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**PRESS RELEASE**

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**2012 LOUIS-JEANTET PRIZE FOR MEDICINE**

**The 2012 LOUIS-JEANTET PRIZE FOR MEDICINE is awarded to the German specialist in systems biology Matthias MANN, Director of the Department of Proteomics and Signal Transduction at the Max-Planck Institute of Biochemistry in Martinsried, and to the British biologist Fiona POWRIE, Sidney Truelove Professor of Gastroenterology at the University of Oxford and Head of the Experimental Medicine Division of the Nuffield Department of Medicine at the John Radcliffe Hospital, University of Oxford.**

The LOUIS-JEANTET FOUNDATION grants the sum of CHF 700'000 for each of the 2012 prizes, of which CHF 625'000 is for the continuation of the prize-winners' work and CHF 75'000 is for their personal use.

THE PRIZE-WINNERS are conducting fundamental biological research which is expected to be of considerable significance for medicine.

**MATTHIAS MANN is awarded the 2012 Louis-Jeantet Prize for medicine for his work on developments in mass spectrometry that have revolutionised the analysis of proteins and of their functions.**

The German researcher pioneered the use of mass spectrometry for the extremely precise study of proteins and their interactions. He has thus contributed to the emergence of a new field of research, namely proteomics. His work has significant therapeutic implications, as it permits the quantitative analysis of cancerous tumours that could improve the diagnosis and treatment of these diseases.

Matthias Mann will use the prize money to continue to apply proteomics to high precision analysis of cancerous tumours.

**FIONA POWRIE is awarded the 2012 Louis-Jeantet Prize for medicine for her work on the interactions between the bacterial intestinal flora and the immune system.**

The British biologist has shown why the immune system, the purpose of which is to defend the organism against pathogenic microorganisms, does not attack the numerous beneficial bacteria which inhabit the intestinal tract. Her work is opening up new perspectives for the treatment of chronic intestinal inflammatory diseases.

Fiona Powrie will use the prize money to continue her research into the interactions between the immune system and intestinal flora.

THE AWARD CEREMONY will be held on Thursday April 19, 2012, in Geneva (Switzerland).

## **MATTHIAS MANN**

A German and Danish resident, Matthias Mann was born in 1959 in Lingen (Germany). He studied physics and mathematics at the University of Göttingen (Germany), and received his doctorate in chemical engineering from Yale University (United States), under the supervision of John B. Fenn, winner of the Nobel Prize in Chemistry. On his return to Europe in 1989, he first worked as a post-doctoral Fellow then as a Senior Scientist in the Department of Molecular Biology at the University of Southern Denmark in Odense, before joining the European Molecular Biology Laboratory (EMBL) in Heidelberg, where he directed the Protein & Peptide Group. In 1998, he returned to Odense as a full Professor of Bioinformatics in the Department of Biochemistry and Molecular Biology at the University of Southern Denmark. Since 2005, he has held the position of Director of the Department of Proteomics and Signal Transduction at the Max-Planck-Institute of Biochemistry in Martinsried (Germany). In 2007 he was additionally appointed as Director of the Department of Proteomics, at the Novo Nordisk Foundation Centre for Protein Research, Faculty of Health Sciences, University of Copenhagen, Denmark.

Matthias Mann has authored or co-authored more than 440 publications, making him one of the most highly cited researchers worldwide. A member of EMBO (European Molecular Biology Organization) and of the Royal Danish Academy of Sciences, Matthias Mann has received numerous distinctions, particularly the Lundbeck and the Novo Nordisk Research Prizes, the Meyenburg Cancer Research Award, the Schelling and the Leibniz Prizes.

### **Mass spectrometry meets the proteome**

After the genome comes the proteome. Having decrypted the genetic heritage of numerous species including humans, biologists are now aiming at characterizing the totality of the proteins in a cell or an organism. Technically, this is an extremely difficult task.

Matthias Mann progressively succeeded in overcoming the obstacles and turned mass spectrometry (an analysis technique already widely used for detecting and measuring the structure of molecules by measuring their mass) into a highly effective tool for characterizing the proteome.

With his colleagues, he managed to extract the proteins from the gel used by biologists to separate these molecules, but which previously rendered analysis via mass spectrometry impossible. He then miniaturized electrosprays, a technique used for ionizing molecules, and thus considerably enhanced the sensitivity of the analysis. Lastly he used mathematical algorithms to identify protein fragments by comparing them with those already listed in databases. Thanks to this work, biologists can now routinely use mass spectrometry for the study of proteins.

Matthias Mann then built on this progress to achieve another step forward by developing the new and highly accurate SILAC method (Stable Isotope Labelling by Amino Acid in Cell Culture). This technique, which characterises the functions of proteins, has opened the way to many applications of proteomics.

## FIONA POWRIE

A British citizen, Fiona Powrie was born in 1963 in Luton (United Kingdom). She studied biochemistry at the University of Bath before undertaking a PhD in immunology in Don Mason's Laboratory in Oxford. Following postdoctoral studies in the United States with Dr. Robert Coffman, she returned to Oxford in 1996 to establish her own laboratory as a Wellcome Trust Senior Research Fellow. In 2009, she was appointed as the inaugural Sidney Truelove Professor of Gastroenterology at the University of Oxford. She is also Head of the Experimental Medicine Division of the Nuffield Department of Medicine at the John Radcliffe Hospital, University of Oxford.

Fiona Powrie is a Fellow of the Royal Society since 2011. She has already received numerous distinctions, notably in 2009 the Ita Askonas Prize, from the European Federation of Immunological Societies (EFIS) and the *European Journal of Immunology* (EJI), which is awarded to leading female immunologists.

### **The immune system and the intestinal flora**

In the view of Fiona Powrie, the digestive tract is really the "Wild West" for the immune system, which has to combat microbial pathogens while at the same time protecting the beneficial bacteria living in our intestines. A delicate balance exists between the system of defence and the intestinal flora which, if upset, results in intestinal inflammatory diseases.

Fiona Powrie identified certain regulatory T cells (Treg) that police the immune response in the intestine, thus preventing our defence system from attacking bacteria that are of benefit to us. Furthermore she demonstrated that Treg cell deficiencies can lead to chronic intestinal inflammatory disease. She also showed that in the intestine a delicate equilibrium exists between two types of T cells, one of which causes inflammation while the other can counter the process. Her work is opening up new perspectives for the treatment of chronic intestinal inflammatory diseases.

## 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.

Established in 1986, the Louis-Jeantet Prize for medicine has thus so far been awarded to 75 researchers: 24 in the United Kingdom, 14 in Switzerland, 12 in France, 12 in Germany, three in the Netherlands, three in Sweden, two in Belgium, two in Finland, two in Norway 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 diseases.

Since 1986, a total sum of approximately CHF 52m has been awarded by the Foundation to the 75 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. On the local level, 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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*Since 2010, 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 journal EMBO Molecular Medicine features special contributions by the prize-winners and sponsors the Louis-Jeantet prize-winners' Lectures at The EMBO Meeting.*

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

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

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