

**PRESS RELEASE**

**Geneva, January 26, 2010**

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**2010 LOUIS-JEANTET PRIZE FOR MEDICINE**

**The 2010 LOUIS-JEANTET PRIZE FOR MEDICINE is awarded to the French cardiologist MICHEL HAÏSSAGUERRE, professor of cardiology at the University Victor-Segalen Bordeaux 2 and head of the Department of Cardiac Arrhythmias of the University Hospital of Bordeaux, and to the British biologist AUSTIN SMITH, Medical Research Council professor at the Department of Biochemistry and director of the Wellcome Trust Centre for Stem Cell Research at Cambridge University .**

THE LOUIS-JEANTET FOUNDATION awards the sum of CHF 600'000 to each of the prize-winners for the continuation of their work, and CHF 100'000 for their personal use.

THE FOUNDATION distinguishes this year not only a biologist whose fundamental research will have important repercussions in the field of medicine, but also and for the first time a doctor whose clinical research has revolutionised the treatment of cardiac rhythm disorders.

**MICHEL HAÏSSAGUERRE is awarded the 2010 Louis-Jeantet Prize for Medicine for his work on cardiac fibrillation, notably for his discovery of the origin of atrial fibrillation, and for developing treatment that has already helped thousands of people in the world.**

He discovered that atrial fibrillation does not originate in the heart muscle, as had been thought for a long time, but outside the heart in the pulmonary veins. His research has led to the development of new treatment for this cardiac rhythm disorder, which consists of destroying or isolating the affected tissues using cryotherapy or ultrasound. The same original approach has been used for research into the causes of ventricular fibrillation, which is the principal cause of sudden death. The preliminary results offer hope for the treatment of this grave pathology.

Michel Haïssaguerre will use the prize money to finance equipment for the optical mapping and modelling experimental laboratory allowing him to continue his research on ventricular fibrillation.

**AUSTIN SMITH is awarded the 2010 Louis-Jeantet Prize for Medicine for his seminal contribution to understanding the mechanisms governing the renewal or differentiation of stem cells, a vital stage in the development of cell treatment.**

Austin Smith is considered to be one of the world-class specialists in embryonic stem cells. He showed how these pluripotent stem cells form at the embryonic stage, and how they could proliferate in a cell culture environment. His work guided cell therapy development, which is aimed at regenerating damaged tissues or organs.

Austin Smith will use the prize money to continue his work on stem cells. He plans to use embryos of rabbits and marmosets in order to establish whether the mechanisms leading to pluripotency, which he has shown to exist in rodents, are also to be found in other mammals.

THE AWARD CEREMONY will be held in Geneva (Switzerland) on Thursday, 22 April 2010.

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## MICHEL HAÏSSAGUERRE

Michel Haïssaguerre was born 1955 in Bayonne (France). He holds a Masters in human biology and earned his doctorate in medicine (1982) and his certificate in cardiology (1984). In that year he was named Senior Registrar at the Bordeaux University Hospital and medical assistant at the Bordeaux Hospitals. He is currently professor of cardiology at the University Victor-Segalen Bordeaux 2 and head of the Department of Cardiac Arrhythmias at the University Hospital of Bordeaux (Haut-Levêque Cardiology Hospital). Michel Haïssaguerre has authored a very large number of publications and is a member of various scientific societies. He has received numerous distinctions, and notably the Best Scientist Grüntzig Award from the European Society of Cardiology, in 2003, the Pioneer Award from the North American Society of Pacing and Electrophysiology, in 2004, and the Mirowski Award for his excellent work in clinical cardiology and electrophysiology, in 2009.

### Origin and treatment of atrial and ventricular fibrillation

Atrial and ventricular fibrillation are the most complex pathologies relating to cardiac rhythm. The former is the main cause of embolic cerebral vascular accidents. As for the latter, it is behind most cases of sudden death in adults, affecting 350'000 people every year in Europe.

First of all, Michel Haïssaguerre studied the genesis of atrial fibrillation. In creating a «heart map» he was the first to notice that the electrical problems causing the illness were not occurring in the atrium, as had been thought for a long time, but further upstream in the cells situated in external wall of the pulmonary veins.

This discovery was confirmed by numerous clinics across the world, and led to the development of a new treatment involving the ablation by cryotherapy or ultrasound of the cells causing atrial fibrillation. In 2009, 150'000 persons received this treatment, and the number of cases thus managed is growing constantly.

Michel Haïssaguerre and his team adopted this same original approach to look into the causes of ventricular fibrillation. Although in this case the heart mapping technique was more difficult due to the instantaneous nature of the disorder, which calls for immediate defibrillation using electric shocks, they achieved their goal. They demonstrated that these «electrical tornados» emanate from the tissue known as «de Purkinje», which only accounts for the tiniest fraction (2%) of the cardiac mass. The concept has since been validated in clinical trials on a few patients. Thermoablation focused on this tissue totally eliminated these patients' arrhythmias.

## AUSTIN SMITH

Austin Smith was born in 1960 on Merseyside (Great Britain). As a biochemist holding a doctorate in development genetics, he worked in the Department of Zoology at Oxford University prior to being named director of the Institute for Stem Cell Research at Edinburgh University in 1996. He is currently a Medical Research Council professor at the Department of Biochemistry and director of the Wellcome Trust Centre for Stem Cell Research at Cambridge University. The coordinator of major European projects, he is also a member of the Royal Societies of Edinburgh and London, as well as of the EMBO (European Molecular Biology Organization). In the year 2000 he won the Pfizer Academic Award for his pioneering work in the field of stem cells.

### The ground state of pluripotency

Embryonic stem cells are pluripotent, which means they are capable of developing differently so as to become the specialised cells of the heart, the skin, nerves or any other organ or tissue.

Austin Smith focused his work on describing, understanding and verifying this surprising faculty of embryonic stem cells, and has contributed to highlighting the molecular network that is the fundament of pluripotency. This led him to propose the hypothesis that a pluripotency «ground state» exists, where a naïve cell can proliferate and survive largely independently from its neighbours, but on the other hand is highly sensitive to any perturbation caused by external stimuli. He deduced that the disruption of this ground state, caused by a cascade of reactions involving specific enzymes (kinases), was at the origin of stem cells following differing paths of development.

These studies represent a vital stage in the development of cell treatment. Such regenerative medicine, as it is also called, could in the future enable stem cells to be used to regenerate damaged tissues or organs, and for treating various illnesses.

## THE LOUIS-JEANTET PRIZE FOR MEDICINE

Every year, the Louis-Jeantet Prize for Medicine distinguishes leading-edge researchers who are active in the European Council member countries.

Since its establishment in 1986, the Louis-Jeantet Prize for Medicine has been awarded to 70 researchers: 23 in the United Kingdom, 14 in Switzerland, 12 in France, 10 in Germany, three in the Netherlands, three in Sweden, two in Belgium, two in Finland and one in Austria. Their geographical distribution by country does not reflect the nationalities of the prize-winners - who can come from all over the world. It reflects the spread of the European centres of excellence in biomedical research.

The key research fields encouraged by the Louis-Jeantet Prize for Medicine are physiology, biophysics, structural biology, biochemistry, cellular and molecular biology, developmental biology and genetics.

As one of the best-endowed awards in Europe, the Louis-Jeantet Prize for Medicine fosters scientific excellence. It is not intended as the consecration for work that has been completed, but to encourage the continuation of innovative research projects with high added value and of more or less immediate practical significance in the treatment of disease.

Since 1986, a total sum of approximately CHF 48m has been awarded by the Foundation to the 70 prize-winners for the continuation of their work.

## THE LOUIS-JEANTET FOUNDATION

The aim of the Louis-Jeantet Foundation is to move medicine forward, and to defend the role and identity of European biomedical research vs. international competition. It is the posthumous work of Louis Jeantet, a French businessman and a citizen of Geneva by adoption. Established in Geneva (Switzerland), the Foundation commenced activities in 1983.

The Louis-Jeantet Foundation devotes some CHF 4.5m each year to promoting biomedical research. It invests this sum in equal proportions for European and for local research projects. Apart from awarding the Louis-Jeantet Prize for Medicine, the Foundation encourages teaching and the development of research at the Faculty of Medicine of the University of Geneva, as well as the synergy of competences between this faculty and the graduate schools and university hospitals of the Lake Geneva region.

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*The European Molecular Biology Organization (EMBO) and the Louis-Jeantet Foundation are cooperating to promote the leading-edge research work of the winners of the Louis-Jeantet Prize for Medicine. In this context, the EMBO Molecular Medicine will feature special contributions by the prize-winners in its April issue and sponsor the Louis-Jeantet Prize-Winners' Lectures at the EMBO Meeting 2010, in Barcelona, on 4-7 September.*

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**A more detailed summary of the prize-winners' work is available on request at [info@jeantet.ch](mailto:info@jeantet.ch).**

**For any further information you may require, please do not hesitate to contact:**

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[www.eurostemcell.org](http://www.eurostemcell.org) European Portal for Stem Cell Research (EuroStemCell)