

LEFOULON-DELALANDE FOUNDATION

The 2010 Grand Prix Scientifique has been awarded to

PROF. MICHEL HAÏSSAGUERRE

Director of the Department of Cardiac Arrhythmia
at the University Hospital of Bordeaux



FONDATION
**LEFOULON
DELALANDE**
INSTITUT DE FRANCE

The Lefoulon-Delalande Foundation's **Grand Prix Scientifique**, worth **500,000 Euros**, is intended to reward a personality in the world of science who has made a significant scientific contribution to physiology, biology or cardiovascular medicine.

The 2010 Grand Prix Scientifique has been awarded to the French research scientist, Michel Haïssaguerre, for his revolutionary discoveries in the field of cardiac arrhythmias and more particularly his work into the causes and treatment of atrial and ventricular fibrillations.

This prize will make it possible to fund the creation of **LIRYC – An Institute for Cardiac Rhythm Studies and Cardiac Modelling**, a project in which Michel Haïssaguerre is one of the main initiators. This global institution, which is devoted to the study of electrical malfunctions of the heart, could allow - by pooling the skills of various European laboratories - major progress to be made and the number of people suffering from this pathology to be reduced by many thousands.

The Prize will be awarded under the Cupola of the Institut de France

On Wednesday, June 9th, 2010, at 3pm

as will all the other scientific and cultural Grands Prix awarded by Institut de France foundations:

The Christophe and Rodolphe Mérieux, Louis D., NRJ and Simone and Cino del Duca Foundations



Michel Haïssaguerre was born in 1955 in Bayonne (France). With a Master's Degree in Human Biology, he obtained a PhD in Medicine in 1982. In 1984 he was appointed Senior Registrar at the Universities and Assistant Physician at the Bordeaux Hospitals and at the same time obtained a CES in Cardiology (a qualification awarded by universities to candidates who successfully complete a specialised study programme defined by a ministerial order and entitling the candidate to a qualification recognised by the French Medical Council). He is currently Professor at the Victor-Segalen University Bordeaux 2 and runs the Department of Cardiac Arrhythmia at the University Hospital of Bordeaux (Hôpital Cardiologique du Haut-Lévêque). The author of more than 400 publications and a member of various learned societies, he has received a number of prestigious awards such as the *Nylin Medal* from the Swedish Royal Society of Cardiology in 2002, the *Best Scientist Grüntzig Award* from the European Society of Cardiology in 2003, the *Pioneer Award* from the

North American Society of Cardiology in 2004, the *Mirowski Award* for the excellence of his work in clinical cardiology and electrophysiology in 2009 and the *Prix de Médecine Louis-Jeantet* in 2010.

Work into the origin and treatment of atrial and ventricular fibrillations

Atrial fibrillation is the chief cause of cardioembolic strokes. Michel Haïssaguerre studied the origin of such strokes and drew up a “**map of the heart**”. He was therefore the first to establish that electrical problems at the origin of the disease did not occur in the atrium, as it had long been thought, but further upstream in cells located in the external walls of the pulmonary veins. Confirmed by numerous clinics throughout the world, this discovery allowed a new therapy to be developed based **on excluding, by means of cryotherapy or radio frequency, the cells responsible** for atrial fibrillation. In 2009, 150,000 people benefited from this treatment of which the indications continue to expand.

Ventricular fibrillation is responsible for 80% of the cases of sudden death in adults (350,000 people/year in Europe). Michel Haïssaguerre and his team have researched the reason for this, again by means of mapping, despite difficulties due to the sudden nature of this disorder which requires immediate defibrillation by administering an electric shock. They have shown that these “**electrical tornados**” originate in **tissue referred to as ‘Purkinje’s tissue’**, which only accounts for a tiny fraction (2%) of the cardiac mass. Clinical trials have validated this discovery. **Thermoablation** concentrated on Purkinje’s cells completely removed the arrhythmia in patients, confirming these are indeed the cause and allowing innovative drug treatments to be envisaged targeting such cells.

LIRYC – Institute for Cardiac Rhythm Studies and Cardiac Modelling

The Grand Prix Scientifique will help to fund the creation of an **institute for research into disorders of the electrical system of the heart**, the LIRYC, at the Xavier Arnoz Hospital (Pessac). This is a project initiated by the University and the University Hospital of Bordeaux with the help of the Aquitaine Region and Bordeaux City Council. At the present time, France does not have **any national organisation** to carry out experimental, computational and biological imaging research specifically aimed at this pathology, while there are a number of laboratories scattered about Europe and, paradoxically, the disciplines involved are fields of excellence in France.

The project will involve setting up the scientific equipment our country is lacking (optical mapping, modelling, etc.), and linking it up with cardiology, imaging and modelling teams on an international scale, so as to create **an institute that is unique in Europe**.

The essential goal will be **to understand and detect/prevent cardiac fibrillations**. Any improvement, even of a modest nature (10-20%), in this pathology will reduce by many thousands the appalling number of victims and could help make major progress in medical research.

SOME FACTS ABOUT THE LEFOULON-DELALANDE FOUNDATION

The purpose of the Foundation, created in 2000, is to contribute to medical research by providing financial aid, by rewarding individual researchers or helping teams of researchers to continue their work, especially in the **field of cardiovascular diseases** (where possible affecting children) involving: Vascular, valve, cardiac or pulmonary replacement - biological or mechanical - gene or cardiovascular cell therapy, cardiovascular instrumentation, cellular differentiation and congenital malformations.

Therefore, every year it awards a **Grand Prix worth 500,000 Euros** to a personality in the world of science who has made a significant scientific contribution to physiology, biology or cardiovascular medicine. Every year it also grants postdoctoral fellowships to researchers working full-time in the field of cardiovascular medicine within a French research organisation.

The Foundation's Website: www.institut-de-france.fr/prixmecenat/lefoulon/index.html

Members of the Scientific Council

- Mr Alain Carpentier, Vice-President of the French Academy of Sciences, President
- Mr Kari Alitalo, a member of the Finnish Academy of Sciences
- Mr Michel Bertrand, Emeritus Professor at the University of Lille
- Mrs Margaret Buckingham, from the French Academy of Sciences
- Mr Giovanni de Gaetano, Director of the Research Laboratories and Training at the Catholic University of Campobasso (Italy)
- Mr François Gros, Permanent Honorary Secretary of the French Academy of Sciences
- Mr Michel Lazdunski, from the French Academy of Sciences and Director of the CNRS Institute for Molecular and Cellular Pharmacology
- Mr Claude Lenfant, Honorary Director of the National Heart, Lung and Blood Institute, National Institutes of Health (USA)
- Mrs Mona Nemer, Vice-President Research at the University of Ottawa (Canada) and a member of the Royal Society of Canada
- Mr Denis Noble, Director of Oxford University's Laboratory of Physiology
- Mr Bernard P. Roques, from the French Academy of Sciences and the Paris College of Pharmacy
- Mr David D. Sabatini, an associate member of the French Academy of Sciences and Director of the Department of Cellular Biology at the University of New-York (USA)
- Mr Bengt Samuelsson, an associate member of the French Academy of Sciences, awarded the Nobel Prize in medicine
- Mrs Doris A. Taylor, Bakken Chair and Director of the Centre for Cardiovascular Repair at the University of Minnesota (USA)

SOME FACTS ABOUT THE INSTITUT DE FRANCE

The Institut de France, also known as “the parliament of the learned”, brings together **five Academies**: The Académie Française, the Académie des Inscriptions et Belles-Lettres, the Académie des Sciences, the Académie des Beaux-Arts and the Académie des Sciences Morales et Politiques. Its non-profit mission is to contribute to the improvement and influence of humanities, sciences and the arts.

As an association, it houses **foundations** whose support from their administrative and financial structures allows them to play an essential role in modern patronage, through the award of grants and prizes.

The actions the foundations support cover a variety of fields, such as:

- **Scientific research**: rewarding established researchers, supporting young talents and laboratories.
- **Humanitarian action**: fighting against endemic illnesses and poverty
- **Cultural heritage**: conserving works of art, creating collections or supporting young artists
- **Education and training**: study or research bursaries
- **Sustainable or environmental development projects**: protecting rural and natural heritage

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