

12th Otto Loewi and 1st ELSC Conference

Eilat 26-30 November 2011

"OTTO LOEWI'S DREAM (OR NIGHTMARE) ON NEURONS AND SYNAPTIC COMPLEXITY"

Saturday evening Nov 26th

16:00-18:00 Registration

18:00-18:30 Opening Remarks

Itzhak Parnas, Josef Dudel, Eilon Vaadia

18:30-19:15 Plenary Lecture

Rodolfo Llinas Towards Cognitive Robots.

Sunday Nov 27th

1) **Cortical Processing - Chairman:** Arthur Konnerth

09:00-09:35 Michael Brecht Correlates of Spatial Experience and Cortical Lamination.

09:35-10:10 Ilan Lampl Mechanisms and Functions of Sensory Adaptation in the Somatosensory System.

10:10-10:45 Israel Nelken Stimulus-specific Adaptation in Auditory Cortex.

10:45-11:15 **Coffee Break**

11:15-11:50 Nathalie Rochefort New Circuit Mechanisms Underlying the Development of Direction-selectivity in the Mammalian Cortex

11:50-12:25 Eilon Vaadia Sensorimotor Learning and Brain Machine Interface.

2) **From microcircuits to functional networks - Chairman:** Idan Segev

15:00-15:35 Haim Sompolinsky Design Principles for Local Cortical Circuits.

15:35-16:10 Menahem Segal Synchronized Activity in Small Networks of Central Neurons.

16:10-16:45 Fritjof Helmchen Repeated Probing of Neural Network Function In -vivo Using a Genetically-Encoded Calcium Indicator.

16:45-17:15 **Coffee Break**

17:15-17:50 Barry Connors Inhibitory Circuits in the Thalamocortical System.

17:50-18:25 Gilad Silberberg Feedback and Feedforward Inhibition in the Striatal Microcircuitry.

Monday Nov 28th

3) **Integration and Plasticity of Hippocampal Networks - Chairman:** Menahem Segal

09:00-09:35 György Buzsáki Temporal Constraints on Mechanisms of Hippocampal Representations.

09:35-10:10 Uwe Heinemann Role of Monoamines in Setting of Neural Ensemble Activities.

10:10-10:45 Heinz Beck Integration Modes in Hippocampal Neurons.

10:45-11:15 **Coffee Break**

11:15-11:50 Inna Slutsky Regulation of Hippocampal Plasticity by Ongoing Synaptic Activity and Experience.

11:50-12:25 Yoel Yaari Intrinsic Neuronal Plasticity in Hippocampal Epileptogenesis

4) **Neurons and networks of the spinal cord - Chairman:** Uwe Heinemann

15:00-15:35 Jørn Hounsgaard Of Neurons and Networks. Lessons from the Turtle.

15:35-16:10 Aharon Lev-Tov The Involvement of Specific Groups of Genetically Targeted Spinal Relay Neurons in Sensorimotor Integration.

16:10-16:45 Yifat Prut Temporal Properties of Motor Actions.

SOCIAL EVENT

Tuesday Nov 29th

5) Integration in neuronal subcompartments - Chairman: Barry Connors

- 09:00-09:35 Arthur Konnerth Synaptic Signaling in Dendrites and Spines of Cortical Neurons In-vivo.
09:35-10:10 William Ross Calcium Waves and Sparks in Dendrites.
10:10-10:45 Idan Segev What Do Inhibitory Synapses Tell their Target Dendrites?
10:45-11:15 **Coffee Break**
11:15-11:50 Benjamin Torben-Nielsen An Inverse Approach for Elucidating Dendritic Function.
11:50-12:25 Michael Gutnick Sodium Channels and Neuronal Excitability in the Cerebral Cortex.

6) New Era in Cerebellar Research - Chairman: Rodolfo Llinas

- 15:00-15:35 Chris De Zeeuw The Cerebellum: from Chaos to Control.
15:35-16:10 Egidio D'Angelo Gating of Cerebellar Plasticity by the Cholinergic and Serotonergic Systems.
16:10-16:45 Yosi Yarom The olivo-cerebellar loop: The key to unraveling cerebellar processes.
16:45-17:15 **Coffee Break**
17:15-17:50 Michael Hausser **The coupled olive: a moveable feast**
17:50-18:25 Angus Silver Disentangling Electrical and Chemical Synaptic Signaling in Golgi Cells.

Wednesday Nov 30th

7) Genes and molecules in the axonal terminals

- 09:00-09:35 Thomas Misgeld In-vivo Imaging of Axonal Degeneration.
09:35-10:10 Oren Schuldiner Sculpting the Mature Nervous System: Molecular Mechanisms of Neuronal Remodeling.

10:10-10:30 **Coffee Break**
10:30-11:05 Dietmar Schmitz Role for Plasticity-related Gene in Synaptic Transmission.
11:05-11:40 Nils Brose Dynamic Control of Neurotransmitter Release - Speed and Accuracy Matter.

11:45-12:30 Plenary Lecture
Winfried Denk Structural Neurobiology, the Old and New Bottleneck.

12:30-12:45 Closing Remarks
Yosi Yarom, Arthur Konnerth