Heller Lecture - Prof. Robert Shapley

March 20, 2012

Title of the lecture: "Neuronal basis for the unitary perception of color and form"

Heller Lecture Series in Computational Neuroscience

On the topic of
"Neuronal basis for the unitary perception of color and form"

Location: ELSC-ICNC Center Silverman Bldg., 3rd wing, 6th floor
Date & Time: **Tuesday March 20, 2012** at 17:00

Abstract:

Using common sense or introspection, we *know* that color is a visual property of objects and surfaces that we perceive separately from shape or direction of motion or depth order in the visual scene. Vision scientists often have studied color perception under conditions where form is minimal. It is natural for us as scientists and also as
human beings to think of color as separate and apart. But on the contrary, color and form are linked inextricably as properties of objects in visual perception and in the visual cortex. The famous psychologist Gaetano Kanizsa was an eloquent advocate of this viewpoint; he wrote:

"...space and color are not distinct elements but, rather, are interdependent aspects of a unitary process of perceptual organization."
(Kanizsa 1979)

The reason for the linkage of color and form is that the brain needs to construct a color signal to recover, as well as it can, the reflective properties of a surface, independent of illumination. So, neural mechanisms of color perception must make computations that take into account the spatial layout of a scene as well as the reflectances of the surfaces in the scene. Our work suggests that the primary visual cortex, V1, plays an important role in neural computations for color and form perception, through the construction of spatially-tuned double-opponent color cells.

ELSC Seminar
Heller Lecture Series in Computational Neuroscience
Upcoming Events
Tags: Events 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.

Studying at ELSC

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

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-prof-robert-shapley