



Research Institute of Molecular Pathology

5 September, 2016

Neuroscientist Wolf Singer to give Max Birnstiel Lecture at the IMP

The IMP - Research Institute of Molecular Pathology cordially invites you to attend the talk

„The cerebral cortex, a substrate for computing in high dimensional dynamic state space“

By Wolf Singer, Max Planck Institute for Brain Research Frankfurt

Date: Wednesday, 7 September 2016, 11.00 a.m.

Venue: IMP Lecture Hall, Dr. Bohr-Gasse 7, 1030 Vienna

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Wolf Singer is a central figure in the scientific and public debate on brain, mind and free will. As director at the Max Planck Institute for Brain Research, the Ernst-Strüngmann Institute (ESI) and Frankfurt Institute of Advanced Studies (FIAS), he became one of the leading neuroscientists of the last decades. His research focuses on the analysis of neuronal processes in the mammalian cerebral cortex that underlie higher cognitive functions and their deterioration in disease.

A pioneer in systems neuroscience, he set out to explore the basic principles of how the brain represents the world and generates perceptions, thoughts and mind. He was particularly interested in one of the fundamental problems for the brain: How to build an internal representation of an external object having only access to its individual features. How does it bind the different features together into a single coherent mental object? He discovered that external objects are not encoded in the firing of single object specific neurons, but are represented by spatially distributed, temporally synchronized neuronal ensembles encoding its individual features. This principle does not only apply to sensory representations but to any other internal generated mental objects and cognitive processes as well: the brain processes information through temporally coupled neuronal ensembles.

In his lecture, Prof. Singer will address basics of information processing in the cortex.

About Wolf Singer

Wolf Singer (73) studied medicine in Munich and Paris and received his doctorate from the LMU Munich in 1986. He specialized in neurophysiology and in 1975, he became professor for physiology at the Technical University in Munich. From 1981 to 2011, he was director of the Department of Neurophysiology at the Max Planck Institute for Brain Research in Frankfurt. In 2004, he founded the Frankfurt Institute for Advanced Studies (FIAS) and the Brain Imaging Center (BIC). In 2006, he founded the Ernst Strüngmann Forum and in 2008 the Ernst Strüngmann Institute (ESI).

Wolf Singer has received numerous scientific awards and is Chevalier de la Legion d'Honneur and member of the Pontifical Council for Culture.



Prof. Wolf Singer (Photo: Max Planck Institute for Brain Research, Frankfurt)

About the Max Birnstiel Lectures

The Max Birnstiel Lectures are a special series of seminars at the Research Institute of Molecular Pathology (IMP) in Vienna and represent the highest award that the IMP can give to outside scientists. They are named after the founding director of the institute, Max L. Birnstiel, who passed away in 2014. Each year, around six scientists of the life sciences are invited to deliver one of these lectures, among them a number of Nobel Prize laureates. The Max Birnstiel Lectures attract considerable attention on campus and within the wider scientific community and invariably draw a large audience to the IMP.

Programme of the Max Birnstiel Lectures:

www.imp.ac.at/seminars/max-birnstiel-lecture-series

About the IMP

The Research Institute of Molecular Pathology (IMP) in Vienna is a basic biomedical research institute largely sponsored by Boehringer Ingelheim. With over 200 scientists from 35 nations, the IMP is committed to scientific discovery of fundamental molecular and cellular mechanisms underlying complex biological phenomena. Research areas include cell and molecular biology, neurobiology, disease mechanisms and computational biology. The IMP is located at the Vienna Biocenter.

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