visualize the sites of replication initiation with great precision and reliability. These results open up prospects for a better understanding of the pathological phenomena (in particular cancers) that can occur when the replication process malfunctions.

Molecular Cell 2021, Wang and al.
The anti-infective power of extracellular vesicles demonstrated

The surface of the SARS-CoV-2 virus, which causes Covid-19, is coated with a Spike protein, which binds to the ACE2 (angiotensin-converting enzyme 2) receptor on the surface of human cells, particularly lung cells, to enter cells. Another membrane receptor on the surface of host cells, the TMPRSS2 (transmembrane protease serine 2) receptor, converts the Spike protein, allowing the virus to enter the cell. The Extracellular Vesicles, Immune Responses and Cancer team (Inserm U932) led by Clotilde Théry, in collaboration with the CNRS and Institut Pasteur, has demonstrated the anti-infectious power of these extracellular vesicles in vitro. These results reveal a therapeutic avenue for the local treatment of Covid-19.


COVID-19

SINGLE CELL

Four platforms join forces

The Single Cell Initiative is the result of a project proposed by four technology platforms at Institut Curie’s CureCoreTech: Custom Single Cell Omics, High Throughput Sequencing (CIGEX), Cyometry and Bioinformatics (CUBIC). It is part of the Research Center’s strategic plan to provide researchers with the most efficient and state-of-the-art tools. The initiative aims to optimize the services and developments of Single Cell technologies for the benefit of the scientific community. One of the technologies recently released by the Custom Single Cell Omics platform is Smart-seq3 technology, a unique scRNA-seq method that covers the entirety of RNAs, allowing allele resolution, splice isoform identification and genetic variants.

APPOINTMENT

Handover takes place in the Immunity and Cancer unit

Ana-Maria Lennon-Duménil, an immunologist, has been the head of the Research Center’s Immunity and Cancer unit (Inserm U932) since 1 April 2021, succeeding Prof. Sebastian Amigorena, who headed this unit for 12 years. With the help of a longitudinal study of immune cells team, her work focuses on the use of multidisciplinary approaches to understand, at different scales, the functioning of immune cells.

Handover takes place in the chemistry and modelling for cancer biology unit

Florence Mahuteau-Betzner has been appointed as director of the Chemistry and Modelling for Cancer Biology unit (CNRS UMRg137 / Inserm U9356 / Université Paris-Saclay) based in Orsay. This unit is interested in small molecules that disrupt life. The objective of the 40 people who make up the unit is to design and synthesize molecules and study their interactions with biomolecules, mainly nucleic acids, and proteins. Two teams are developing ligands (molecules capable of reversible binding) of particular nucleic acid structures, while the third team is interested in protein ligands, particularly kinases.

APPOINTMENT

My objective is to maintain and even strengthen the diversity of our work in fundamental and translational research. I want our knowledge in quantitative biology, physics, and cellular immunology to reach the patient’s bed. The richness of this unit lies in the diversity of the profession and expertise of each person. I must ensure that there is room to talk for all those who contribute, at all different levels, to ensure the smooth running of the unit and its scientific production; indeed, this integrative spirit can only be beneficial to the research we carry out."

Ana-Maria Lennon-Duménil,
Director of the Immunity and Cancer unit

APPOINTMENT

I am very attached to interdisciplinarity, which is important in the understanding of the interactions between small molecules and biomolecules. Our unit brings together strong expertise in each discipline: organic chemists but also biochemists, biologists, modelers, and a doctor, who all work together. The unit also continues to develop innovative methodological tools, which are essential for developing research at the chemical-biology interface." 

Florence Mahuteau-Betzner,
Director of the Chemistry and Modelling for Biology of Cancer unit

SCIENCE AT ITS BEST: A NEW DEDICATED SPACE ON CURIE.FR

Following a collaborative effort, the website www.curie.fr now has a new, more modern, and more ergonomic "researchers" area since December 2021. The aim of this thematic space dedicated to the scientific activities of Institut Curie is to better promote the work and teams of the Research Center. With the help of all the researchers, more than 280 pages in French and in English have been updated or created, making it possible to understand the organization of the Research Center, to improve its visibility and to increase its audience within the national and international scientific community.

T E C H N O L O G Y

Creation of the CurieCoreTech platform - Extracellular vesicles

In June 2021, Coralie Guérin, manager of the Curie CoreTech Cyometry platform, and Clotilde Théry, head of the Extracellular Vesicles, Immune Responses and Cancer team (Inserm U932), created the Extracellular Vesicles Platform at the Institut Curie Research Center. The platform offers its expertise in the isolation and characterization of extracellular vesicles (exosomes, ectosomes, micro vesicles), following the experimental recommendations published by the International Society for Extracellular Vesicles (ISEV), the «MISEV guidelines». This platform can provide scientific or technical advice, project coordination or training as required.

UNITED FOR RESEARCH ADVANCES
The transmission of knowledge is a necessity required to maintain the level of excellence in medicine and research. Despite the cancellation or postponement of certain training courses due to the Covid pandemic, the Advanced Training Office was able to quickly adapt its activities by changing its delivery methods and developing numerous online courses.

The Advanced Training Office at the Research Center has continued to recruit doctoral students and has not hesitated to set up more courses in 2021, despite the pandemic. "Many online courses have been developed to support young researchers during this difficult period," says Graça Raposo, Director of Advanced Training Office (Research Center). "Training activities have also been launched in close collaboration with the doctoral students’ association, ADIC."

The online recruitment model set up for the international programs enabled 11 new international PhD students to join Institut Curie. A one-month integration period was offered with specific training for newcomers, which some of them were able to attend even though their arrival was delayed due to the pandemic. They were also able to follow the 21 cross-cutting skills courses and the two scientific integrity courses organized and provided in the form of webinars, along with all the doctoral students.

In the same way, the international courses given by the Hospital Group were resumed in a hybrid format. "These clinical-biological courses, which are characteristic of Institut Curie’s training offer and are open to doctoral students, were once again a great success in 2021," explains Prof. François Doz, Director of Advanced Training Office (Hospital Group). "For example, a course on childhood brain tumors, organized jointly with partners from the Ile-de-France region (Université Paris Cité, Necker and Sainte-Anne Hospitals, Gustave Roussy), attracted more than 200 participants and speakers from all over the world."

Regular activities, such as courses given to medical students and interns, alternated between face-to-face and distance learning. Online training was organized with university partners and on site at Institut Curie for medical students or students taking university (UD) or inter-university (IUD) diplomas. The second-year masters PhD program for doctors, pharmacists and other healthcare professionals was continued in 2021: it enabled ten doctors, interns, or assistants, working in the fields of cancerology, to be supported following their wish to receive additional training through research in the laboratories of Institut Curie’s Research Center. The Hospital Group has also adapted to take over the organization of industrial-sponsored courses, both online and in-person, given by doctors who are renowned in their discipline.

Institut Curie welcomes foreign doctors. Allowing foreign doctors to come and train at Institut Curie is possible within the framework of European programs, such as the EMERALD program, for which a first doctoral student was recruited following a European call for tender. In addition, Lebanese doctors wished to complete their training at Institut Curie, as part of a Fellowship program set up with the logistical support of the Advanced Training Office, for five practitioners and researchers. As proof of the attractiveness of Institut Curie, 140 doctors applied to do a training course there, even if not all of them were accepted, especially in the context of the pandemic.
The medical-scientific program 2021 studies include minors and adults under recruitment for minors included in clinical studies in phase I, II and III.

CLINICAL STUDIES in a clinical study patients included 2,410

BREAST CANCER – Coordinated by Prof. François-Célimont Bidard & Fatima Mechina-Grigoriou

- 31 publications with an impact factor greater than 10 (+ 50% compared to 2020)
- Support for 2 emerging projects for an amount of €60,000 thanks to public generosity.

RADIOTherapy and radiAtion BIoLOGY – Coordinated by Prof. Gilles Creillange & Marie Dutreix

- 6 clinical trials underway or planned (phase I or II): Neo-Checkray, Nivoglio, Blad-Rad01, NanoRadi, Neoproganp-Co, AstraZeneca® Chryldren
- 2 new patents: a family patent on AsDNA™, and “X-scanning dynamic minibeam collimator” filed by Yolanda Prezado.

EPiGENETICS – Coordinated by Geneviève Aimar-Pamphile & Caroline Vallet

- Initiation of the spatial-omics working group (3 international meetings in 2021, in collaboration with Labex DEEP and LifeTime).
- Patent filing and publication of the manuscript for the CENPREDICT project (submitted in March 2022) for the IRONSUV high-risk project.

UROLOGICAL CANCER – Coordinated by Prof. François Doz

- Launch of the PRECIPAP national database on genetic predisposition to cancer (coordination Franck Bourdeaut).
- Implementation of genetic counselling for all patients of the SIREDO Center.
- European programs Trio Lab, INFORM2, Alectisib, Aplexlab/Lentarixinn, AsDNA™: European study MycKids on rare childhood cancers (coordination Dr. Daniel Oribi).
- Immunotherapy project in Ewing’s sarcoma supported by the Ligue Nationale de Cancer (coordination Dr. Olivier Delattre).

EARLY TRIALS – Coordinated by Prof. Christophe Le Toumelin & Prof. Aurélien Latouche

- Implementation of the national monthly Cancer of Unknown Primary Origin (CUP) as part of the France Genomic Medicine 2025 plan.
- Launch of the international real-life clinical genomic database WAYFIND-R.
- Launch of the phase I /II clinical trial of cell therapy in oncology at Institut Curie (Early trial).

IMMUNOTHERAPY – Coordinated by Prof. Sebastian Amigoni and Dr. Emmanouela Roman

- December 2021 – Obtained UHR funding from the ANR (Agence nationale de la recherche) (10 million euros) for the EpCART project (2022-2027) coordinated by Prof. Sebastian Amigoni and Dr. Marion Ablain to develop the CAR-T cells designed in academia and to obtain authorization for first injection in humans (IND) from the ANSM in order to launch a phase I clinical trial of cell therapy in oncology at Institut Curie (Early trial). This UHR project is a collaboration between the Immunity and Cancer unit (Inserm U1032), the start-up Mmneo Therapeutics and the MHEARY cell and gene therapy center at the Public Assistance - Paris Hospitals.

thoracic CANCER – Coordinated by Prof. Nicolas Girard & Dr. Olivier Lantz

- 14 contracts obtained in 2021.
- More than 60 patents have been included.
- CURIMMUNO cohort: 300 patients were treated with immunotherapy alone or with immunotherapy + chemotherapy.

PEDIATRIC AND YOUNG ADULT CANCER – Coordinated by Prof. Dr. Olivier Delattre & Prof. François Dez

- Launch of the PRECIPAP national database on genetic predisposition to cancer (coordination Franck Bourdeaut).
- Implementation of genetic counselling for all patients of the SIREDO Center.
- European programs Trio Lab, INFORM2, Alectisib, Aplexlab/Lentarixinn, AsDNA™: European study MycKids on rare childhood cancers (coordination Dr. Daniel Oribi).
- Immunotherapy project in Ewing’s sarcoma supported by the Ligue Nationale de Cancer (coordination Dr. Olivier Delattre).

38 clinical studies, Institut Curie promotion

patients included in clinical studies 2,410

22 ANNUAL REPORT 2021 ANNUAL REPORT 2021 | 23
For 65% of women surveyed by the mental burden study of patients with metastatic breast cancer (carried out by the Collectif 1310 \(^1\) in August 2020), receiving the diagnosis of metastatic breast cancer is the most painful stage of their illness. This is why Institut Curie, supported by the Carnot scheme, announced in June 2021 the development of the PACOSME program, a diagnosis delivery and coordination pathway specifically dedicated to these patients. This large-scale project, which started in June 2021, and which will last three years, is led by Dr. Pauline Vaflard and Dr. Paul Cottu and supported by Pfizer. The PACOSME program provides the various healthcare professionals involved with training and coordination in order to offer patients with optimal care and support when the metastatic disease diagnosis is delivered.

In 2021, the first stage of this project was focused on identifying and analyzing patient needs with the support of the Patients Network Association (Patients en réseau). It identified the expectations of the healthcare professionals involved and supported the training of healthcare staff. The year 2022 is dedicated to the structuring and implementation of the PACOSME pathway. Laetitia Lenne (the project’s referral nurse) and Silène Delorme (the therapeutic education referral nurse) have organized working groups with the nurses of the Curie day hospital with the aim of starting PACOSME consultations in June 2022.

---

\(^1\) The ‘Collectif 1310’ is a group of patient associations that gives a voice to people facing metastatic breast cancer, an advanced and aggressive form of cancer.
CIRCULATING BIOMARKERS

EVALUATING THE EFFICACY OF CHEMOTHERAPY: A CLINICAL STUDY UNDERWAY AT INSTITUT CURIE OFFERS HOPE

Today, the performance evaluation of a new chemotherapy is mainly based on radiological examinations and can take months. And yet, monitoring quantitative variations in circulating tumor DNA molecules (tcDNA) in the blood could provide a quick way to determine whether a cancer is responding to chemotherapy. This innovative trial, called MONDRIAN, could radically change the way metastatic disease is managed: reducing the time needed to assess treatment efficacy, avoiding radiation, and giving clinicians a head start for personalized treatment.

The Hospital Group has invested to provide a shadowing program with the medical assistants already in place. For example, two medical administrative assistants, Laurence Aumiot based at the Saint-Cloud site (left) and Cyrielle Laine based at the Paris site (right), specialize in coaching their new colleagues within a dedicated program (specialized teaching path). They welcome new employees and trainees to the medical administrative offices, integrate them and teach them the basics of the job at Institut Curie. In 2021, 53 of the 190 or so medical administrative assistants and secretaries in the Hospital Group completed this program. “This innovation has been a success, meeting the initial objectives whole heartedly. Thanks to this system, the new recruits feel supported and fully capable of completing their tasks in our beautiful house. After three years of practice, all the teams are unanimous about the essential role played by Cyrielle and Laurence,” says Valérie Huret, Director of Medical Administrative Officers at the hospital.

Medical administrative offices: an innovative integration program to improve efficiency

The job of a medical administrative assistant in a cancer center such as Institut Curie is very specific. As such, training new recruits is key to making them autonomous and efficient as quickly as possible. The Hospital Group has invested to provide a shadowing program with the medical assistants already in place. For example, two medical administrative assistants, Laurence Aumiot based at the Saint-Cloud site (left) and Cyrielle Laine based at the Paris site (right), specialize in coaching their new colleagues within a dedicated program (specialized teaching path). They welcome new employees and trainees to the medical administrative offices, integrate them and teach them the basics of the job at Institut Curie. In 2021, 53 of the 190 or so medical administrative assistants and secretaries in the Hospital Group completed this program. “This innovation has been a success, meeting the initial objectives whole heartedly. Thanks to this system, the new recruits feel supported and fully capable of completing their tasks in our beautiful house. After three years of practice, all the teams are unanimous about the essential role played by Cyrielle and Laurence,” says Valérie Huret, Director of Medical Administrative Officers at the hospital.

Today, the performance evaluation of a new chemotherapy is mainly based on radiological examinations and can take months. And yet, monitoring quantitative variations in circulating tumor DNA molecules (tcDNA) in the blood could provide a quick way to determine whether a cancer is responding to chemotherapy. This innovative trial, called MONDRIAN, could radically change the way metastatic disease is managed: reducing the time needed to assess treatment efficacy, avoiding radiation, and giving clinicians a head start by allowing them to offer new chemotherapies before the cancer progresses. tcDNA monitoring would also rule-out chemotherapies that are not effective enough on a given cancer thus reducing prolonged exposure and side effects. This trial, which started in June 2021, includes some 214 patients over three and a half years.”

Prof. François-Clément Bidard
Medical oncologist, principal investigator of the study

PEDIATRICS

European harmonization of very rare childhood tumor management: SIREDO at the forefront

As part of the European PARTNER (Paediatric Rare Tumours Network - European Registry) project, a group of oncopediatricians from 20 different countries, has published harmonized diagnostic and therapeutic recommendations throughout Europe for 8 very rare childhood tumors. This group is led by Dr. Daniel Orbach, Deputy Clinical Director of the SIREDO (1) center at Institut Curie. The end goal of this management harmonization is to be able to evaluate the effectiveness of therapeutic proposals and to ensure that they evolve over time if necessary. The next stage of the PARTNER project consists of collecting clinical data from these young patients on a European scale within a common database to get a better blueprint of these children’s future, and to know, in particular, if these recommendations should be modified.

Pediatric Blood and Cancer 2021
(1) Care, Innovation & Research in Childhood, Adolescent and Young Adult Oncology

DIGITALISATION

Deployment of digital pathology at the DTMD

The Diagnostic and Theragnostic Medicine Department (DTMD), headed by Dr. Anne Vincent-Salomon, is preparing for its switch to digital technology in the summer of 2022. “Instead of using a microscope to analyze glass slides containing tissue sections from biopsies, scanners will transform them into digital images,” explains the manager, who believes that this artificial intelligence tool will make diagnosis almost 100% reliable for the most common cancers as well as for rare cancers, by distinguishing between in situ and infiltrating cancers. A project team made up of pathology technicians from the Paris and Saint-Cloud sites and the specialist company Sectra, is supporting the DTMD teams until the project’s full deployment, scheduled for September 2022.

These blade scanners have already enabled the DTMD to integrate in industrial partnerships in pathology: in 2021, notably with iuex, an Israeli start-up, as well as research projects between several research units at Institut Curie and Mines Paris - PSL to predict the presence of a DNA repair defect linked to BRCA1 and BRCA2 mutations. Institut Curie also receives samples from partner institutions to sequence tumors or blood to define the cancer predisposition of patients.

In 2021, the DTMD teams really rallied together to collectively choose the slide scanners and the image management system that connects these slides to the patient’s medical records.”

Dr. Anne Vincent-Salomon
Head of the Diagnostic and Theragnostic Medicine unit (DTMD)

RADIOTHERAPY

Even shorter radiotherapy

The hypo-fractionated radiotherapy approach developed by Institut Curie doctors treating elderly breast cancer patients with no high risk of relapse, consists of reducing the number of sessions to simplify access to treatment. Since 2021, Institut Curie has been one of the first cancer centers to offer selected patients a treatment protocol in just 5 days, with one session per day. This represents a considerable gain in terms of quality of life for patients.
**LUNG CANCER**

The Precision Predict study opens, Health Data Hub grand prize

Winner of the Health Data Hub's call for projects in 2020, the Precision Predict study, launched in 2021, aims to analyze more than 1,500 lung cancers with EGFR mutations. This project is the result of a collaboration between clinicians and researchers from nine cancer control centers and is led by Institut Curie and coordinated by Professor Nicolas Girard, oncologist, and pulmonologist at the head of the Curie-Montsouris Thorax Institute (Inserm).

Its aim is to create a clinical and medical imaging database (X-ray and PET scans) of patients with bronchopulmonary cancer with an EGFR-activating mutation and treated with targeted therapy. It will provide a better understanding of response heterogeneity of bronchial cancers to targeted therapies.

**ONCOGENETICS**

**BREAST AND OVARIAN CANCER SUSCEPTIBILITY GENES: A MAJOR STEP FORWARD IN THE IDENTIFICATION OF BRCA1 AND BRCA2 VARIANTS**

Between 2 and 3% of cancer cases, or about 7,000 patients per year, are due to mutations in BRCA1 and BRCA2 genes. The Precision Predict study opens to better understand the response to targeted therapies. It will provide a better understanding of response heterogeneity of bronchial cancers to targeted therapies.

**THE OPERATING ROOM GOES GREEN**

In the operating room, the consumption of highly-pollutant anesthetic gases has been reduced by a third over five years. That’s the equivalent of 75 tons of CO2 and a saving of 23,000 euros per year since 2016 by the Anesthesia, ICU, and Pain Management department at the Paris site.

Dr. Jane Munte, head of the Anesthesia, ICU, Pain Management department, Paris site

A system for sorting waste from to the most common surgical acts and recycling plastic parts has been set up in the Saint-Cloud operating room. Since April 2021, 25 kg of waste per month has been recycled, or 300 kg in one year.

Dr. Aline Albi-Feltz, head of the Anesthesia, ICU, Pain Management department, Saint-Cloud site

**ENVIRONMENT**

**PANCREATIC CANCER**

A clinical trial to boost the effectiveness of immunotherapy

Apart from chemotherapy, medical science has not yet found an effective answer to metastatic pancreatic cancer. Immunotherapies do not work well on these types of rapidly progressive cancers because they are poorly recognized by the immune system. A clinical trial promoted by GERCOR (TEDOPAM PRODIGE 63 study) is underway at Institut Curie and led by Dr. Cindy Neuzillet, gastroenterologist, and digestive oncologist responsible for the digestive pathway at the Saint-Cloud site (Inserm). “Our aim is to evaluate the effectiveness of an immunotherapy using the anti-tumor vaccine Tedopi (which enables lymphocytes to be educated against proteins produced by the tumor) in association with chemotherapy. This represents real hope for prolonging the survival of patients.”

**CANCERS OF UNKNOWN ORIGIN**

A multidisciplinary consultation meeting for cancers of unknown origin

Between 2 and 3% of breast cancers are hereditary, i.e., attributable to genetic alterations. Being a carrier of an alteration (or pathogenic variant) in one of these genes does not systematically result in the appearance of a cancer, but it does considerably increase the risk of developing one. The variants of these genes are numerous and not all of them are associated with an increase in tumor risk. Their classification as pathogenic or non-pathogenic variants is a major issue. The first results of the COVAR (COsegregation VAriant) study, which was conducted in France for more than 10 years by Institut Curie’s genetics department directed by Prof. Dominique Stoppa-Lyonnet (photo opposite), have classified 100 variants of the BRCA1 and BRCA2 genes, using an analysis method that involved the families. These 100 variants involved more than 1,600 families. The aim of this project is to improve diagnostic genetic tests to allow for better adaptive management of patients and their relatives and allow them access to specific anti-tumor treatments such as PARPi.

Between 5 and 10% of breast cancers are hereditary, i.e., attributable to genetic alterations. Between 1,600 families. The aim of this project is to improve diagnostic genetic tests to allow for better adaptive management of patients and their relatives and allow them access to specific anti-tumor treatments such as PARPi.

**American Journal of Human Genetics 2021, Caputo et al.**

**Dr. Olivier Choussy,** Surgeon and head of the Department of Surgery

Covid and the resulting HR difficulties have forced the conventional surgical department to review its organization and medical practices. “Since May 2021, one-third of the department has been closed due to the absence of nursing staff and nurses. Our objective was to maintain the therapeutic excellence to which patients and caregivers are accustomed. This meant, first and foremost, respecting surgery deadlines, which are essential for maintaining a patient’s chance of remission intact,” explains Dr. Olivier Choussy, surgeon and head of the Department of Surgery. We had to reinvent ourselves and rethink our operating methods by transferring part of our conventional surgical activities in gynecological and senological plastic surgery, digestive surgery, ophthalmological surgery, and ENT surgery to ambulatory surgery instead. All the teams have shown admirable investment and solidarity in the implementation of these changes. Some of the new processes have proved to be beneficial in the long term – they facilitate the recovery of patients after their operation - and are now being continued.

Dr. Olivier Choussy, Surgeon and head of the Department of Surgery
To improve patient well-being

Valued internationally, supportive care includes a clinical research dimension, as demonstrated by the SHARE project launched in June 2021. Supportive care improves the well-being of patients through the clinical pathways set up at Institut Curie.

**Physical activity and sexuality of patients under care**

"Since its launch, the adapted physical activity platform (APA) has included more and more patients," says Professor Carole Bouleuc. A three-stage care pathway has been set up, and includes raising awareness sessions during patient conferences, the prescription by the oncologist of an adapted physical activity mentioning any limitations or precautions, and then the inclusion of patients in STARTER programs with Institut Curie’s sports partners either in the hospital or remotely. Finally, a study was carried out in 2021 to set up a care pathway in onco-sexology, enabling patients’ sexuality problems to be dealt with. A multidisciplinary working group involving oncologists, radiotherapists, psychosocial workers, and nurses has defined a clinical pathway which will be available to patients in September 2022.

**Institut Curie is a forerunner in this field, its research activity around supportive care dates back for a long time, but was not really known until now,” says Professor Carole Bouleuc, head of the Interdisciplinary Department of Supportive Care department of the Hospital Group. The creation in June 2021 of the SHARE center (a research center in human and social sciences and outcome research) will make it possible to structure and group together all the research activities relating to patient quality of life, palliative care, onco-genetics, nutrition, and patient empowerment. SHARE is led by Anne Bredart and Dr. Sylvie Dolbeault, researchers in psycho-oncology, authors of a large number of international publications and leaders of humanities and social science research projects within the various SIRIC programs (Site de Recherche Intégrée contre le Cancer or Integrated Cancer Research Institute)."

New imaging equipment for Institut Curie

The acquisition or renewal of functional or interventional imaging equipment enables better patient care by improving the quality of examinations. They complete the arsenal of techniques already available at Institut Curie.

**Interventional radiology on the rise**

Interventional radiology (IR) refers to procedures performed percutaneously with radiological guidance. Diagnostic IR corresponds to deep biopsies that collect tumor samples to characterize tumors and search for therapeutic targets. Its use is growing considerably in the activity of radiologists. Therapeutic IR replaces or complements conventional oncology treatments through various imaging-guided techniques (ablative therapy, radiofrequency or cryotherapy, cementoplasty, neurolysis, etc.). In 2021, Institut Curie acquired mobile cryotherapy equipment for patients in STARTER programs with Institut Curie’s sports partners either in the hospital or remotely.

In 2021, a cooperation protocol was set up between the Paris site and the Paris-Nord Est hospital group (Aulnay-sous-Bois, Montreuil and Montfermeil) for the care of patients with gynecological and breast cancer. A radiologist has been hired on a part-time basis in both establishments. Every fortnight, surgeons, medical oncologists, radiotherapists and radiologists meet by videoconference to establish the right indications and define the best treatments for the patients.

**The activity of diagnostic interventional radiology is growing steadily and now represents a very important part of the activity of radiologists. This activity has now reached very high levels and is very important for research, whether it involves the detection of therapeutic targets or more fundamental research on adult and child cancers.**

Dr. Hervé Brisse,
Head of the Medical Imaging department

**3,000**

BREAST BIOPSY

PROCEDURES

per year over both sites

**2,000**

DIAGNOSTIC BIOPSY

not including senology
After a decade of growth, Institut Curie intends to accelerate the transfer of research results to companies. Its objective? To develop ever more therapeutic innovations for the benefit of cancer patients.

Since 2016, Institut Curie has had an ambitious policy for the detection and the fruition of discoveries, favoring research partnerships with industry and providing greater incentives for the creation of start-ups. This innovation acceleration strategy is supported by the Technology Transfer Office (TTO), which is genuinely involved in all stages of technology transfer. Everything is done to identify at a very early stage the scientific projects at the origin of future therapeutic innovations and technologies that could be developed by Institut Curie.

A virtuous circle for innovation

Innovation grows from fertile soil thanks to the excellence and creativity of Institut Curie’s fundamental, translational, and clinical research, which is capitalized on by the teams of the Technology Transfer Office. To make researchers aware that innovation can come from their daily practices, an internal network of tech transfer ambassadors (TTA) has been set up. This group now has 19 members from a wide variety of units in the Research Center and departments within the Hospital Group. Among them are project leaders, LabEx managers and volunteer engineers, who will be trained and informed, and are now the Technology Transfer Office’s intermediaries on the ground. Close to their teams, they disseminate key information to them on transfer procedures and opportunities for tender development, and report on projects in progress in the laboratories, thus facilitating their analysis and early monitoring by the Technology Transfer Office. Intellectual property expertise at Institut Curie, a key element in outpatient and industrial partnerships

In addition to its recognized successes in transferring technologies from Institut Curie to the economic world, the TTO also focuses on the downstream part of this process. Our ambition is to strengthen the detection and support for project fruition. Thanks to the deployment of this network of tech transfer ambassadors, we are in daily contact with innovation stakeholders at Institut Curie’s sites. This is one of the reasons for the success of our strategy. The number of patents granted each year is also a demonstration of our efficiency. It is worth noting that 70% of our over 30-month-old patent portfolio has been transferred to an industry.”

Cécile Campagne,
Director of Technology Transfer Office
Deputy Director of Carnot Curie Cancer

United in the fight against cancer

Outstanding results in innovation and industrial partnerships
The work of Eliane Piaggio’s team, which is in our DNA! D3i was created in 2018 to formalize everything we were doing in terms of innovation in the Hospital Group, in conjunction with the Research Center.

As the sponsor of the PEP-Therapy clinical trials at Institut Curie, we wrote the protocol and included the patients. Institut Curie offers an extraordinary environment for drug developers, as we are able to set up projects from start to finish.”

Prof. Christophe Le Tourneau
Head of the Department of Drug Development and Innovation (D3i)

Focus
Two in-house start-ups return to Institut Curie

Discovery, maturation, development, fundraising, drug candidate development etc.,: the road to the patient’s hospital bedside remains long. Once all these stages have been completed, some start-ups bring their project to fruition by carrying out their clinical trials within Institut Curie’s Hospital Group. PEP-Therapy, a biotechnology company specializing in the development of generating peptides as targeted therapies for the treatment of cancers, has obtained authorization from the French National Agency for the Safety of Medicines (ANSM) to conduct clinical trials of its drug candidate, PEP-010. For its part, Onxeo entered into a research agreement to conduct a phase 1B/2 trial evaluating ASIDNA™ in combination with radiotherapy in the treatment of recurrent high-grade glioma in children. Finally, institut Curie was the first hospital in the world to acquire AVATAR MEDICAL’s virtual reality technology which facilitates surgical procedure and originated from research conducted at Institut Curie by the team of the late Maxime Dahan and Mohamed El Beheiry and Jean-Baptiste Masson’s team at Institut Pasteur.

PEP-Therapy is developing PEP-010, an innovative peptide used as a targeted therapy for the treatment of cancers, resulting from research conducted at Institut Curie. It seemed obvious to us to continue to collaborate with Institut Curie, a center of world-renowned excellence, to conduct our pre-clinical studies in relevant animal models. Institut Curie is now the main center where the Phase Ia/b clinical trial of PEP-010 is being conducted.”

Antoine Prestat,
CEO of PEP-Therapy

Some seven start-ups from Institut Curie’s incubation program have advanced in their development and they have been able to raise more than €140 million from investors. Among them, two spin-offs achieved record top league results in the two years following their creation: Egle Therapeutics (from the work of Eliane Piaggio’s team), which raised €40 million for the development of first-in-class immunotherapies, and Mnemo Therapeutics (from the work of Prof. Sebastian Amigorena’s laboratory), a biotech company dedicated to advanced CAR-T therapies, which achieved a record for a European start-up by raising €75 million. These exceptional amounts demonstrate the effectiveness of this original and integrated program as well as the interest of investors in innovations with high therapeutic potential emerging from Institut Curie. Ribonexus, a start-up created thanks to the combined scientific and medical expertise of its co-founders (Stephan Vagner, unit director at Institut Curie, and Prof. Caroline Robert, head of the Gustave Roussy Dermatology department), which develops new-generation treatments capable of overcoming resistance to targeted tumor cell therapies, has benefited from this exceptional dynamic around Institut Curie spin-offs by raising €4 million since it started.

Institut Curie was awarded the Carnot label in 2011, which has since been renewed twice, and is part of this network of excellence that supports academic research institutes in developing company partnership searches. Obtaining this label and the associated funding has helped generate new projects and raise the professional level of the development team. One example is Institut Curie’s internal development program ‘Cure Innov’, whose budget has been increased thanks to Carnot funding, allowing support for five innovative projects in 2021.

Working with a start-up «made in Curie» is in our DNA! D3i was created in 2018 to formalize everything we were doing in terms of innovation in the Hospital Group, in conjunction with the Research Center. At the end of 2021. This is a first in six years for Institut Curie. The recognition of this expertise testifies to the professionalization of the tech transfer professions within Institut Curie.

Carnot provides essential support
Institut Curie was awarded the Carnot Cure Cancer label in 2011, which has since been renewed twice, and is part of this network of excellence that supports academic research institutes in developing company partnership searches. Obtaining this label and the associated funding has helped generate new projects and raise the professional level of the development team. One example is Institut Curie’s internal development program ‘Cure Innov’, whose budget has been increased thanks to Carnot funding, allowing support for five innovative projects in 2021.

At least 224 jobs created between 2002 and 2021 in the 28 start-ups that have emerged from Curie’s incubation program

Raised €140 million for the development of first-in-class immunotherapies, and Mnemo Therapeutics (from the work of Prof. Sebastian Amigorena’s laboratory), a biotech company dedicated to advanced CAR-T therapies, which achieved a record for a European start-up by raising €75 million. These exceptional amounts demonstrate the effectiveness of this original and integrated program as well as the interest of investors in innovations with high therapeutic potential emerging from Institut Curie.

Some seven start-ups from Institut Curie’s incubation program are more advanced in their development and they have been able to raise more than €140 million from investors. Among them, two spin-offs achieved record top league results in the two years following their creation: Egle Therapeutics (from the work of Eliane Piaggio’s team), which
Institut Curie continues its international commitment

All over the world, Institut Curie contributes to the fight against cancer. It welcomes patients and carers from all continents and carries out training and support activities abroad to develop the care solutions for cancer care.

“Confronted with the global challenge of cancer, the number of cases of which could, according to the WHO, increase by 60% in the next 20 years. Institut Curie is forging partnerships with hospitals, carers, and doctors throughout the world in order to share its know-how, expertise and knowledge,” explains Dr. Pierre Anhoury, Director of International Relations. Projects are multiplying on all continents, from Japan to Kazakhstan, via Colombia, Kuwait, Lebanon, Jordan, and Tanzania, where, since the end of 2019, Institut Curie has been a consultant for the French Development Agency (FDA). The Tanzania Comprehensive Cancer Project provides for the construction of care facilities, the training of health workers specialized in cancer and the purchase of radiotherapy equipment.

Despite the health crisis, Institut Curie has remained true to its tradition of welcoming patients from all over the world for cancer treatment. In 2021, 286 patients with complex or rare forms of cancer or who had problems accessing care in their own country were able to benefit from these services. Their chances of recovery have been improved by this care in France, within the institute.

In addition to its healthcare activities, Institut Curie’s international reputation is also reflected in the excellence of its scientific research. Institut Curie’s research center attracts many young researchers from all over the world to its laboratories. 74 nationalities were represented in 2021. Some 68% of post-docs and 42% of PhD students were foreign.

Donors, always on hand

In 2021, despite the health crisis, Institut Curie’s donors have been present and loyal. Their generosity is at the heart of the Hospital Group and the Research Center’s operations. By supporting scientific and medical innovation, they help to develop research and improve patient care. Thanks to these donors, many projects have been supported in the fields of care, research, and the transmission of knowledge. Here is a look at two of them.

Care: adapted physical activity accessible to all

Adapted physical activity is now considered a non-drug treatment for cancer. It helps patients to cope better with treatments and to limit relapses. Some patients, because they live far from a sports center or have time constraints, cannot participate in these on-site workshops. This was especially the case during the Covid crisis. In 2021, the gifts received made it possible to develop remote adapted physical activity workshops, via a smartphone application in partnership with KIPLIN, a digital application publisher specializing in the health sector. This is a major step forward in enabling all patients to access the benefits of physical activity.

Research: state-of-the-art equipment for translational research

Researchers from the Translational Imaging in Oncology laboratory (Inserm U1288), headed by Irène Buvat, Director of Research at Institut Curie, have acquired a preclinical PET (Positron Emission Tomography) scanner. This acquisition is a major step towards validating new radiopharmaceutical compounds targeting the functions of molecules associated with cancer and thus obtaining precise images to better understand them.
Large scale fundraising

A DAFFODIL AGAINST CANCER

The 17th edition of the national campaign “Une Jonquille Contre le Cancer (Great Daffodil Cancer Appeal)”, which ran from 9 to 21 March 2021, adapted to the health crisis and had to reinvent itself with an entirely digital edition. In 2021, the campaign particularly wanted to highlight the importance of artificial intelligence and big data to accelerate research and innovation in cancerology. Thanks to everyone’s dedication: volunteers, partners, sponsors, associations, and local authorities, this fundraising campaign exceeded the initial target of 700,000 euros, reaching a record 892,000 euros in gifts.

RACE OF LIGHTS: LIGHT UP THE NIGHT SKY AGAINST CANCER

5,000 runners and walkers came together in name of solidarity on Saturday 20 November 2021 in the heart of Paris to light up the night sky against cancer. After a 2020 edition only in connected mode, due to the pandemic, the light bearers were happy to meet up again at the Place de l'Hôtel de Ville in Paris. They walked or ran along the banks of the Seine in a united team spirit. Some 100 companies had also formed teams of sports men and women. This tremendous coming together raised €130,000 in gifts to support research for the benefit of all patients.

3rd edition of the Open Golf Tournament

For its 3rd edition, Institut Curie Golf Open at the Golf de Joyenval (78) took place on 24 October 2021, under the patronage of actor Roschdy Zem. This competition attracted some 72 participants from 9 companies in support of the fight against breast cancer. The 133,000 euros raised went to support the TEP-FES project of Dr. Audrey Bellesoeur and Dr. Romain-David Seban. The aim? To develop a new imaging technique that limits the need for biopsies in the treatment of women with metastatic breast cancer.

FUNDRAISING

Mobilized partners

Gamers take action against pediatric cancer

Live from Rennes, hundreds of fans of the video game “The Legend of Zelda” took part from 9 to 11 July 2021 in a live marathon broadcast on the Twitch streaming platform. The principle of this virtual event was to play for 48 hours non-stop in order to raise public awareness and encourage viewers to support research against childhood cancer at Institut Curie. 15,000 € were collected thanks to this first mobilization of young gamers.

The Solitaire du Figaro sailing race with Mutuelle Bleue

Institut Curie participated for the first time in the Solitaire du Figaro, thanks to its historical sponsor Mutuelle Bleue. At the helm of “Mutuelle Bleue pour Institut Curie”, an orange and blue Beneteau 3 sailboat, skipper Corentin Horeau set off from Saint-Nazaire on 22 August 2021 for the 52nd edition of the race, finishing one month later in 8th place.

The aim of this partnership was to raise public awareness of the 40% of cancers that can be prevented - a real public health issue.

The Hubert Gouin - Childhood and Cancer Association was created 18 years ago, when my son Hubert died of neuroblastoma. By building a discreet network of eminent personalities from the scientific and medical world, we have organized numerous events and have been able to raise 3 million euros for research into pediatric oncology. As a member of the GRAVIR collective, we have been long-time partners of Institut Curie. The medical and nursing teams of its SIREDO[1] center are dedicated to the care of children and young adults suffering from cancer and accompany the young patients and their families with professionalism and empathy during these very difficult times. The association is very involved in the financing of the MICCHADO trial, whose objective is to better understand and characterize resistance to treatment of certain cancers in children. This is a real hope for young patients with ‘high risk’ cancers.”

Anne Gouin, President of the Hubert Gouin - Enfance et Cancer association (Childhood and Cancer association)

The Hubert Gouin - Childhood and Cancer Association is an integrated care and a research center created by Institut Curie to optimize the care of children, adolescents, and young adults.

(1) SIREDO (Care, Innovation & Research in Childhood, Adolescent and Young-Adult Oncology) is an integrated care and a research center created by Institut Curie to optimize the care of children, adolescents, and young adults.
100 years: the Musée Curie at the heart of a double anniversary

Through its publications, its cultural program, and the various events it hosts in its rooms or broadcasts online, the Musée Curie (Curie Museum) contributes to perpetuating the scientific heritage of the Curie family. As such, 2021 was a year rich in celebrations.

100 years of the Fondation Curie
For this anniversary, the Musée Curie produced an entire book “1921-2021, de la Fondation à l’Institut Curie” (1921-2021 from its foundation to Institut Curie) dedicated to the history of the institution and distributed to staff and institutional partners. This book was then turned into an exhibition of 14 panels, presented at the three Institut Curie sites and redesigned in an itinerant version for the United States. The museum also hosted the filming of the documentary “Fondation Curie: 100 years of generosity against cancer”, offered as a private streaming show to schools. In addition, the museum took part in several radio broadcasts to publicize the museum, its collections, and the history of radioactivity.

In addition to this mission of transmission, the Musée Curie is also responsible for the conservation of the heritage linked to this scientific adventure. Its action is part of a wider reflection on the need to pass on this memory and all the equipment used at the time, while taking into account the radioactive aspects and the evolution of the regulations. For example, a radium «emanator» was identified in a private home. Once it had been decontaminated, an operation carried out in partnership with ANDRA(2), it was able to join the collections. Finally, some documents were acquired by the Musée Curie, including three letters from Pierre Curie, as well as photographs and old registers.

(1) The National Institute of Nuclear and Particle Physics (IN2P3) is one of the largest CNRS institutes, to which the Musée Curie is attached as a support and research unit.

Discovering the museum and explaining radioactivity
Throughout the period of closure imposed on cultural establishments due to the health crisis, the museum team reinvented its activities towards digital productions to enable people to discover the museum from a distance: a dozen videos were put online as well as a recording of the storytelling show «Marie Curie, radium magician», offered as a private streaming show to schools. In addition, the museum took part in several radio broadcasts to publicize the museum, its collections, and the history of radioactivity.

In addition to this mission of transmission, the Musée Curie is also responsible for the conservation of the heritage linked to this scientific adventure. Its action is part of a wider reflection on the need to pass on this memory and all the equipment used at the time, while taking into account the radioactive aspects and the evolution of the regulations. For example, a radium «emanator» was identified in a private home. Once it had been decontaminated, an operation carried out in partnership with ANDRA(2), it was able to join the collections. Finally, some documents were acquired by the Musée Curie, including three letters from Pierre Curie, as well as photographs and old registers.

“100 years of the Fondation Curie produced an entire book “1921-2021, de la Fondation à l’Institut Curie” (1921-2021 from its foundation to Institut Curie) dedicated to the history of the institution and distributed to staff and institutional partners. This book was then turned into an exhibition of 14 panels, presented at the three Institut Curie sites and redesigned in an itinerant version for the United States. The museum also hosted the filming of the documentary “Fondation Curie: 100 years of generosity against cancer”, offered as a private streaming show to schools. In addition, the museum took part in several radio broadcasts to publicize the museum, its collections, and the history of radioactivity.”
Renaud Huynh,
Director of the Musée Curie (Curie Museum)
Public grants play an important role in Institut Curie’s total funding, but private funds from public generosity, sponsorship, or the proceeds from the exploitation of its discoveries ensure its independence and are a driving force for innovation in the fight against cancer.

**Hospital Group resources**
- Health insurance as a private health establishment of collective interest (Easic) via activity-based pricing (T2A), the contribution to missions of general interest and aid for contractualization (Migac).
- Invoicing of care to non-insured patients (particularly patients from outside the European Union), co-payments and fixed daily rates (with no remaining costs for insured patients).
- Industrialists, sponsors, charities and public or semi-public organizations for clinical research and innovation.
- Generosity of the public (gifts and bequests).

**Research Center resources**
- Research organizations (CNRS, Inserm, universities): part of the personnel, operating or investment costs.
- Annual grant from the Ministry of Higher Education, Research, and Innovation.
- Public or semi-public funding in response to calls for tender: Agence nationale de la recherche (ANR), Institut national du cancer (INCa), Conseil régional d’Île-de-France, European Research Council (ERC) and European Commission.
- Private funding: patrons, charities (Ligue contre le cancer, Fondation ARC pour la recherche sur le cancer, Fondation pour la Recherche Médicale, etc.).
- Industrialists: within the framework of licenses, collaborations, or partnerships.
- Public generosity: gifts and bequests.

**Head Office resources**
- Financial income linked to Institut Curie’s cash flow. By maintaining a certain cash flow threshold, Institut Curie can finance its support and administrative functions by limiting its recourse to public generosity.
- Public generosity and CNRS finance the Musée Curie, the foundation’s social mission.
- Proceeds from valorization.
- Income from international consultancy activities.

**Asset management**

**INTANGIBLE ASSETS**
Institut Curie holds a portfolio of trademarks and patents. The latter protects inventions resulting from research carried out within the Foundation. These assets are not capitalized in the balance sheet. The exploitation rights attached to the patents are granted to third parties (industrialists, biotechnology companies) through the granting of exploitation licenses.

**REAL ESTATE ASSETS**
Institut Curie owns some of the buildings on the three sites in Paris (75), Orsay (91) and Saint-Cloud (92) where its social missions are carried out. Additional premises are leased to accommodate tertiary activities. Institut Curie does not own any investment property.

**OTHER FIXED ASSETS**
In most cases, Institut Curie owns the assets required for its activities, including heavy healthcare equipment and research apparatus. Exceptions include four items of radiotherapy equipment and two items of imaging equipment which were leased.

**FINANCIAL ASSETS**
Composed of a portfolio of investment securities, these financial assets aim to ensure the long-term viability of Institut Curie’s activities, while providing annual resources to ensure its general interest missions.
Their management is governed by a reference framework that was updated following the implementation of Institut Curie’s new statutes in 2018. In compliance with the basic principles of prudence, a wide diversification of the type of products and investment supports is systematically sought. The securities portfolio is managed by the Executive Board, which has set up a Finance Committee to monitor investments and make recommendations.
The management of medium and long-term assets is delegated to service providers which are selected following consultations.
Cash management remains in-house.
The recently initiated policy of socially responsible investment is continuing, as is the diversification into real estate through the acquisition of shares in real estate investment trusts (REITs).
The annual financial management report, as well as the management rules and investment strategy, with an indication of the associated risks, are submitted annually to the Supervisory Board for approval.
The governance of Institut Curie is based on a Supervisory Board, a Scientific Council, a Board of Directors and three entities: the Hospital Group, the Research Center, and Head Office.

**Supervisory Board**
- 18 MEMBERS
  - (+ 6 members in an advisory capacity)
  - Chairman: Daniel Thierry

**Scientific Advisory Board**
- 18 MEMBERS
  - Chairman: Prof. Edith Heard

**Executive Board**
- 3 MEMBERS
  - Prof. Djillali Annane, Prof. Dominique Deville de Penière and Hervé Le Floc’h
  - Chairman: Prof. Thierry Philip

**The Supervisory Board**
The main task of the Supervisory Board is to supervise the management bodies and to ensure the proper management of the Executive Board. It is assisted by 3 ad hoc committees.

**The Scientific Advisory Board**
- is composed of international experts - particularly in the field of cancer research - from outside of Institut Curie. It provides strategic advice on the institute’s major orientations and activity programs.

**The Executive Board**
is responsible for the administration and management of Institut Curie in conjunction with the directors of the Hospital Group, the Research Center, and the Head Office. It is vested with the broadest powers to act in all circumstances on behalf of the foundation.

**The entity directors**
are appointed by the Executive Board after approval by the Supervisory Board. The three entity directors define the strategy of their entity, which they propose to the Executive Board. They are responsible for managing human resources and authorizing expenditure corresponding to the part of the institut budget relating to their area.
The Scientific Advisory Board

- Prof. Edith Heard - Chairman of the Scientific Advisory Board - EUROPEAN MOLECULAR BIOLOGY LABORATORY (EMBL), HEIDELBERG, GERMANY
- Prof. Ian Mattaj - Chairman of the Scientific Advisory Board (until July 2021) - Director of Human Technopole – Milan (Italy)
- Prof. Anton Berns - THE NETHERLANDS CANCER INSTITUTE, AMSTERDAM, NETHERLANDS
- Prof. Robert G. Bristow - MANCHESTER CANCER RESEARCH CENTRE (MCRC), MANCHESTER, UNITED KINGDOM
- Prof. Pascale Cossart - THE NETHERLANDS CANCER INSTITUTE, AMSTERDAM, NETHERLANDS
- Prof. Alan Fischer - HOSPITAL UNIVERSITAIRE NECKER ENFANTS HÉRAUDES, PARIS, FRANCE
- Prof. Eileen Furlong - EUROPEAN MOLECULAR BIOLOGY LABORATORY (EMBL), HEIDELBERG, GERMANY
- Dr. Luca Gianni - FONDAZIONE MICHELANGELO, MILAN, ITALY

Distinguished people

- Geneviève Almouzni - Chevalier des Palmes académiques 2021 Nuclear Dynamics unit (CNRS UMR6064 / Sorbonne University)
- Chloé-Agathe Azezcoct - First prize winner of Young AI Woman Engineer organized by Tilder in partnership with France Digital and Challenges Cancer and Genome unit: Bioinformatics, Biostatistics and Epidemiology of Complex Systems unit (Inserm U960 / Mines ParisTech)
- Patricia Basset-Roussely - Chevalier de l’ordre national du Mérite Physical Chemistry unit (CNRS UMR168 / Sorbonne University)
- Carole Boulec - Appointed Associate Professor in Pathological Medicine at the University of Paris Interdisciplinary Department of Supportive Care in Oncology
- Déborah Bours - Grand Prix de la Fondation pour la Recherche Médicale 2021 Genetics and Developmental Biology unit (CNRS UMR 3215 / Inserm U934 / Sorbonne University)
- Irène Buvat - Awarded the Hal Anger Lectureship Award by the Society of Nuclear Medicine and Molecular Imaging (SNMMI) 2021 Laboratory of Cancer Imaging in Oncology unit (Inserm U1288)
- Aleksandra Chikina - Les Grandes Avancées Françaises en Biologie from the Académie des Sciences Immunity and Cancer unit (Inserm U962)
- Mussa Danda - Chevalier de la Légion d’honneur (Posthumous recognition) Plasticity unit (Inserm U960)
- Eléonore Morin - 3rd prize for Oral Presentation from the SIAR meeting (French Society of Anesthesia & Intensive Care Medicine) Anesthésie et ICU-Pain Department
- Anne Paolotti - Chevalier de la Légion d’honneur Cell Biology and Cancer unit (CNRS UMR144 / Sorbonne University)
- Judith Pineau - L’Oréal-Unesco Young Talents France 2021 for Women in Science Award 2021 Constitutional Genetics unit in the Diagnostic and Theranostic Medicine Division

Diagnostic and Theranostic Medicine Division

- Diagnostic and Theranostic Medicine - Prize for the second inclusion center competing in the Data Challenge 2020
- Yoanеl Prezado - Dr and Mme Peyré prize from the Académie des Sciences
- Francoise de la Légion d’honneur Research Center management
- Gaëa Raposo - Grand Prix Raimond Caustain – Société Française des Microscopies
- Claudia Rivera - Best poster and best article award from the European Macrophage and Dendritic Cell Society
- Nicolas Servant - Prix Curie 2021 CurieCore Technology Platforms Joint Director of the Research Center’s bioinformatics platform
- Jenny Singh - Best flash talk at the 5th Curie international course on Post-transcriptional Gene regulation and 3rd course on Genome Instability and Human Disease
- Yolanda Soprano - Prix Curie 2021 Best flash talk at the 5th Curie international course on Post-transcriptional Gene regulation and 3rd course on Genome Instability and Human Disease
- Céline Vallat - Innovators Award 2021 for the Ile-de-France region
- Jean-Léon Maitre - Prix Curie 2021 Best flash talk at the 5th Curie international course on Post-transcriptional Gene regulation and 3rd course on Genome Instability and Human Disease
- Sophie Loeillet - Prix Curie 2021 Best flash talk at the 5th Curie international course on Post-transcriptional Gene regulation and 3rd course on Genome Instability and Human Disease

GOVERNANCE

DISTINCTIONS
Thank you to our 242,000 donors

COMMEMORATIVE PARTNERS OF THE MC21 CAMPAIGN
Banque Transatlantique
Bessé AssurGestion
Bristol Myers Squibb
Bouygues
Borama
Caravelle

CORPORATE PATRONS OF THE MC21 CAMPAIGN
Fondation L’Occitane
Fondation Entreprise MACFS
Fondation Crédit Agricole
Elevate SAS
Éditions Francis Lefebvre
Domaine des Conquêtes
DLSOFTW
Crédit Agricole d'Île-de-France
Crédit Agricole and Investment Bank
Carrément Fleurs
Bioderma
Banque Palatine
Axa Atout Cœur
Alternet

PATRONS AND PARTNERS
Alain lard
Aliment
Axia Atout Cœur
Banque Palatine
Bodorama
Camembert Fleurs
Casino
Compagnie des Fromages RichesMorts
Cora
Crédit Agricole and Investment Bank
Crédit Agricole d'Île-de-France
DLSOFTW
Domaine des Conquêtes
Éditions Le Flibuste
Elevage SAS
Fondation Crédit Agricole
Fondation Crédit Coopératif
Fondation Entreprise MACFS
Fondation L'Occtane
Fondation de dotation Martine et Pascal Henry
Fondation DLM
Fonds de dotation Constellation
Fonds de dotation d'assurances
Fonds de dotation d'assurances
Fonds de dotation d'assurances
Fonds de dotation d'assurances
Fonds de dotation d'assurances
Mutuelle Bleue Gestion
Mutuelle Française-Normande SSAM
Nass France
Nemera
Novanov

SELF-HELP ORGANIZATIONS
20 Ans 1 Projet
À Chacun son Everest
Action Lésolecum
AFSM
Aldia
ASP Fondation
AVAC – Va voir le Chordome
Belle et Bien
Bouligue 92
Camé
Cassiopea
Cherub
Ciel
Coeur
CDLasso

DONOR ASSOCIATIONS AND ENTITIES
héaithmedia
Action solidaire à Sahore
Alexandre Vix
Alpha Charms
Amour d'enfants
Association Action récré
Association de commerçants du Pont Louis-Philippe
Association Fleur d’Île
Association Hubert Gouis
Association La Ville à la campagne
Association La Gialla
Association M à la vie avec Lisa
Association Olygoxyte
Association Papillon
Association Passion du chant
Association Rando Simounet
Association Vaincre avec elles
Association vendrée de lutte contre le cancer
Association Vinkings
ATISCAT
Au nom d’Andrela
Blue country live
CentraleGéplée
Club 41 Ballardville
Club 41 Charly
Club 41 Fontainebleau
Club 41 Mouex
Club 41 Rambouillet
COSEP
Colleges Base Madrid
Collectif des commerçants de Charpentier
Collectif les triplets
Commerçants St Chriaa
Conscience Sodex
Cour pour Curie à Marly-Mareil
École Notre-Dame de Sion
Ensemble combattants les cancers pédiatriques
ESP 65
Expression de femmes
Famille de Kilian
Fanny Chamy
FifiLob
Imagine for Margo

INSITUTIOINAL PARTNERS AND SUPERVISORY BODIES
Agence régionale de santé (ARS) de l'Ile-de-France
Assistance publique – Hôpitaux de Paris (AP-HP)
French National Center for Scientific Research (CNRS)
French National Cancer Institute (INCa)
French National Institute of Health and Medical Research (Inserm)
Institut Pasteur
INWS STM Georgy Farhat
La Jonquille de l'espoir
La petite école
La Ville de Moncontour
Les Bénévoles de Villennes
Les cavaliers contre le cancer
Les emplois
Les greniers
Les parents d’Oscar
La Ville de Moncontour
Les Bénévoles de Villennes
Les greniers
Les parents d’Oscar
La Ville de Moncontour
Les Bénévoles de Villennes
Les cavaliers contre le cancer
Les emplois
Les greniers
Les parents d’Oscar
La Ville de Moncontour
Les Bénévoles de Villennes
Les cavaliers contre le cancer
Les emplois
Les greniers
Les parents d’Oscar
La Ville de Moncontour
Les Bénévoles de Villennes
Les cavaliers contre le cancer
Les emplois
Les greniers
Les parents d’Oscar
La Ville de Moncontour
Les Bénévoles de Villennes
Les cavaliers contre le cancer
Les emplois
Les greniers
Les parents d’Oscar
La Ville de Moncontour

COMMUNICATIONS DEPARTMENT
Photo credits: Ackerman, Usual Charmant, France; Juany, Pedro Lombardi; Iris Manel, Thomas Salva, Thibaut Vison, Visit/Smiley/Twinkle/Shock; Shad47/Shock, Photographie Institut Cane, GIL, Design and production: W3F, thompsoncom.com – 2202_03108
Production: Logigraphie. This document is printed using vegetable-based inks on paper produced from sustainable resources.