Heller Lecture - Alexander Borst

June 12, 2012

Title of the lecture: Neural Circuits in the Cockpit of the Fly

Heller Lecture Series in Computational Neuroscience

On the topic of "Neural Circuits in the Cockpit of the Fly"

Location: ELSC-ICNC Center Silverman Bldg., 3rd wing, 6th floor
Date & Time: **Tuesday June 12** at 17:00

**Abstract:**

When a fly is buzzing around, the images of the environment constantly flow across its eyes. The distribution of motion vectors in the animal's visual field is called 'optic flow'. The optic flow contains a wealth of information about the animal's own course and, thus, is used extensively for visual course control. In the fly, visual signals are processed in several consecutive layers of neuropile. As the single
most important computation along this way, local motion vectors are calculated by elementary motion
detectors. As a result, the optic flow is now represented by somewhat we might call a 'Neural Flow'. These
signals are spatially pooled in the lobula plate by a set of large tangential cells. Tangential cells are often
tuned rather specifically to a particular optic flow. Their output can therefore be directly used for
compensatory head movements or course correction maneuvers. As a technical application, the analysis
of the neural circuits underlying visual course control in the fly led to the development of an aerial robot.

ATTACHMENTS

- poster_heller_borst_12.6.2012.pdf (1.37 MB)

ELSC Seminar
Heller Lecture Series in Computational Neuroscience
Upcoming Events
Tags: Events Alexander Borst Heller 2011-2012

It is now widely accepted that deciphering the enigma of the brain is the most challenging intellectual
endeavor of the 21st century, "The Century of the Brain" - Join our quest and become a friend of ELSC.

read more

Studying at ELSC

Our Int'l Ph.D. program provides outstanding students with top-notch courses in computational neuroscience.

read more

The Building

The Jerusalem Brain Sciences Building will provide a state-of-the-art research and teaching facility for the
Edmond and Lily Safra Center for Brain Sciences.
Get into our media channel and investigate ELSC's latest videos: seminars, public lectures, courses and video articles.

Source URL: http://elsc.huji.ac.il/content/heller-lecture-alexander-borst