



April 5th
2018

**FONDATION ARC
LÉOPOLD GRIFFUEL
SYMPOSIUM**

FONDATION ARC
POUR LA **RECHERCHE**
SUR LE **CANCER**



Reconnue d'utilité publique

The Fondation ARC Léopold Griffuel Award

Created in 1970, the Fondation ARC Léopold Griffuel Award is the most important prize in the field of cancer research in Europe. With a total value of €300,000, it rewards every year internationally renowned researchers whose work has led to major breakthroughs in cancer research.

The Fondation ARC Léopold Griffuel Award results from a bequest: Léopold and Alice Griffuel, determined to get involved in the fight against cancer, wished to reward the best cancer researchers with a prize endowed thanks to the incomes of two Parisian buildings they owned before passing them on to the association, now become a foundation.

The Fondation ARC Léopold Griffuel Award is accorded after an independent evaluation by an international scientific committee and a validation by the Board of Directors of the Fondation ARC. Since 2015, it has been divided into two categories: the Fondation ARC Léopold Griffuel Award for Basic Research (€150,000) and the Fondation ARC Léopold Griffuel Award for Translational and Clinical Research (€150,000).

Since its creation, 51 researchers from 11 different countries and from the most prestigious international research institutions have received the awards.



Members of the jury



Prof. Jules Hoffmann

(President of the jury / Nobel Prize in Physiology or Medicine 2011)

Institute of Molecular and Cellular Biology | Strasbourg, France

Prof. Jean-Yves Blay

Centre Léon Berard | Lyon, France

Prof. Dario Campana

National University Cancer Institute | Singapore

Prof. Edith Heard

Curie Institute | Paris, France

Prof. Jacques Samarut

École Normale Supérieure | Lyon, France

Program



2:15 pm - 2:45 pm: Welcome to participants

2:15 pm - 3:00 pm: Symposium Opening

- **Prof. Jules Hoffmann** (President of the jury, Institute of Molecular and Cellular Biology, Strasbourg, France)
- **Dr. Franck Dufour** (Fondation ARC Scientific director, Villejuif, France)

3:00 pm - 4:00 pm: Angiogenesis and cancer

3:00 pm - 3:15 pm: Introduction by Dr. Jo Bury

(Vlaams Instituut voor Biotechnologie – Leuven, Belgium)

3:15 pm - 4:00 pm: **Prof. Peter Carmeliet** (Catholic University of Leuven, Belgium)

...⇒ Angiogenesis revisited: role and therapeutic implications of endothelial cell metabolism

4:00 pm - 5:00 pm: Breakthroughs in breast cancer treatments

4:00 pm - 4:15 pm: Introduction by Pr. Yosef Yarden

(Weizmann Institute – Rehovot, Israel),

43th Fondation ARC Léopold Griffuel Award in Basic Research

4:15 pm - 5:00 pm: **Prof. Martine Piccart** (Institut Jules Bodet – Université libre de Bruxelles, Belgium)

...⇒ Lesson learned after two decades of international academic clinical research in breast cancer

5:00 pm - 5:30 pm: Coffee Break

5:30 pm - 6:30 pm: Targeted therapies and immunotherapies against melanoma

4:00 pm - 4:15 pm: Introduction by Dr. Sebastian Amigorena

(Institut Curie – Paris, France)

36th Fondation ARC Léopold Griffuel Award

5:45 pm - 6:30 pm: **Prof. Caroline Robert** (Gustave Roussy – Villejuif, France)

...⇒ Metastatic melanomas treatment: progress, challenges and hopes



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46th Fondation ARC Léopold Griffuel Award in Basic Research

Prof. Peter Carmeliet

Director of the Angiogenesis and Vascular Metabolism Laboratory of the Cancer Biology Institute at the Catholic University of Leuven (Belgium)

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Professor Peter Carmeliet is considered a leader in the field of tumor neoangiogenesis. Over the past decades, his work has led to several discoveries that affected both, basic and translational research, resulting in numerous therapeutic targets identification.

He obtained his MD in 1984, then his PhD in 1989 at the University of Leuven (Belgium). After two post-doctoral fellowships at Harvard University (Cambridge, USA) and at the Whitehead Institute (MIT, Cambridge, USA), he returned to Leuven where he became professor in 1998.

Throughout his career, he has devoted himself to the study of the mechanisms of angiogenesis. He notably highlighted the essential role of vascular endothelial growth factor (VEGF) in this phenomenon. His work has led to the development of several anti-angiogenic treatments based on VEGF inhibition, which are now commonly used in the treatment of many cancers. More recently, he has been interested in the role of placental growth factor (PlGF) in pathological neoangiogenesis. This work has led to the development of new therapeutic strategies based on the inhibition of PlGF action, as well as the creation of a start-up dedicated to these innovative treatments.

Prof. Carmeliet is now interested in endothelial cell metabolism during the development of blood vessels. He has recently discovered new therapeutic targets of high translational interest.

An impressive number of publications in high impact scientific journals and several awards has recognized his work.



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46th Fondation ARC Léopold Griffuel Award in Translational and Clinical Research

Prof. Martine Piccart

Associate professor of oncology at the Université libre de Bruxelles (Belgium) and head of the Department of Medicine at the Jules Bordet Institute.

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Professor Martine Piccart obtained her MD and then her PhD in 1993 at the Université libre de Bruxelles. After a post-doctoral fellowship in the United States at the New York Medical University, she returned to Brussels where she became head of the Department of Medicine at the Jules Bordet Institute in 2005.

Prof. Piccart has dedicated herself to translational and clinical research where she became a leader in the field of targeted therapies for breast and ovarian cancers. In particular, she has been actively involved in demonstrating the importance of trastuzumab in the adjuvant treatment of HER2+ breast cancer. It has also led to one of the first clinical trials using a biological marker for breast cancer management.

In addition to her research activities, she has also influenced the cancer research field by leading numerous cooperation and working groups on cancer at European and international levels, including the founding in 1996 of the Breast International Group (BIG). This initiative has now led to more than 50 clinical trials worldwide. Subsequently, she was also President of the ESMO (European Society for Medical Oncology) from 2012 to 2013 and President of the ECCO (European CanCer Organisation) from 2014 to 2015. She is currently recognized as a key figure in European and international clinical cancer research collaborations and has contributed to the publication of more than 500 articles.



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46th Fondation ARC Léopold Griffuel Award in Translational and Clinical Research

Prof. Caroline Robert

Professor of dermato-oncology and head of the dermatology unit at Gustave Roussy (Villejuif, France)

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Caroline Robert is professor of dermato-oncology and head of the dermatology unit at Gustave Roussy (Villejuif, France). She also co-leads a translational research team at the INSERM U981 unit. She obtained her MD at the Faculty of Medicine of Cochin Port-Royal in 1990. She was subsequently appointed assistant professor of dermatology at the Hôpital Saint-Louis (Paris, France) before joining the Harvard Medical School in Boston (Cambridge, USA) from 1996 to 1999. She finally obtained her doctorate in immunology in 2001 at Paris-Sud University. She became head of the dermatology department at Gustave Roussy in 2005 before being appointed professor in 2015. She is currently president of the melanoma group of the EORTC (European Organisation for Research and Treatment of Cancer).

Her career has led her to get interested in targeted therapies and particularly anti-BRAF and anti-MEK treatments. She was the principal investigator of the program that resulted in the approval of darafenib and trametinib. She has also been involved in large clinical studies on vemurafenib. She continues to work on targeted therapies with an interest in molecular mechanisms of resistance. She was thus able to demonstrate the role of translation protein, such as eIF4F, in the resistance to anti-BRAF and anti-MEK.

Professor Caroline Robert has also been heavily involved in the development of immunotherapy in melanoma. First, by defending the use of anti-CTLA-4 antibodies and, more recently, by conducting major clinical trials on the use of anti-PD-1 immunotherapies in combination or not with anti-CTLA-4 treatments. Her basic and clinical research skills have enabled her to improve understanding of melanoma while improving treatments and saving the life of numerous patients.

Professor Peter Carmeliet

Angiogenesis revisited: role and (therapeutic) implications of endothelial metabolism



Introduction by Dr. Jo Bury

Dr Jo Bury is managing director of VIB (The Flanders Institute of Biotechnology) that employs 1,500 scientists organized in

76 research group dedicated to the study of molecular mechanisms of growth and development of different organisms. VIB moves the boundaries of our knowledge through frontline basic research and translates the results into value for society through a proactive technology transfer process.

Dr Jo Bury obtained a master's degree in Pharmacy and a PhD in biochemistry at the University of Gent. He also passed a MBA degree at the Vlerick School for Management in Gent. After performing scientific research in the field of atherosclerosis during several years, he has made a career in science policy. He previously held the post of Operational Director of VLAB (Flanders' Action Programme on Biotechnology) and science advisor at federal and regional granting bodies. He has also been a board member and chair of several other research centers, committees and companies.

Through his work at the VIB and the performance of the scientists, this institute has become a center of excellence in life science research in Europe.

The past 40 years of research in the angiogenesis field have focused on identifying genetic signals such as VEGF and Notch, which determine vessel sprouting. However, the role and therapeutic potential of targeting endothelial cell (EC) metabolism have been largely overlooked. We have recently reported that ECs are glycolysis addicted and that glycolysis importantly co-determine vessel sprouting downstream of VEGF and other pro-angiogenic signals. In addition, we documented that ECs are rather unique in utilizing fatty acid derived carbons for the de novo synthesis of deoxyribonucleotides for DNA synthesis during EC proliferation when vessels sprout. Moreover, targeting (blocking) glycolysis and fatty acid oxidation inhibit pathological angiogenesis and induce tumor vessel normalization (thereby reducing metastasis and improving chemotherapy), suggesting that these metabolic pathways are new targets for anti-angiogenic drug development without evoking systemic side effects. Furthermore, lymphatic ECs differ from other EC subtypes in their metabolic requirements for lymphangiogenesis. Since many of these metabolic targets are pharmacologically druggable, these metabolic pathways represent a new promising target for therapeutic anti-angiogenesis.

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Professor Martine Piccart

Lessons learned after 2 decades of international academic clinical research in breast cancer (BC)



Introduction by Prof. Yosef Yarden

Professor Yosef Yarden leads the Department of Biological Regulation at the Weizmann Institute in Rehovot (Israel). He dedicated himself to the study of growth factors and growth factor receptors in breast cancer progression.

After his doctorate at Weizmann Institute, he joined the team of Axel Ulrich in San Francisco (USA) who first discovered HER2 receptor. Then, he continued his postdoctoral training in Professor Robert Weinberg's laboratory at Whitehead Institute (USA). In 1989, he came back in Israel and established his own research laboratory focused on the role of growth factor receptors in breast cancer development. He isolated and identified several growth factors and their receptors. These proteins have been shown to be important therapeutic targets; their discovery led to the development of several drugs that are currently used in the treatment of breast cancer.

Professor Yosef Yarden is recognized as one of the leaders in the field of cancer biochemistry and cancerous cells proliferation mechanisms. He has published numerous high-level scientific articles and has been awarded several scientific awards, including the 43rd Fondation ARC Léopold Griffuel award for Basic Research.

The Breast International Group (BIG), founded in 1999, is today the largest academic network in the world dedicated to conducting research designed to accelerate and refine the use of anti-cancer treatments and diagnostic tools for the benefit of women and men with breast cancer (BC). BIG is the umbrella organization harnessing the efforts and supporting the activities of its nearly 60 national and international cooperative group members worldwide.

BIG's collaborative research model provides academic leadership in industry-sponsored randomized clinical trials. Some of these trials have successfully led to the rapid registration of new anticancer drugs with a significant impact on breast cancer mortality, such as the HERA trial, which contributed to the registration of adjuvant trastuzumab in many countries around the world in less than 4 years.

BIG also supports clinical trials sponsored by its academic member groups and facilitates collaboration between international researchers and the US cooperative groups: the SOFT and TEXT trials evaluating adjuvant endocrine therapies for 5,738 premenopausal women are an example of such a collaboration, which has helped clarify

Professor Caroline Robert

Metastatic melanoma treatment: progresses, challenges and hopes



Introduction by Prof. Sebastian Amigorena

Professor Sebastian Amigorena is an immunologist and cellular biologist, who focuses his work

on molecular mechanisms of immune reaction. He studies the initiation of immune responses by dendritic cells and characterized the intracellular pathways necessary for immune recognition. He has been awarded the 36th Fondation ARC Léopold Griffuel award in 2006.

He obtained his PhD in 1990 at Institut Curie (Paris, France) before joining Yale University (USA) in 1992 as a post-doctoral fellow, where he studied the cell biology of antigen presentation in B lymphocytes. He returned to France in 1995 to lead a team dedicated to cell biology and antigen presentation at Institut Curie. He finally became the director of the INSERM Unit "Immunity and cancer" in 2003. Through his work, he highlighted the essential role of exosomes in immune response and anti-tumor vaccination. He also studied the interactions between dendritic cells and T-Lymphocytes and proved their importance in anti-tumor immune reactions.

His work has led to a better understanding of the first steps of anti-tumor immunity and to the comprehension of immune system mechanisms. These discoveries actively participated to the development of cancer immunotherapy.

Therapeutic progress in metastatic melanoma have been the fastest among all cancers in the last ten years. The median survival of patients has more than doubled and some patients are definitely cured. These breakthroughs are based on the development and authorization of two therapeutic strategies: anti-BRAF and anti-MEK targeted therapies for melanoma with BRAF mutation and immunotherapies targeting immune checkpoints. These new therapies have quickly gone beyond the field of melanoma and are now used successfully against many other cancers.

However, these revolutionary treatments are not effective in all patients, and resistance appears either immediately (so-called primary resistance) or after a time when the patient responds to treatment (secondary resistance). Many of these resistance mechanisms, genetic or epigenetic, have been described, but they are far from being fully elucidated. Our main challenges today are to better understand them to better block them. This is the main objective of our research. In particular, we demonstrated that the protein complex involved in the control of translation initiation, eIF4F, plays an important part in the response to targeted therapies and immunotherapies.

These results offer promising perspectives for the identification of biomarkers of efficacy and resistance as well as for the development of new therapeutic strategies based on protein synthesis inhibitors in combination with standard cancer treatments.

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The ARC Foundation Léopold Griffuel Award Laureates

- 46th** **Prof. Peter Carmeliet** (*Basic Research Award*)
University of Leuven | Belgium
- Prof. Martine Piccart** (*Translational and Clinical Research Award*)
Université libre de Bruxelles | Belgium
- Prof. Caroline Robert** (*Translational and Clinical Research Award*)
Gustave Roussy | Villejuif | France
- 45th** **Prof. Riccardo Dalla-Favera** (*Basic Research Award*)
Institute for Cancer Genetics | Columbia University | New York | USA
- Prof. Richard Marais** (*Translational and Clinical Research Award*)
CRUK Manchester Institute | UK
- 44th** **Dr. Olivier Delattre** (*Basic Research Award*)
Curie Institute | Paris | France
- Prof. Michel Attal** (*Translational and Clinical Research Award*)
IUCT Oncopole | Toulouse | France
- 43rd** **Dr. Yosef Yarden** (*Basic Research Award*)
Weizmann Institute | Rehovot | Israel
- Prof. Brunangelo Falini** (*Translational and Clinical Research Award*)
University of Perugia | Italy
- 42nd** **Prof. Jiri Lukas**
Novo Nordisk Foundation | Center for Protein Research -
Copenhagen | Denmark
- 41st** **Prof. Guido Kroemer**
Gustave Roussy | Villejuif | France
- 40th** **Prof. Hans Clevers**
Hubrecht Institute | Utrecht | Netherlands

- 39th** **Prof. Hugues de Thé**
Saint Louis Hospital | Paris | France
- 38th** **Prof. Anne Dejean-Assémat**
Pasteur Institute | Paris | France
- 37th** **Prof. Carlo Croce**
The Ohio State College of Medicine | Columbus | USA
- 36th** **Dr. Sebastian Amigorena**
Curie Institute | Paris | France
- 35th** **Prof. Alexander Varshavsky**
California Institute of Technology | Pasadena | USA
- 34th** **Dr. Anita Roberts**
National Cancer Institute | Bethesda | USA
- 33rd** **Prof. Kari Alitalo**
Helsinki University | Finland
- 32nd** **Dr. Jacques Pouyssegur**
Antoine Lacassagne Center | Nice | France
- 31st** **Prof. Leeland Hartwell**
Fred Hutchinson Cancer Research Center | Seattle | USA
- 30th** **Prof. Thierry Boon-Falleur**
Ludwig Institute | Brussels | Belgium
- 29th** **Prof. Miroslav Radman**
Jacques Monod Institute | Paris | France
- 28th** **Prof. Gérard Orth**
Pasteur Institute | Paris | France
- 27th** **Prof. Pierre May**
Gustave Roussy | Villejuif | France

- 26th** **Prof. Pierre Potier**
Natural Product Chemistry Institute | Gif-sur-Yvette | France
- 25th** **Prof. Georges Mathé**
Paul Brousse Hospital | Villejuif | France
- 24th** **Prof. Samuel Broder**
National Cancer Institute | Bethesda | USA
- 23rd** **Prof. Jérôme Lejeune**
Jérôme Lejeune Institute (previously Progenesis Institute) | Paris | France
- 22nd** **Prof. Umberto Veronesi**
National Cancer Institute of Milan | Italy
- 21st** **Prof. François Cuzin**
Nice University | France
- 20th** **Prof. C. Everett Koop**
Surgeon General (1981 - 1989) | USA
- 19th** **Prof. Steven A. Rosenberg**
National Cancer Institute | Bethesda | USA
- 18th** **Prof. Pierre Chambon**
Institute of Genetics and Molecular and Cellular Biology | Illkirch | France
- 17th** **Prof. M. Antony Epstein**
University of Oxford | UK
- 16th** **Prof. Jean-Bernard Le Pecq**
Gustave Roussy | Villejuif | France
- 15th** **Prof. Michael Feldman**
Weizmann Institute | Rehovot | Israel
- 14th** **Prof. Robert Gallo**
National Institutes of Health - National Cancer Institute | Bethesda | USA

- 13th** **Prof. Dominique Stehelin**
Pasteur Institute | Lille | France
- 12th** **Prof. Hamao Umezawa**
Institute of Microbial Chemistry | Tokyo | Japan
- 11th** **Prof. Vincent De Vita**
National Cancer Institute | Bethesda | USA
- 10th** **Prof. Charlotte Friend**
Mount Sinai Hospital | New York | USA
- 9th** **Prof. Elisabeth Miller**
McArdle Laboratory for Cancer Research | University of Wisconsin | USA
- 8th** **Dr. Raymond Latarjet**
Curie Institute (previously Radium Institute) | Paris | France
- 7th** **Prof. Ludwig Gross**
Veterans Administration Hospital | New York | USA
- 6th** **Prof. Henry Kaplan**
Stanford University | USA
- 5th** **Sir Richard Doll**
University of Oxford | UK
- 4th** **Prof. Georges Klein**
Karolinska Institute | Stockholm | Sweden
- 3rd** **Dr. Howard M. Temin**
McArdle Laboratory for Cancer Research | University of Wisconsin | USA
- 2nd** **Dr. Georges Barski**
Gustave Roussy | Villejuif | France
- 1st** **Prof. Joseph Burchenal**
Memorial Sloan Kettering Cancer Center | New York | USA

The Fondation ARC



The Fondation ARC, recognized as a registered charity, is 100% dedicated to cancer research. Each year, more than 25 millions euros are allocated to research projects that bring hope to patients.

The Fondation ARC identifies, selects, funds and implements promising research programs in all fields of oncology (genetics, immunology, cell biology and metabolism, pharmacology, etc.), promoting multidisciplinary approaches: basic, translational and clinical research, epidemiology, human and social sciences.

These research programs aim to generate new knowledge, develop new concepts and propose new therapeutic solutions for adult and children patients. The Fondation ARC also acts to structure and foster the cancer research ecosystem.

The fight against cancer also requires high-quality information. The Fondation ARC provides the general public and healthcare professionals with tools to improve prevention, medical care and the understanding of the disease.

Guided by public interest and scientific excellence, entirely funded by its donors and testators generosity, the Fondation ARC is a catalyst for research; gathering stakeholders in the fight against cancer and directing research to speed up the development of effective applications for patients.

The Fondation ARC has been accredited by the “Don en confiance” control agency since 1999.



Deadline for
nominations:
June 30th, 2018

Information:
www.fondation-arc.org

47TH

**FONDATION ARC
LÉOPOLD GRIFFUEL
AWARDS**

**TWO AWARDS OF €150,000 EACH
REWARDING MAJOR BREAKTHROUGHS IN
CANCER RESEARCH**

Basic research | Translational & Clinical research

The Fondation ARC Léopold Griffuel Award is the most important prize in the field of cancer research in Europe. Since 1970, it rewards scientists and physicians that have brought an important contribution to better understand, diagnose, cure and prevent cancers. It has been created in accordance with the will of the late Mrs Griffuel by bequest, in honor and memory of her late husband, Mr Léopold Griffuel.

FONDATION ARC
POUR LA **RECHERCHE**
SUR LE **CANCER**



Reconnue d'utilité publique



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