

CAJAL CENTENARY CONFERENCE

PROGRAMME

**CosmoCaixa Science Museum, Barcelona,
25-29th April, 2006**

The Cajal Centenary Conference
25th - 29th April, 2006
Barcelona, Spain



Tuesday April 25, 2006

OPENING CEREMONY

18:00

CosmoCaixa Science Museum, Neuroscapes & The Cajal Conference **Jorge Wagensberg**, Director Barcelona CosmoCaixa Science Museum

18:30

Introduction to the Conference: **Torsten Wiesel**

19:00

Neuroscapes Presentation: **Javier DeFelipe** & **Henry Markram**

19:30

Neuroscapes Inauguration and Cocktails

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Wednesday April 26, 2006

10:00 **Session 1 – Chair: T. Wiesel**

The Anatomical Origins: Historical perspectives on the anatomy of the cerebral cortex from cajal to today

Overview Lecture: Anatomy since Cajal. **E. Jones**

11:00

Cajal's Impact on the Researchers of his Era. **J. DeFelipe**

11:30 Coffee Break

12:00

Discoveries of the Cells of the Cerebral Cortex. **P. Somogyi**

12:30 **Panel Discussion - Chair: P. Rakic**

The evolution of thoughts on the structure of the cerebral cortex and extrapolating to where we are heading

13:30 Lunch

14:30 **Session 2 – Chair: J. Rossier**

The Physiological Origins: Past and new perspectives on the physiology of the cerebral cortex

Inhibitory Neurons out of Touch **D. Prince**

15:00

The Way Cortical Neurons Communicate **A. Thomson**

15:30

Molecular and functional studies of GABAergic interneurons **H. Monyer**

16:00 Coffee Break

16:30

Plenary Lecture: Building Perceptions from Cortical Maps **A. Grinvald**

17:30 **Panel Discussion - Chair: Y. Fregnac**

What must be recorded to further understand the Cerebral Cortex?

18:00 **Poster Session (sangria and cheese)**

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Thursday April 27, 2006

10:00 **Session 3 – Chair: L. Garey**

Ontology and Phylogeny of the Cortex

The Golden Age of Cortical Microcircuits **A. Fairen**

10:30

The Rat Cortex **E. Soriano**

11:00

Genetic Building Blocks of Cortical Neurons **A. Ghosh**

11:30 Coffee Break

12:00

Plenary Lecture : **Elementary Steps to a Human Brain** **P. Rakic**

13:00

Panel Discussion: – **Chair: P. Rakic**

Evolution of the Neocortex. How similar is the neocortex across regions and species. What makes man special?

13:30 Lunch

14:30 **Session 4 – Chair: D. Prince**

Emergence of Electrical Dynamics in the Cortex

Impact of Single Neurons on Microcircuit Dynamics. **G. Tamas**

15:00

Slow Dynamics from Fast Neurons **L. Abbott**

15:30

How Neuronal Activity Controls the Blood Supply **J. Rossier**

16:00 Coffee Break

16:30

Plenary Lecture: **Detailed Modeling of the Neocortical Microcircuit** **I. Segev**

17:15 Panel Discussion - **Chair : L. Abbott**

What makes cortical neurons special? What are the benefits of neuronal diversity? Can the cortex be modeled? What are the benefits of being able to model the cortex?

18:00 **Poster Session (sangria and cheese)**

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Friday April 28, 2006

10:00 **Session 5 – Chair: W. Singer**

On the emergence of intelligence

Micro-Architecture in Visual Cortex Revealed by Functional Imaging **C. Reid**

10:30

Plenary Lecture: Sculpturing Perceptions with Seas of Spikes **M. Nicolelis**

11:30

The Dendritic Object Theory **H. Markram**

12:00 **Coffee Break**

12:30

Key Note Lecture: Consciousness and Computers **B. Bishop**

13:30 **Lunch**

14:30

Understanding Perception and Consciousness through Virtual Reality **M. Sanchez-Vives**

15:00

Circuit Specializations for Visual Processing **R. Douglas**

15:30

Building perceptions from synchronous events **W. Singer**

16:00 **Coffee Break**

16:30

Plenary Lecture: Healing the Brain by Changing the Brain **M. Merzenich**

17:30 **Panel Discussion - Chair: W.Singer**

Neural correlates of information, intelligence and consciousness. What can the neocortex do that other regions can't? How do we remember the past in a rapidly changing brain?

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Saturday April 29, 2006

10:00 **Session 6 – Chair: *M. Toledo***

Cellular, synaptic and circuit bases of brain and disorders

Targeting the prefrontal cortex in the treatment of psychoses ***F. Artigas***

10:30

Minicolumnar changes in Autism ***M. Casanova***

11:00

New Insights into Retts Syndrome ***S. Nelson***

11:30

Schizophrenia – when cortical development goes wrong ***L. Garey***

12:00

Award Presentation of Neuroscapes (IBRO) and Poster Award. ***A. Aguayo***
President of IBRO

CLOSING CEREMONY

12.30 Lunch

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