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## PROTEOMICS-PIONEER MATTHIAS MANN RECEIVES THE ERNST SCHERING PRIZE 2012

The Schering Foundation, Berlin, honors the biochemist for the development of novel methods for the analysis of proteins.



Prof. Dr. Matthias Mann,  
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On the 10<sup>th</sup> of September 2012 the Schering Foundation Berlin will award the **Ernst Schering Prize 2012** for internationally leading accomplishments in the area of medical, biological and chemical basic research to **Prof. Matthias Mann, director at the Max-Planck-Institute of Biochemistry in Martinsried**. He will receive the prize, which carries an award of 50,000 Euro, for his **seminal work exploring the proteome** – the complete complement of the proteins of an organism. Matthias Mann has revolutionized the methods that are used for the identification and characterization of proteins, by successfully transferring methods of the physical sciences – such as mass spectrometry – to the area of molecular biology.

Not genes but protein molecules, whose structures are laid down in the genetic material, are the real carriers of function in the cell. The analysis of proteins of organisms is therefore one of the most important tasks in biology and medicine. Matthias Mann's research is making it possible to analyze the *proteome* with the same efficiency that was previously reserved for the *genome* (the total genetic material of an organism). Applying and continuously refining methods of the physical sciences such as electrospray ionization and mass spectrometry to the analysis of biological systems, now enables comprehensive cataloging of proteins and their interconnections. The bioinformatic software algorithms that Matthias Mann has developed over the years are an important prerequisite for these developments. These developments are crucial foundations of proteomics, a new scientific field whose aim is the identification and quantification of proteins in an organism and of which Matthias Mann was one of the founders. A goal of proteomics is to chart all the proteins of a cell or an organ and to thereby find hints to their function or malfunction in a disease. The application of proteomics spans from the identification of microorganisms to stem cell research and aging research and it has already lead to many novel insights and discoveries in the medical sciences. For instance, researchers can now compare healthy tissues with cancer tissues to find out which proteins are involved in cancer. Very recently, Matthias Mann has developed a method for the fast and precise determination of proteins in cancer tissues, which is now being investigated for its clinical applicability.

**Matthias Mann** studied physics and mathematics at Gottingen University and obtained his Ph.D. in chemical engineering at Yale University. Here he was decisively involved in the development of electrospray ionization, which has become a key technology of the life sciences. As a post-doctoral fellow and later as a professor for bioinformatics at the University of Southern Denmark in Odense, he developed amongst others techniques the first bioinformatic search algorithms for peptide fragmentation data and SILAC, a new method of quantitative proteomics and a breakthrough in the mapping of protein interactions. Since 2005 Matthias Mann is director at the Max-Planck institute of biochemistry and since 2009 also the department head of proteomics at the Novo Nordisk Foundation Center for Protein Research in Copenhagen. Besides the Ernst Schering Prize, he will receive the Gottfried Wilhelm Leibniz Prize of the German Research Foundation in 2012, which entails a 2.5 million Euro research grant.



Established in 2002 by Schering AG, Berlin, the independent non-profit **Ernst Schering Foundation** aims to promote science and art with a special focus on the natural sciences and contemporary art. In addition, the Foundation promotes the scientific and cultural education of children and youth and the dialogue between science and society. Particular emphasis lies on projects in frontier areas, especially at the interface of art and science. The Ernst Schering Prize is one of the most prestigious German science prizes with a prize money of €50,000. It was established by the Ernst Schering Research Foundation in 1991 and is given annually. Since 2003, the prize has been awarded by the Ernst Schering Foundation. It is bestowed on an international level for particularly outstanding basic research in the fields of medicine, biology or chemistry.

**PLEASE DIRECT ALL ENQUIRIES TO:**

**Friederike Petersen**

Manager Public Relations

Schering Stiftung

Unter den Linden 32-34

10117 Berlin

Germany

Tel.: +49 30-20 62 29 67

[petersen@scheringstiftung.de](mailto:petersen@scheringstiftung.de)

[www.scheringstiftung.de](http://www.scheringstiftung.de)